

System Programming

Tracer Summit[™] Version 17



Tracer Summit Version 17

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Tracer Summit System Programming

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The following format and symbol conventions appear at appropriate sections throughout this manual:

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Note:

A note may be used to make the reader aware of useful information, to clarify a point, or to describe options or alternatives.

• This symbol precedes a procedure that consists of only a single step.



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Chapter 1 Introduction

Welcome to the *Tracer Summit System Programming* guide. This guide provides a reference for setting up and configuring the Tracer Summit software to automate your building. Here you will find background information and step-by-step procedures describing how to perform these activities.

What's new

- Trend Viewer—View trended data in graphical format (see "Using the Trend Viewer" on page 425).
- Simplified Overrides—Override system values from a graphic using an easy-to-use user interface (see "Overriding System Values" on page 171).
- Display override status from a graphic—Hand icon shows when an object has been manually overridden (see "Displaying Override Status" on page 564).
- Category Alarms—Assign alarm categories (1-5) based on importance: categories can be assigned to alarms, workshifts, individuals, and more (see "To set up event classes:" on page 82).
- Alarm pop-up dialog boxes—Display alarm pop-up dialog boxes with alarm/event information for alarms (see "Configuring Category Alarm Buttons and Pop-up Dialog Boxes" on page 565).

Tracer Summit Optional Value-added Packages

Table 1 on page 2 lists optional features and the package with which they are bundled. You can purchase each package separately, but you must have Tracer Summit Version 13 or higher to start.



Introduction

Table 1. Optional Value-added Packages

Feature/Description	Tracer Summit	Tracer 100/ Tracker Commun- ication	Building Manage- ment	Enterprise Manage- ment	Critical Control System (CCS)
BCU operator display					
 Select objects for display in standard screens Create custom screens, which display live information and a monochrome bitmap and links to other screens View alarms and acknowledge them Optional password protection 	Add-on				
Call center					
alarms from the workstation and the recipient.			Х	Х	
Copy site					
Copy an existing site database, graphics, and reports as a new site.	х	х	х	х	х
Event log		•		•	
Filter and sort events from the local event log of the Tracer Summit BCU. For more informa- tion, see the <i>Tracer Summit Daily Operations</i> guide.	х	х	х	х	х
Tracer 100 and Tracker alarm support		Х		Х	
Shared SQL event log				Х	Х
Global changes					
Using global changes, modify items in one site and easily have those changes take effect at other sites within a group.				x	
Select several similar objects in a site, modify them, and have those changes take effect for all the selected objects.	х	x	х	х	
Groups		-		-	
Define individual sites as parts of a group. Assign levels of user access to the groups.				x	
Message forwarding					
Forward alarms to a user-defined e-mail address. Users defined as on-call recipients can receive the e-mails on PCs or or on their cell phone/pagers.	Х	х	х	х	Х



Table 1. Optional Value-added Packages (Continued)

Feature/Description	Tracer Summit	Tracer 100/ Tracker Commun- ication	Building Manage- ment	Enterprise Manage- ment	Critical Control System (CCS)		
Multi-user database sharing							
Handle large numbers of sites and share the database from a central server. * Tracer Summit has been designed to work specifically with Microsoft SQL Server data- bases.				Х	х		
Navigation tree							
Now has Windows Explorer features such as drag and drop, open, cut and paste, and find.	х	x	х	х	х		
Task manager							
 Schedule automatic scans and backups of sites Start immediate scan of single remote sites Download off-line global changes made to sites Automatically archive the event log as a Microsoft Excel file, as a text file, or as both 			х	х			
Tracer 100 and Tracker (EMTK) Support and Tracer 100 or Tracker Configuration							
 Connect to Tracer 100 and Tracker (EMTK) panels Communicate with Tracer 100 and Tracker panels using BMN-like terminal emulation Edit calculated binary/analog, and schedules. Run equipment diagnostic summary reports Download schedules to Tracer 100 panels Override calculated binary/analog (point types 8 and 11) 		х		х			
Trend Viewer	Х	Х	Х	Х	Х		
View historical trends (Audit Trail data) using the Trend Viewer				x	x		



Important Things to Know Before Using this Guide

The following list describes important prerequisite knowledge or skills that you should have available when programming Tracer Summit software. This list is not exhaustive and serves to remind you of things that Trane installation engineers have learned from years of implementing Tracer Summit at client sites.

- **Facilities**—Know your facility. Know its needs and the different programmable inputs/outputs it uses, as well as the equipment that you will be controlling.
- **Infrastructure**—Understand what telecommunication and local area network/wide area network (LAN/WAN) that your facility has in place. What are its current needs and what are its future needs? Do you have a cell phone/pager service? What are your mail server requirements?
- **Groups**—The Enterprise Management Package allows you to create groups of sites. To group sites, have your sites organized and know where and how they fit together. Bring this information with you when you organize sites into Tracer Summit groups.
- **Users and Security**—If you are managing sites with various levels of users, know who they are and what requirements Tracer Summit can fulfill for them. You do not want to find yourself at a critical moment with users whose security levels are too low or too high.
- **Knowledge of Various Trane Products**—If you are connecting to Tracer 100 or Tracker panels or a BCU operator display, it is recommended that you have the installation and set-up guides handy to consult.
- Interaction with Other Software—To use certain features in the Tracer 100/Tracker Communication and Enterprise Management packages, Tracer Summit makes use of other software platforms. These include various Microsoft operating systems, Microsoft SQL Server databases, and mail servers. Have the documentation for these other systems available.
- **Naming Conventions**—Spend some time thinking about how you want to name objects in your site. Then use those names appropriately and consistently throughout the system.



For More Information

Use this guide in conjunction with the online Help system and the online library. Descriptions of all of the fields that you will see on Tracer Summit screens are in Tracer Summit Online Help. Press F1 on any screen to access online Help.

For information on how to maintain and operate Tracer Summit sites on a daily basis see the Tracer Summit *Daily Operations* guide. See the *Daily Operations* guide for more information on event logs.

Multi-use database sharing is also an advanced feature that is discussed in engineering bulletin BAS-PRB011-EN, *Tracer Summit Best Practices*.

Read the *Release Notes.* This is strongly recommended because this documentation has all the up-to-date information about Tracer Summit. Any new information about Tracer Summit programming not contained in this guide is in the release notes.

For a definition of important terms and acronyms used in this guide, see the "Glossary" on page 671.

To fully learn about the capabilities of Tracer Summit and how they can benefit you, consider enrolling in Tracer Summit training classes. For more information about these classes, see the course descriptions at http:/ /www.trane.com/commercial/training/trainbas.asp#fifteen.

Further References

Tracer 100 Series Panels

- Tracer 100 Series Installation Guide (EMTF-IN-6)
- Tracer 100 Series Operator's Guide (EMTB-OG-15)
- Tracer 100 Series Programming Guide (EMTB-PG-11)
- Tracer 100 Version 15.1 Addendum to Tracer 100 Series Literature (EMTB-AD-4)
- T100 Version Conversion Programs (EMTB-IN-10)
- Tracer 100 Troubleshooting / Repair (EMTB-TSR-2A)
- Tracer 100i, 100L, and Chiller Plant Manager Troubleshooting / Repair (EMTF-TSR-1)
- Tracer 100 Installation Guide (EMTB-IN-12)
- Tracer 100 Series Building Management System Unit-To-Unit Communications (BAS-EB-12)
- Tracer 100 Series Software Versions (BAS-EB-25)
- Tracer 100 Series Custom Reports (BAS-EB-54)
- Tracer 100i, 100L, and Chiller Plant Manager Installation Guide (EMTF-IN-6)



Introduction

Tracker Panels

- Tracker Installation Guide (EMTK-IN-7)
- Tracker Operator's Guide (EMTK-OG-8)

Tracer Summit

- Tracer Summit for Windows and Ethernet (BAS-EB-70)
- Commissioning Tracer Summit BACnet Projects (BAS-PRB002-EN)
- Tracer Summit Connections to LonTalk Devices (BAS-PRB003-EN)
- Tracer Summit BACnet / IP Network Installations (BAS-PRB004-EN)
- Building Control Unit Sizing for Tracer Summit Systems (BAS-PRB005-EN)
- Tracer Summit Chiller Plant Control (BAS-EB-64)
- Tracer Summit Software Versions (BAS-PRB-006-EN)
- Tracer Summit Multisite Best Practices (BAS-PRB011-EN)
- Using Tracer Summit with a SQL Server Database (BAS-PRB012-EN)



Chapter 2

Programming Order Checklist

This chapter describes the recommended programming order. It also provides a checklist for setting up the Tracer Summit system.

Setting Up a PC Workstation

(Refer to Tracer Summit Hardware and Software Installation guide.)

- 1. Install one of the following operating systems: Windows NT 4.0 (SP6 or greater), Windows XP (SP1 or greater) or Windows 2000 (SP3 or greater).
- 2. Install Tracer Summit using the CD.
- 3. Install the ARCNET or Ethernet related hardware and software.
- 4. Install a Trane-specified modem in the PC workstation if the PC workstation communicates remotely with a BCU.
- 5. Install any additional customer software.
- 6. Have the building owner set up TCP/IP support, if required.

Setting Up a Site

- 1. Use the Site Creation/Connection Wizard to create, upload, or connect to a site. (See Chapter 6, "Configuring Tracer Summit BCU Sites" and Chapter 7, "Defining Tracer 100 or Tracker Sites.")
- 2. Define units of measure. (See Chapter 6, "Configuring Tracer Summit BCU Sites.")
- 3. Define devices (PC workstations, BCUs and non-Trane devices). (See Chapter 6, "Configuring Tracer Summit BCU Sites" and Chapter 7, "Defining Tracer 100 or Tracker Sites.")

Note:

Back up the Tracer Summit system periodically during this process.

- 4. Create UCM links and addresses.
- 5. Set up time and date and synchronize with connected devices.
- 6. Set up site control priorities as follows:

Programming Order Checklist



- BACnet defaults. (See Chapter 37, "Using BACnet for Non-Trane Devices.")
- Tracer Summit defaults. (See Chapter 6, "Configuring Tracer Summit BCU Sites" and Chapter 7, "Defining Tracer 100 or Tracker Sites.")
- 7. Set up site security access. (See Chapter 9, "Setting Up Security— Tracer Summit System.")
- 8. Route alarms and events. (See Chapter 6, "Configuring Tracer Summit BCU Sites.")
- 9. Set up printers in the following order:
 - Set up operating system printer
 - Set up Tracer Summit printer (See Chapter 10, "Setting Up Printers, Modems, Cell Phones, and Pagers.")
- 10. Set up modems and cell phone/pagers (if used). (See Chapter 10, "Setting Up Printers, Modems, Cell Phones, and Pagers.")
- 11. Use binary and analog input/output objects to customize the system. (See Chapter 17, "Creating Input/Output Objects.")
- 12. Configure the communication settings for the site. (See Chapter 6, "Configuring Tracer Summit BCU Sites.")

Setting Up Tracer Summit Applications

- 1. Set up Chiller Plant Control, if applicable. (See Chapter 19, "Chiller Plant Control.")
- 2. Set up Area Control for HVAC, lighting, and equipment: See Chapter 20, "Area Control Application."
- 3. Set up variable air volume (VAV) system, if applicable. (See Chapter 22, "Comm3/Comm4 VAV Air Systems." and Chapter 21, "Comm5 VAV Air Systems")
- 4. Set up Time of Day Scheduling:
 - Events
 - Exceptions
 - Holidays

(See Chapter 24, "Time of Day Scheduling.")

5. Write custom programs. (See Chapter 25, "Custom Programming Language.")



Setting Up Graphics

- 1. Create graphics. (See Chapter 30, "Using the Graphics Editor.")
- 2. Set up the navigation tree. (See Chapter 26, "Using the Navigation Tree.")

Setting Up Reports

- 1. Set up trends. (See Chapter 29, "Trending Data.")
- 2. Set up calculations. (See Chapter 31, "Using the Calculations Editor.")
- 3. Design reports. (See Chapter 32, "Designing Reports.")

Setting Up Group Configuration

- Use the Site (Creation/Connection) Wizard to create, upload, or connect to a site. (See Chapter 6, "Configuring Tracer Summit BCU Sites.")
- 2. Create groups. (See Chapter 13, "Creating Groups of Sites.")

Setting Up Group Security

- 1. Create groups. (See Chapter 13, "Creating Groups of Sites.")
- 2. Set up security for the groups. (See Chapter 9, "Setting Up Security— Tracer Summit System.")

Backing Up the System

- 1. Back up the Tracer Summit site database. (See the *Tracer Summit Daily Operations* guide.)
- 2. Back up reports. (See the Tracer Summit Daily Operations guide.)
- 3. Move files between PC workstations.



Programming Order Checklist



Chapter 3 Online and Offline Programming

Information Flow in Tracer Summit

Tracer Summit uses an object-oriented distributed database to store and retrieve all system information. An up-to-date copy of the database is stored in each PC Workstation and appropriate data is stored in the BCUs that are communicating (or online). All programming (setup information) is entered from a PC Workstation, stored in the PC Workstation database, and tagged to be downloaded to the BCUs. The information is then sent from the BCUs to additional workstations, if necessary.

If the PC Workstation is online (communicating with the BCU), the information is downloaded immediately to the BCU. If the workstation is offline, the information is stored in the workstation's database until it goes online with the BCU. Then, the newer information gets downloaded from the PC to BCU.

If you have the Tracer 100/Tracker Communications package installed, you can program Tracer or Tracker panels online and offline. The information from these sites is uploaded to your workstation from a Tracer 100 or Tracker site when you first connect to it. Any changes that you make online are immediately sent to the site. Offline changes download when you connect to the site.

If you have the Building Management installed, you can schedule offline changes using the Task Manager. You can choose to download immediately or to download in the future at a time that you specify.

You can also program changes and apply them globally to single sites. If you have the Enterprise Management package, you can program global changes for groups of sites. Then, using the Task Manager you can specify when these global changes are downloaded to the groups of sites.

IMPORTANT

For the most efficient and trouble-free programming, use online programming whenever possible.



Online Programming

Online programming is recommended for several reasons:

- With online programming, the order in which programming occurs determines the settings in the system. For example, if one PC Workstation programs a setpoint at 1:00 P.M., then another PC Workstation programs the same setpoint at 2:00 P.M., the programming that occurred at 2:00 P.M. automatically takes precedence and replaces the earlier programming in the first PC.
- Some configuration information and internal diagnostics reside in the BCUs. When the PC Workstation is online, all the information in the BCUs is available.
- Some configuration information and internal diagnostics reside in the unit controllers. When the PC is online, and the unit controllers are connected and communicating to the BCU(s), all the information is available.
- With online programming, you can immediately verify each step in the process.

Offline Programming on a New Site

In some situations, you may choose to use offline programming to set up the Tracer Summit system on a new site. For instance, when the BCUs at a site are not yet installed but the PC Workstations are configured, offline programming allows you to start setting up the system. Some programming tasks that can be done offline include:

- Configuring the site
- Creating input and output objects
- Creating schedules
- Creating areas
- Creating VAV air systems
- Setting up site security
- Setting up UCMs (see special issues with offline programming below)
- Creating graphics and reports

IMPORTANT

Offline programming changes *must* be performed on a single PC Workstation. Choose a single workstation to serve as the master workstation and perform all offline programming on that workstation only. A master workstation prevents the loss of user program data. This may occur when changes that have been made by one user are overwritten by changes made by another user. The workstation keeps a copy of the programming in its database on its hard drive. When the BCUs are installed and online, the PC Workstation downloads this database to the BCUs.


You should test any setup functions performed with offline programming *after* the BCUs and PC Workstations are online and the database has been downloaded.

When performing offline programming, note the following constraints and suggestions:

- 1. Using additional workstations for graphics setup. If time constraints require that two or more PC Workstations be used to set up the system, dedicate one workstation for site configuration and database setup. Use the other workstations to create background graphics files and edit CPL routine text files. These items can be transferred easily between workstations with a floppy disk or other media. Set up one workstation completely before you connect other workstations to the Tracer Summit system.
- 2. **Dynamic values show as "???".** When you create graphics on a PC Workstation that is not online, dynamic values do not show up on the graphic until the PC Workstation is online. In place of the value, "???" appears.
- 3. **Applications cannot be tested.** You can set up application programs offline but you cannot test them. For example, custom programming routines can be written and compiled offline, but you must test each routine when BCUs are online.
- 4. UCM-resident information cannot be accessed. Some information, such as PCM setup information, is UCM-resident only and can only be accessed when the BCU is online. When setting up a UCM offline, the graphic that displays is the UCM default graphic or a user-specified custom graphic, rather than the graphic for the specific UCM that exists on the site. You must also select a unit type for the UCM in the Change Unit Type field in the Setup screen of the UCM editor. When you are programming online, the system automatically reads the UCM type and provides the type as a display only field. When you are programming offline, you must provide the UCM type.



Offline Programming of an Existing Site

Offline programming modification of an existing site is *not recommended*. If the BCUs are installed and communicating with the PC Workstations, use online programming if at all possible. Any changes to Site Configuration of an existing site must be done online.

Note:

If you have the Enterprise Management package, you can make programming changes to groups of sites. Offline programming is recommended to take full advantage of the application. For more information, see "Programming Offline with Global Changes" on page 18.

When you must modify an existing site offline, be sure that the following conditions exist:

- Make sure the latest copy of the database is loaded onto the offline computer. If the workstation or laptop has been online with the Tracer Summit system, it will contain the latest database. If the computer hasn't been online, you can copy the database to it using Tracer Summit's Backup Site Database utility.
- If possible, prevent other PC Workstations from making edit changes to the system while the offline programming is in process. When offline programming is downloaded to the BCUs, it will overwrite any changes made from another workstation.

For example, if the same alarm limit in an analog input is programmed to 50°F by an operator online and then to 45°F by an operator offline, the newly downloaded offline setting (45°F) will take precedence and overwrite the online setting when the offline program is downloaded.

To program an existing site offline, follow the steps in the section "Programming an Existing Site Offline" on page 14.

After you have programmed the site, you need to either update or replace the existing site. Refer to "Updating an Existing Site with Offline Programming Changes" on page 15 or "Replacing an Existing Site with a Site Programmed Offline" on page 16.

Programming an Existing Site Offline

- 1. Verify that the latest site database is installed on the offline workstation. If the database does not yet exist on the offline workstation, use one of the following methods to transfer the site to the offline workstation:
 - Upload the existing database from the BCUs to the offline workstation. Be certain that all of the BCUs are communicating when uploading the site.
 - Restore a recent backup of the site database as explained in Chapter 38, "Restoring into the Tracer Summit Workstation."



- 2. Connect to the site and achieve database synchronization. You may observe database synchronization status by running the Tracer Summit System Status utility described in Chapter 5, "Utilities." Be certain that all of the BCUs are communicating while observing database synchronization status.
- 3. Back up the local site database to a secure location. See the *Tracer Summit Daily Operations* guide for information on backing up a site.
- 4. Prevent the online local workstation from making any site programming changes. This can be assured by assigning read-only applications security to all of the users at the site.

In addition, do not allow a site database restore operation while programming offline.

- 5. Make programming changes offline. Objects may be created, edited, and deleted while offline.
- 6. When the programming changes are complete, back up the offline site database containing the programming changes to a diskette or another location that will be accessible by the local workstation. Also back up graphics (objects, HTML files, and images) and reports, if created or modified offline.

If you have the Building Management or Enterprise Management package, you can back up groups of sites at scheduled times using the Task Manager.

7. Follow the steps in either "Updating an Existing Site with Offline Programming Changes" on page 15 or "Replacing an Existing Site with a Site Programmed Offline" on page 16.

Updating an Existing Site with Offline Programming Changes

- 1. Reconnect the offline workstation to the site and achieve database synchronization. You may observe database synchronization status by running the Tracer Summit System Status utility described in Chapter 5, "Utilities." Be certain that all of the BCUs are communicating while observing database synchronization status.
- 2. Restore graphics (objects, HTML files, and images) and reports, if created or modified offline.

If you have the Building Management or Enterprise Management package, schedule the download in Task Manager to occur at a specified time or run an immediate scan.

3. Open the edited applications while online and verify that the programming changes were properly downloaded to the site.

If you have the Building Management or Enterprise Management package, check the error log to verify that your programming changes downloaded correctly.



Replacing an Existing Site with a Site Programmed Offline

In some cases, it may be necessary to completely replace an existing site's database. For example, if you are unsure if programming changes were made by an operator while the offline programming was being done, it is recommended that the database be replaced, rather than updated.

To replace an existing site with a site programmed offline:

1. Back up the local site database to a secure location from a primary, online workstation. See the Tracer Summit *Daily Operations* guide for information on backing up a site.

If you have the Building Management or Enterprise Management package, you can back up groups of sites immediately or at scheduled times using the Task Manager.

- 2. Disconnect the LAN cable from any secondary workstations on the site.
- 3. While online with all of the BCUs on the site from the primary online workstation, select Clear Database Ram and Reset from the BCU Reset/Restore utility on the Tools menu. Alternatively, you may clear the database manually at each BCU. (See Chapter 40, "Resetting a Device", for information on clearing a BCU database.)
- 4. Immediately disconnect the LAN cable from the primary workstation. This will prevent the BCUs from obtaining the obsolete database from the workstation.
- 5. Perform a database restore operation on the primary local workstation, using the backup copy of the database containing the offline programming changes. This backup was created in step 6 of the section "Programming an Existing Site Offline" on page 14. See Chapter 38, "Restoring into the Tracer Summit Workstation", for information on restoring a site database.
- 6. Reconnect the LAN cable or modem on the primary local workstation. The BCUs will download the updated database. Allow the site to achieve database synchronization with all of the BCUs. You may observe database synchronization status by running the Tracer Summit System Status utility described in Chapter 5, "Utilities." Be certain that all of the BCUs are communicating while observing database synchronization status.

If you have the Building Management or Enterprise Management package, schedule the download in Task Manager to occur at a specified time or run an immediate scan.

- 7. Restore graphics (objects, HTML files, and images) and reports, if created or modified offline.
- 8. On secondary workstations you can either:
 - Upload the new database from the BCU or



• Make a backup of the new database at the main workstation and restore it on the secondary workstation following steps 5 and 6 above.

Repeat step 7 for the secondary workstation. Reconnect the LAN cable.

9. Open the edited applications while online and verify that the programming changes were properly downloaded to the site.

If you have the Building Management or Enterprise Management package, check the error log to verify that your programming changes downloaded correctly.

Offline and Online Programming of Tracer 100 Sites

The information provided in the preceding sections applies to online and offline programming of Tracer 100 sites. Read those sections before considering the following paragraphs.

If you have the Tracer 100/Tracker Communications or Enterprise Management package installed, Tracer Summit allows you to program Tracer 100 and Tracker sites online through terminal emulation. In terminal emulation you can program objects and modify them. All programming changes that you make online are immediately transmitted to the site.

To program offline you must first upload Tracer 100 objects to your workstation database. This is because all Tracer 100 and Tracker objects are created at the panel. Objects are uploaded to your workstation when you first connect to a Tracer 100 site.

After a site's objects are in your database, you can program some of the site's objects offline using the Tracer Summit editors. For example, you can use Tracer Summit to change Tracer 100 schedules or override calculated binaries and analogs.

After you have programmed changes, the next time that you log on to the site the programming changes download automatically. If the panel has been changed locally, these changes are also uploaded to the database.



Replacing an Existing Tracer 100 Site with a Site Programmed Offline

Replacing an existing Tracer 100 site is different from the procedure for BCUs described in "Replacing an Existing Site with a Site Programmed Offline" on page 16. Unlike BCUs, you cannot reset the RAM or memory of a Tracer 100 site from the Tracer Summit software. You must reset Tracer 100 at the panel itself.

To replace an existing Tracer 100 site with a site programmed offline:

• Perform the procedure described in "Restoring a Tracer 100 Panel" on page 668.

Programming Offline with Global Changes

If you have installed the Enterprise Management package, you can perform offline changes and apply those changes to multiple sites. Although it is generally not recommended that you edit sites when offline, the global changes functions have been designed to minimize the risk of offline editing. Only certain objects and object properties are available for editing sites offline using global changes. For a list of these objects and more information on making changes to sites and applying them globally, see "Making Global Changes" on page 203.



Chapter 4 Using Referencer Edit Controls

Referencer edit control fields (sometimes called *referencers*) are used throughout the Tracer Summit system to allow you to set the value of one property equal to the value of another property. They are commonly used for setpoints and other types of system information where you may need to make one value dependent on another value in the system.

For example, you may want the chilled water setpoint of a chiller to use an analog output object that can be controlled from a graphic (see Chapter 30, "Using the Graphics Editor").

Referencer edit controls are identified by the mode button located on the left side of the field (see Figure 1).

Figure 1. Referencer Edit Control Field



Note:

For more information on objects and properties, refer to Chapter 5, "Utilities".



Referencer Edit Control Modes

Referencer edit controls have up to three primary modes through which you can toggle by clicking on the mode button (see Figure 1 on page 19). The three modes are:

- Constant
- Referencer
- Not Used (if available)

Depending on which mode you choose and the current state of system communications, one of these values displays in the referencer edit control field:

- A constant numerical analog value or binary value (92, 10.5, On/Off, Open/Closed, etc.)
- The value of the referenced property
- ??? (referencer failed)
- Not Used (if available)

Referencer edit control modes are described in the following sections.

Constant Mode

This mode allows you to either:

- Input a constant numerical value to control the field for analog fields. (The decimal place does not display if an integer is expected.)
- Select a constant value from a pull-down list (On/Off, Enable/Disable) if it is a binary or a multi-state field (see Figure 2).

Figure 2. Constant Mode





Referencer Mode

This mode allows you to reference another system property to control the field. Until you have selected a valid property in the referencer mode, the referencer edit control field is left blank. Once you have chosen a valid property, the property's value displays in the referencer edit control field. You can get to the referencer mode by clicking the mode button until the referencer button (...) is available on the right side of the field (see Figure 3).

Note:

Tracer Summit retains the selected property reference information even when the mode is changed to a constant or to the Not Used mode, but the value of the property will come from the most recently selected mode. This affects your ability to delete the object that contains the referenced property.

Figure 3. Referencer Mode

Mode button.



To reference a property:

1. Click the mode button in the referencer edit control field to toggle through the referencer edit modes until the referencer mode displays (see Figure 4).

Figure 4. Mode and Referencer Buttons



2. Click the referencer button. The Select Property Reference dialog box displays (see Figure 5).

Figure 5. Select Property Reference Dialog Box

Select Property	Reference	×
<u>T</u> ype:	Analog Output	
<u>N</u> ame:	VAV Cool Setpoint	•
Property:	Present Value	•
	OK Cancel	Help



- 3. Select the object type you would like to reference from the Type dropdown list.
- 4. Select the object you would like to reference from the Name dropdown list. The list contains only objects of the type you have chosen.
- 5. Select the property that will control the field from the Property list box. Only those properties belonging to the particular object you chose are available in this box. Depending on the type of field you are working with, the system automatically filters property types that are not appropriate. For example, if you are in a field that requires an analog entry, the dialog box displays with only analog properties to choose from.
- 6. Click OK when you have made your selections. To exit without saving, click Cancel.

Until you select a property reference, the referencer mode in the referencer edit control field is left blank. After you choose a valid property, the property's value displays in the referencer edit control field.

If "???" displays in the referencer edit control field, the referencer has failed and the system cannot access the referenced property.

When a Referencer Fails

If you choose the referencer mode and the system is unable to resolve the referenced property, "???" displays in the referencer edit control field. The UCM continues to use the last valid value it obtained (see Figure 6).

Figure 6. Failed Referenced Property



Referencers fail when Tracer Summit cannot get the referenced value back from the object where the property resides. This occurs when the communications between the PC workstation and BCU are down, or when you reference a property that is offline.

Not Used Mode

This option is available in a very limited number of fields in Tracer Summit. If this option is available and selected, Tracer Summit does not send a value to the UCM for this field. The UCM will derive the value from an algorithm, if appropriate (see Figure 7).

Figure 7. Not Used Mode

Refrigerant Concentration: 😰 Not Used



Referencer Edit Control Modes

For example, if Not Used is selected for the occupied cooling setpoint in a VAV UCM, the system calculates the setpoint by adding the differential to the occupied heating setpoint.



Using Referencer Edit Controls



Chapter 5 Utilities

This chapter includes the following sections:

- Viewing the Tracer Summit Electronic Library
- Viewing an object's properties
- Viewing the system connection status

Viewing the Tracer Summit Electronic Library

Tracer Summit software includes an electronic library that contains the following reference information:

- Object and property definitions for all UCMs and applications
- Standard graphics for UCMs and applications
- Sample reports
- Sample Custom Programming Language (CPL) files

The electronic library is located on the Tracer Summit Software Installation CD.



To view the Tracer Summit electronic library:

- 1. Click the Windows Start button, select Programs, then select Tracer Summit. The list of Tracer Summit applications displays.
- 2. Select Library. The electronic library displays in Internet Explorer (see Figure 8).

Figure 8. Viewing the Electronic Library in Internet Explorer



3. Click a selection on the left to view reference information.



Viewing an Object's Properties

Tracer Summit uses objects as the basic elements of the system. Objects include input and output points, UCMs, and applications. When you create an object, you set up the object's properties, or characteristic information. For diagnostic purposes, you can view this property information through the Setup menu's Objects and Properties command.

You can also view each object's properties from its applicable editor (for example, to view the properties of an analog input, you can access the Analog Input editor). However, viewing the properties with the Objects and Properties command allows you to view and compare several objects at once.

To view an object's properties:

1. From the Status menu, select Objects and Properties. The Object and Properties Selection dialog box displays (see Figure 9).

Diject & Properties Selection						×
Site:			Selected Properti	es:		
BASD2020	-					
Туре:						
Absorption Chiller (UCP2)	•	Add >>				
Name:						
Chiller B	•	<< Remove				
Properties:						
Property Name Absorber Water Flow Rate	<u></u>	<< Remove All				
Absorber Water Flow Status						
Absorber Water Press: Entering						
Absorber Water Press: Leaving Absorber Water Pump Output						
Absorber Water Temp: Delta						
Absorber Water Temp: Entering Absorber Water Temp: Leaving						
Alarm Event Class/011	•		•			►
				OK.	Cancel	Help

Figure 9. Object and Properties Selection Dialog Box

- 2. In the Site field, select the site name.
- 3. In the Type field, select the object type to be viewed. The Name field updates to include object names for the selected type.
- 4. In the Name field, select the object name.

Utilities



- 5. Select a property from the Properties list. To select multiple properties:
 - For properties listed consecutively, click the first property that you want, then hold down the Shift key and click the last property that you want.
 - For properties not listed consecutively, click the first property that you want, then hold down the Ctrl key and click on each additional property.
- 6. Click the Add button to add the selected properties to the Selected Properties list.
- 7. Repeat steps 3-6 for each object's properties you want to view.

Note:

If you have selected and added several properties and then you select a different object name (keeping the object type the same), those same properties are selected for the new object name. You can simply click the Add button to add them to the Selected Properties list. This can also be done for different object types and site names, allowing a broad variety of information to be displayed at one time.

- 8. To remove any properties, select the properties in the Selected Properties list, then click the Remove button. You can also click the Remove All button to remove all properties from the list.
- 9. After you have selected the properties you want to view, click OK. The Tracer Summit window displays the value of each property you selected (see Figure 10).

Figure 10. Example Objects and Properties Display

Site:	BASD2020	
Type:	Area	
Name:	Administration 1st North	
Proj	perty Name	Property Value
Auto He	at Cool Input	Cooling
Coastdown Cool Rate		15.0
Coastdown Heat Rate		

10. To print the display, from the File menu, select Print. At the Print dialog box, click OK.

Note:

The objects and properties cannot be edited or saved from the display. To edit objects or properties, you must display the appropriate editor from the Tracer Summit Setup menu.

11. When you are finished viewing the properties, from the File menu, select Close Graphic.



Viewing System Status

You can view Tracer Summit's system status to determine:

- The connection status of the PC workstation
- Whether the database of the PC workstation has been synchronized with (or is the same as) the databases of all BCUs connected to a site
- How many alarms have not yet been acknowledged for a site

To view system status:

- 1. Make sure Tracer Summit is displayed on the screen. If it is minimized, click the Tracer Summit button in the Windows task bar.
- 2. From the Windows task bar, double-click the Tracer Summit System Status icon (see Figure 11). The Tracer Summit System Status window displays (see Figure 12 on page 30).

Figure 11. Tracer Summit System Status Icon





Current	ystem Status		
Site: BASD202	0		
User: TRACER			
Sites:			
Site Name	Connection Status	Database Sync	UnAcknowledge
BASD2020	Not Connected	No	0

Figure 12. Tracer Summit System Status Window

The status fields include the following:

- Site Name: Lists defined sites with a connection status.
- Connection Status: Indicates the connection status of the PC workstation to the site. Table 2 on page 31 describes the connection status options.
- Database Sync: Indicates whether the database for the PC workstation has been synchronized with (or is the same as) the databases of all BCUs connected to the site.
- Unacknowledged Alarms: Lists how many alarms requiring acknowledgment have not yet been acknowledged in the event log. (For more information, refer to the *Tracer Summit Daily Operations* guide.)

Note:

The only sites that appear in the system status window are those sites that the workstation is communicating with or is attempting to communicate with.

IMPORTANT

Disconnecting without synchronizing the PC workstation and BCU databases may cause an incomplete database, resulting in improper system control.

Connection Status	Description
Not Connected	There is no connection or pending connection with a BCU.
ARCNET	The PC workstation has an active ARCNET connection to the site.
Ethernet	The PC workstation has an active Ethernet connection to the site.
BACnet/IP	The PC workstation has an active BACnet/IP connection to the site.
EIA-232	The PC workstation has an active EIA-232 connection to the site.

Table 2. System Connection Status

Utilities





Chapter 6 Configuring Tracer Summit BCU Sites

A site defines boundaries for communication and control within the Tracer Summit system. A site consists of the BCUs and PC workstations assigned to the site, the UCMs attached to the BCUs, and other equipment that communicates with the BCUs.

Tracer Summit supports multiple sites. If you have a single site on the system, it automatically becomes the default site and opens when you start Tracer Summit. If you have multiple sites, you can define a default site to open at start up.

The Site Configuration editor allows you to:

- Select units of measure (upon initial site configuration only)
- Create, edit, and delete BCUs, PC workstations, and non-Trane BACnet devices
- Select a BCU version for downloading (to support existing Tracer Summit installations)
- Create UCMs and assign them to BCUs
- Define billing periods
- Define security class names for the site
- Set up event routing
- Set up control priorities
- Set time and date options
- Synchronize time and date for all devices
- Configure communication settings to define PC workstation connections to BCU

Configuring Tracer Summit BCU Sites



Creating a Site

Tracer Summit's Site Creation/Connection Wizard allows you to create and configure a site entirely from your PC workstation. You can also upload. restore, or copy an existing site with a LAN (BACnet/IP, Ethernet, or ARCNET), modem, or direct connection.

As a part of the site creation process, the Site Creation Wizard automatically takes you to the Site Configuration editor, where you finish configuring your site.

This section covers:

- Creating a site
- Uploading a site
- Restoring a site
- Copying a site

Creating a New Site

1. From the Setup menu, select Site Configuration. The Select Site dialog box displays (see Figure 13).

Figure 13. Select Site Dialog Box

S	elect Site				×
	Name BASDAUTO T100		Type Tracer S Tracer 1	ummit BCU 00 Series	
	ОК	<u>N</u> ew	Cancel	<u>H</u> elp	



2. Click New. The Site Creation Wizard dialog box displays (see Figure 14).



Site Creation Wizard		×
Select a Site Tracer Summit BCU Tracer 100 Series Tracker Select an Action Create Upload	Site Name:	
< <u>B</u> ack	Next > Cancel	Help

- 3. Click Create.
- 4. Enter a name in the Site Name field. Make the name as informative as possible. Use a maximum of eight characters.

Note:

After you save this site configuration, the site name cannot be modified in the Site Configuration editor. Use the backup and restore functions, to restore the site under a new name (see Chapter 38, "Restoring into the Tracer Summit Workstation.").

5. Click Next to display the Site Connection Wizard dialog box (see Figure 15).

Figure 15. Site Connection Wizard Dialog Box

×
-



- 6. Click the type of connection for your site. Only one network connection type can be defined.
- 7. Click Next. Depending on the type of connection you selected, a configuration dialog box specific to that connection is displayed.

Site Connection via dedicated Ethernet or ARCNET

- 1. From the Site Connection Wizard, select Ethernet or ARCNET as the site connection type.
- 2. Click Next to display the appropriate Ethernet or ARCNET Configuration dialog box (see Figure 16).

Figure 16. Ethernet Configuration Dialog Box

Ethernet Configuratio	n
Site: BASD2022	
Select E	themet Card
Name	Description
0000	3Com Fast EtherLink XL 10/100Mb T
J⊻ Open On Startup	
	< Back Finish Cancel Help

- 3. Select the Ethernet or ARCNET card to be used for communicating with the site.
- 4. The Open On Startup check box is checked by default. Leave this box checked if you want the workstation to communicate to the site via Ethernet or ARCNET each time you start Tracer Summit.
- 5. Click Finish to display the Site Configuration editor.

When you create a new site you must designate units of measure for the site, and assign at least one BCU before you can save the new site (see "Creating, Editing, and Deleting Devices" on page 57 and "Creating, Editing, and Deleting PC Workstations" on page 66).

Note:

Tracer Summit menus are unavailable until you save the site or cancel the site.



Site Connection via BACnet/IP

- 1. From the Site Connection Wizard, select BACnet/IP as the site connection type.
- 2. Click Next to display the BACnet/IP Configuration dialog box (see Figure 17).

Figure 17. Site Connection Wizard Dialog Box

BACnet/IP Configuration
Site: BASD2022
O Use local connection
C Use BBMD
<back next=""> Cancel Help</back>

- 3. Click:
 - Use Local Connection if your workstation is on an IP subnet that has a BCU.
 - Use BBMD if your workstation is on a subnet that does not have a BCU.

Note:

This dialog box helps Tracer Summit determine how to connect to the site. It allows you to connect to a BCU on a local subnet, or connect to a remote part of the facility, or connect to another building. The building owner's information systems (IS) staff can tell you if the PC workstation and the BCU are on the same subnet.

BACnet broadcast management devices (BBMDs) are used to facilitate low level communications. On most sites the BCU serves as a BBMD. However, it is possible for other BACnet devices, such as, a BACnet IP router to fill this function.

- 4. Click Next:
 - If you selected the Use Local Connection option, the Network Adapter Selection dialog box displays (see Figure 18 on page 38 below).
 - If you selected the Use BBMD option, the BBMD Configuration dialog box displays (see Figure 19 on page 39).



Network Adapter Selection Dialog Box

The Select Network Adapter field displays the available network adapters on the workstation that are bound to the TCP/IP protocol (see Figure 18). Use one of these adapters to communicate with the site.



Network Adapter Selection		Þ
Char BASS ANS		
SILE: DASD_AMIS		
Select Network Adapter		
Description	IP Address	
3Com Fast EtherLink XL 10/100Mb TX	159.168.102.8	
•		F
UDP Port: 47808		
🔽 Open On Startup		
< <u>B</u> ack Finish	Cancel He	lp

- 1. Select the network adapter. Note that the IP address shown is the address of this Workstation adapter.
- 2. Type the UDP port number in the Port field. This will typically be 47808.
- 3. The Open On Startup check box is checked by default. Leave this box checked if you want the workstation to communicate to the site via BACnet/IP each time you start Tracer Summit.
- 4. Click Finish. The Site Configuration editor is displayed.

When you create a new site you must designate units of measure for the site, and assign at least one BCU before you can save the new site (see "Creating, Editing, and Deleting Devices" on page 57 and "Creating, Editing, and Deleting PC Workstations" on page 66).

Note:

Tracer Summit menus are unavailable until you save the site or cancel the site.



The BBMD Configuration Dialog Box

The BBMD IP address is used to connect to a site (see Figure 19).

Figure 19. BBMD Configuration Dialog Box

BBMD Configuration	×
C)	
Site: BASD2022	
BBMD IP Address:	192 . 168 . 8 . 45
UDP Port:	47808
🔽 Open On Startup	
	< Back Finish Cancel Help

- 1. Type the IP address of the BCU (or other BACnet device acting as a BBMD) in the BBMD Address field.
- 2. Type the UDP port number in the Port field. The other address is provided by the building owner's IS staff.
- 3. The Open On Startup check box is checked by default. Leave this box checked if you want the workstation to communicate to the site via BACnet/IP each time you start Tracer Summit.
- 4. Click Finish the Site Configuration editor is displayed.

When you create a new site you must designate units of measure for the site, and assign at least one BCU before you can save the new site (see "Creating, Editing, and Deleting Devices" on page 57 and "Creating, Editing, and Deleting PC Workstations" on page 66).

Note:

Tracer Summit menus are unavailable until you save the site or cancel the site.



Site Connection by Modem or Hardwired

1. From the Site Connection Wizard, select Modem or Hardwired as the site connection type. Figure 20 shows the Modem option button selected.



Site Connection Wizard 🛛 🗙
Site: APEX
C ARCNET
C BACnet/IP
C Ethernet
C Hardwired
C Modem
< <u>B</u> ack Finish Cancel Help

2. Click finish. The Site Configuration editor displays.

Uploading a Site via a Dedicated ARCNET or Ethernet Connection

1. From the Setup menu, select Site Configuration. The Select Site dialog box displays (see Figure 21).

Figure 21. Select Site Dialog Box

Select Site 🗙					
	Name BASDAUTO T100	Type Tracer Summit BCU Tracer 100 Series			
	OK <u>N</u> ew C	Cancel <u>H</u> elp			



2. Click New. The Site Creation Wizard dialog box displays (see Figure 22).

Figure 22. Site Creation Wizard Dialog Box

Site Creation Wizard		×
Select a Site Tracer Summit BCU Tracer 100 Series Tracker Select an Action Create Upload	Site Name:	
< <u>B</u> ack	Next > Cancel Help	

- 3. Click Upload.
- 4. Click Next to display the Site Connection Wizard dialog box (see Figure 23).

Figure 23.	Site	Connection	Wizard	Dialog	Вох
------------	------	------------	--------	--------	-----

ite Connection Wizard	×
Site:	
C ARCNET	
C BACnet/IP	
C Ethernet	
C Hardwired	
Modem	
	1
< <u>B</u> ack Finish Cancel Help	l

- 5. Click ARCNET or Ethernet.
- 6. Click Next to display the ARCNET or Ethernet Configuration dialog box (see Figure 24 on page 42).



ARCNET Configuration	on
Site:	
Select.	ARCNET Card
Name	Description
\Device\PCX202	PCX20 ARCNET Adapter
🔽 Open On Startup	
	< Back Finish Cancel Help

Figure 24. ARCNET Configuration Dialog Box

- 7. Select the ARCNET or Ethernet card to be used for communicating with the site.
- 8. The Open On Startup check box is checked by default. Leave this box checked if you want the workstation to communicate to the site via ARCNET or Ethernet each time you start Tracer Summit.
- 9. Click Finish.
- 10. Once connected, the system checks to see if your user name (the one you used to log onto the current site) is defined on the site to be uploaded:
 - If your user name is not defined on the site to be uploaded, follow steps 11–14.
 - If your user name is defined on the site to be uploaded, proceed to step 15.
- 11. If your user name is not defined on the site to be uploaded, the Logon to Upload Site dialog box displays (see Figure 25). You must log on so the system can verify you have the security access to upload the site.

Figure 25. Logon to Upload Site Dialog Box

Logon to Upl	oad Site	X
Site:	BASD	•
User Name:	I	
Password:		
OK	Cancel <u>H</u> elp	



- 12. In the User Name field, type your user name.
- 13. Press Tab to place the cursor in the Password field, then type your password.
- 14. Click OK.
- 15. The Confirm Upload Site dialog box displays (see Figure 26). Click Yes to continue the upload.

Figure 26. Confirm Upload Site Dialog Box

Confirm Upload Site 🛛 🔣				
⚠	Upload site BASD?			
(Y	es <u>N</u> o			

The Upload Status dialog box displays with the current status of the connection and the upload (see Figure 27).

Figure 27. Upload Status Dialog Box

Upload Status	×
Centrifugal Chiller (UCP2) 1	
	Cancel

When the upload is complete, you are returned to the Tracer Summit main window. The new site is now the active site.



Uploading a Site via a BACnet/IP Connection

1. From the Setup menu, select Site Configuration. The Select Site dialog box displays (see Figure 28).

Figure 28. Select Site Dialog Box

S	elect Site	×
	Name BASDAUTO T100	Type Tracer Summit BCU Tracer 100 Series
	1100	
	ОК	New Cancel Help

2. Click New. The Site Creation Wizard dialog box displays (see Figure 29).

Figure 29. Site Creation Wizard Dialog Box

Site Creation Wizard	×
Select a Site Tracer Summit BCU Tracer 100 Series Tracker Select an Action Create Upload	Site Name:
< <u>B</u> ack	Next > Cancel Help

- 3. Click Upload.
- 4. Click Next to display the Site Connection Wizard dialog box (see Figure 30 on page 45).



Figure 30. Site Connection wizard Dialog B	Dialog Box
--	-------------------

Site Connection \	∕izard			×
Site:				
C ARCN	ET			
C BAChe	et/IP			
C Ethern	net			
C Hardw	vired			
Mode	m			
	< <u>B</u> ack	Finish	Cancel	Help

- 5. Click BACnet/IP.
- 6. Click Next to display the BACnet/IP Configuration dialog box (see Figure 31).

BACnet/IP Configuration			
Site:			
C Use local connection			
Use BBMD			
< <u>B</u> ack	<u>N</u> ext >	Cancel	Help

- 7. Click:
 - Use Local Connection if your workstation is on an IP subnet that has a BCU.
 - Click Use BBMD if your workstation is on a subnet that does not have a BCU.



Note:

This dialog box helps Tracer Summit determine how to connect to the site. It allows you to connect to a BCU on a local subnet, or connect to a remote part of the facility, or connect to another building. The building owner's information systems (IS) staff can tell you if the PC workstation and the BCU are on the same subnet.

BACnet broadcast management devices (BBMDs) are used to facilitate low level communications. On most sites the BCU serves as a BBMD. However, it is possible for other BACnet devices, such as, a BACnet IP router to fill this function.

8. Click Next:

- If you selected the Use Local Connection option, the Network Adapter box displays (see Figure 32).
- If you selected the Use BBMD option, the BBMD Configuration dialog box displays (see Figure 35 on page 48).

Network Adapter Selection Dialog Box

The Network Adapter field displays the available network adapters on the workstation bound to the TCP/IP protocol (see Figure 32). Use one of these adapters to communicate with the site.

Figure 32. Network Adapter Selection Dialog Box

Network Adapter Selection	×
Site:	
Select Network Adapter	
Description	IP Address
	159.112.139.173
SMC EZ Card ISA 10 Adapter	192.168.9.58
UDP Port: 47808	
🔽 Open On Startup	
< <u>B</u> ack	Finish Cancel Help

- 1. Select the network adapter.
- 2. Type the UDP port number in the Port field. This will typically be 47808.



- 3. The Open on Startup check box is checked by default. Leave this box checked if you want the workstation to communicate to the site via BACnet/IP each time you start Tracer Summit.
- 4. Click Finish.

Note:

The system checks to see if your user name (the one you used to log onto the current site) is defined on the site you are trying to upload.

5. The Confirm Upload Site dialog box displays (see Figure 33). Click Yes to continue the upload.

Figure 33. Confirm Upload Site Dialog Box



The Upload Status dialog box displays with the current status of the connection and the upload (see Figure 34).

Figure 34. Upload Status Dialog Box

Upload Status	×
Centrifugal Chiller (UCP2) 1	
	[

When the upload is complete, you are returned to the Tracer Summit main window. The new site is now the active site.



The BBMD Configuration Dialog Box

The BBMD IP address is used to communicate with the site (see Figure 35).

Figure 35. BBMD Configuration Dialog Box

BBMD Configuration				
Site:				
BBMD IP Address:	159 .112	.138 .215]	
UDP Port:	47808			
🔽 Open On Startup	þ			
	< <u>B</u> ack	Finish	Cancel	Help

- 1. Type the IP address of the BCU (or other BACnet device acting as a BBMD) in the BBMD Address field.
- 2. Type the UDP port number in the Port field. The other address is provided by the building owner's IS staff.
- 3. The Open on Startup check box is checked by default. Leave this box checked if you want the workstation to communicate to the site via BACnet/IP each time you start Tracer Summit.
- 4. Click Finish. Tracer Summit begins to upload the site (refer to steps four and five of the IP Address Configuration Dialog Box section).


Uploading a Site via Modem/Direct Connect

1. From the Setup menu, select Site Configuration. The Select Site dialog box displays (see Figure 36).

Figure 36. Select Site Dialog Box

S	elect Site	×
	Name BASDAUTO T100	Type Tracer Summit BCU Tracer 100 Series
	OK <u>N</u> ew C	Cancel <u>H</u> elp

2. Click New. The Site Creation Wizard dialog box displays (see Figure 37).



Site Creation Wizard	2	<
Select a Site Tracer Summit BCU Tracer 100 Series Tracker Select an Action Create Upload	Site Name:	
< <u>B</u> ack.	Next > Cancel Help	

- 3. Click Upload.
- 4. Click Next to display the Site Connection Wizard dialog box (see Figure 38 on page 50).



Site Con	nection Wizard
Site:	
	C ARCNET
	C BACnet/IP
	C Ethernet
	C Hardwired
	Modem
	< <u>B</u> ack Finish Cancel Help

Figure 38. Site Connection Wizard Dialog Box

- 5. Click Modem, then click Finish:
 - For a new system with no sites configured, you will need to add a PC workstation modem to Tracer Summit. Proceed to step 6.
 - If your site already has a modem, proceed to step 8.
- 6. At the Modem Configuration dialog box, type the modem name in the Workstation Modem Name field (see Figure 39).
- 7. In the Connect By field, click down arrow to select the modem type. Selecting the modem type should fill in the rest of the information, except for the modem name.

Figure 39. Modem Configuration

Modem Configuration	X
Workstation Modern Name:	
Comm Port: 1 Comm Port Maximum Speed: 9600	
Connect by: Hardwired	
Configuration Strings	
Reset String:	
Initialization String 1:	
Initialization String 2:	
Attention String:	
Dialing String:	
Hang-up String:	
Dialing Prefix:	
Calling Card #:	
0%. Cancel Help	



8. Click OK. The Connection Manager dialog box displays (see Figure 40).



Connection Manager						
Connect to:	NewSite					
Connect Using:	Test Workstation Modem					
Phone Number:	Phone Book					
Dialing Prefix:	None					
Calling Card Used:	None					
Connection Statu	8					
No Connection	☐ Details					
	OK Cancel Help					

9. In the Connect Using field, select a modem or port to use.

Note:

If there is a modem that is being used for another site, click Current Connections. At the Current Connections dialog box, select the site currently using the modem/port and click Disconnect. When the site has disconnected, click OK to return to the Connection Manager.

- 10. In the Phone Number field, select the telephone number for the remote connection.
- 11. If there is no phone number, add one in the Phone Book. Click the Phone Book button to display the Phone Book dialog box (see Figure 41 on page 52).



Phone Book					×
Add Phone Number	Phone Number	Use Dialing Prefix	Use Calling Card #		
Remove Phone Number	555-5555				
	[OK	Canc	el Help	

Figure 41. Phone Book Dialog Box

12. Click the Add Phone Number button to display the Add Phone Numbers dialog box (see Figure 42).

Figure 42. Add Phone Numbers

Add Phone Numbers					
Phone Number:					
🔲 Use Dialing Prefix					
🖵 Use Calling Card #					
ОК	Cancel	Help			

- 13. Enter a phone number in the Phone Number field and select the Use Dialing Prefix or Use Calling Card # check box as necessary.
- 14. Click OK to close the Add Phone Numbers dialog box, then click OK to return to the Connection Manager dialog box.
- 15. In the Connection Manager dialog box, click OK. The system dials and connects to the site.

Note:

The system checks to see if your user name (the one you used to log onto the current site) is defined on the site you are trying to be upload.

- 16. The Confirm Upload Site dialog box displays (see Figure 43 on page 53).
- 17. Click Yes to continue the upload.



Figure 43. Confirm Upload Site Dialog Box



The Upload Status dialog box displays with the current status of the connection and the upload (see Figure 44).

Figure 44. Upload Status Dialog Box

Upload Status	×
Centrifugal Chiller (UCP2) 1	
	Cancel

When the upload is complete, you are returned to the Tracer Summit main window. The new site is now the active site.

Restoring a Site from the Site Creation Wizard

Select the Restore button when you want to restore a site, instead of creating or uploading one (see Figure 45). This option is only available when the Tracer Summit database has no sites in it.

• From the Site Creation Wizard, click Restore, then click Finish. The Restore Location dialog box displays. (For instructions on how to restore a site, see Chapter 38, "Restoring into the Tracer Summit Workstation.")

Site Creation Wizard		×
Select a Site Tracer Summit BCU Tracer 100 Series Tracker Select an Action Create C Upload Restore	Site Name:	
	Finish Cancel Help	

Figure 45. Site Creation Wizard Dialog Box



Copying a Site

Copy Site helps you create sites that are similar or identical to each other. If you have a large number of sites, Copy Site can eliminate much of the repetitive work that goes into configuring sites that have more similarities than differences.

Copy Site is available with all Version 13 packages (Tracer 100/Tracker Communication, Building Management, and Enterprise Management).

Copy Site reproduces objects from an original BCU site and transfers them to a new site of the same type. Copy Site functions like the Restore function (see "Restoring a Site and CPL Files" on page 643), except that with Copy Site you can copy BCU graphic objects and report objects to a new site.

Copy Site does not copy workstation or global objects from the original site. This means that the new site will have the same information as the original from which it was copied but not the following items:

- Workstation modem objects
- Message forwarding objects
- Global graphics
- Sample values in calculation objects (samples are cleared in the new objects)
- Sample values in trend objects (samples are cleared in the new objects)
- CPL text files
- Report text files (*.rpt files)
- User-defined standard live reports

Copying a Tracer Summit BCU Site

- 1. From the Tools menu, select Copy Site. The Copy Site dialog box appears (see Figure 46 on page 55).
- 2. Type the name of the new site in the Name of New Site field.

The new site name must be unique, one that does not exist in the database.

- 3. Select BCU from the Site Type to Copy list.
- 4. Click Site to Copy. The list displays the name of all the BCU sites in the database.
- 5. Select whether or not to copy graphics and report files:
 - If you want to copy graphics and reports from the original site, click OK. The default is to copy these objects, so Copy Graphics and Copy Reports are already selected.
 - If you do not want to copy graphics and reports, click to clear the Copy Graphics and Copy Reports check boxes and click OK.



Figure 46. Copy Site Dialog Box

Copy Site	×
Name of New Site:	
Site Type to Copy:	BCU
Site to Copy:	BASDAUTO
	🗹 Copy Graphics 🔽 Copy Reports
OK.	Cancel Help

Tracer Summit copies the information that you selected from the original site. The new BCU site node appears in the navigation tree.

Selecting a Site to Configure

If your Tracer Summit system has a single site, it is the default site and will open when you start Tracer Summit. If you have multiple sites, you can select the site to open at log on. When you select Site Configuration from the Setup menu, the current site is highlighted in the Select Site dialog box.

To select a site:

1. From the Setup menu, select Site Configuration. The Select Site dialog box displays (see Figure 47).

S	elect Site	×
	Name BASDAUTO T100	Type Tracer Summit BCU Tracer 100 Series
	OK	New Cancel Help

Figure 47. Select Site Dialog Box

- 2. Click the site you wish to edit.
- 3. Click OK to display the Site Configuration editor for the selected site (see "Configuring a Site" on page 56).



Configuring a Site

To configure a new site on your PC workstation or to modify parameters of an existing site, follow the steps in this section.

Note:

When you create a new site, the Site Configuration editor opens with the Units screen active. You can select units of measure only when you are creating a new site. Once the site is saved, the Units screen becomes status only.

Selecting Units of Measure

1. When creating a new site, the Units screen is automatically displayed after completing the Site Connection Wizard (see Figure 48).



Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications
	Setup optic Inch-P Interna Custor Custor	iound (I-P) ational System nize from I-P nize from SI					
I	Physical Qu	antity		Units			
	Temperature Gaseous Pre Fluid Pressu Gaseous Flo Fluid Flow Cooling Cap Enthalpy Temperature Thermal Rar Thermal Rar Mass	e essure re vacity e Delta mp Rate By Time mp Rate By Temp		Degrees Fahrenheit Inches of Water Pounds Force per Squ Cubic Feet per Minute Gallons per Minute Tons Refrigeration BTU per Pound Dry Ail Degrees Fahrenheit Minutes per Degree Fa Degrees Fahrenheit pe Pounds Mass	are Inch r shrenheit er Minute		

- 2. In the Setup Options field, select the units of measure for the site.
- 3. If you select Customize from I-P or Customize from SI, click the first item in the Physical Quantity list that you wish to customize. A choice of units for that item is displayed in the Units list.
- 4. Click the desired unit in the Units field.
- 5. Repeat steps 3 and 4 for each item in the Physical Quantity field you wish to customize.
- 6. Follow the instruction in the section "Creating, Editing, and Deleting Devices" to add a BCU and a PC workstation to the new site before you can save it.



Creating, Editing, and Deleting Devices

When creating a new site you must create at least one device before you can save the site. Once a device is created, you can edit or delete the device.

Creating a Device

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 49).

Figure 49. Site Configuration Editor Devices Screen

Setup	Devices	Event Classes	Event Receivers	Control Priorities	: Units	Date/Time	Communications
Devic	es		Workstations		Non-Trane	BACnet devic	ce
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing		AHU Mezzanine W Bill's workstation - 1 JIM W Joe's Workstation -	AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187		evice 11		
	Create D	evice	Create Work	station	Create No	n-Trane BACr	net device
	Edit De	vice	Edit Works	tation	Edit Non	Trane BACne	et device
	Delete I)evice	Delete Wor	kstation	Delete No	on-Trane BAC	inet device
UCMs UCM	in Selected I	Device	UCM Type	Link	Address	Neuron	ID 🔺
AMS Centr CUH CUH CUH CUH CUH FP V FP V FP V	Wireless Re ral Area LCP -1 Southwest -2 Southeast -3 Main Entra -3 Main Trair -5 Training E AV 1-01 Visit AV 1-02 Tan AV 1-03	ceiver : Entrance Entrance ance ance trance or Room g	Wireless Receiver Lighting Control Panel Terminal Unit Controll Terminal Unit Controll Space Comfort Control YariTrane UCM II/III/V VariTrane UCM II/II/I/V VariTrane UCM II/II/I/V		2 38 39 36 37 85 86 87	00041180	4500
	Create I <u>A</u> ssign Ne	JC <u>M</u> euron ID					
	<u>D</u> elete	UCM					

2. Click the Create Device button to display the Create New Device dialog box (see Figure 50 on page 58).



Create New Devi	ce		X
Device Name: Device ID: Network Number: Panel Type:	BMTX 18 1 Interference of BCU (BMTX) Interferenc	-	
Communication Link 1: Isol	Links ated Comm 3	Add Edit Delete	Operator Display Add Edit
Link 3: Nor	n-Isolated Comm 4		BCU Event Log Add Edit
Security Classes.	. ОК	Cancel Help	

Figure 50. Create New Device Dialog Box

- 3. Type a name in the Device Name field. Make the name as informative as possible. Use a maximum of 32 characters.
- 4. Select a device number in the Device ID field.

AIMPORTANT

Once you save the site configuration the Device ID field is fixed and you cannot change it. Additionally, once you save the site configuration you can not delete the Device in site configuration. Use the Delete Object function from the Tools menu.

Note:

Tracer Summit provides a default device ID. The first BCU created is ID 1. Each additional BCU is given the next available ID. To change the suggested ID, type a new ID number in the field.

5. Leave the network number at the default value of 1.

Note:

The network number for the device is edited only when there are multiple networks on a site, typically on a BACnet job with non-Trane equipment. Contact Trane GCC Product Support for details.



- 6. From the Panel Type list box, select a device type: Enhanced BCU (BMTX), Modular BCU (BMTW) or BCU (BMTS).
 - For the BMTW, select capacity cards; 1 for standard and 2 for high.
 - For the BMTX the communication links are fixed, for example, the comm5 link can only be set up as comm5 or Undefined (not used), it can not be changed to comm4 or comm3 (see Figure 51).
- 7. For the standard capacity BMTW, if you select Comm5 as a communication link, two Comm5 mode options become available: Install a new link and Add to or discover existing link.
 - Select Install new link to enable the auto-install mode to commission Comm5 devices. In this mode, the BCU discovers Comm5 devices. Select this option if you know that a service tool (Rover, for example) has not been used to bind devices (custom bindings) together. This option is faster than the Add to or discover existing link option.
 - Select Add to or discover existing link for existing Comm5 or Lon-Talk networks. Initial installation takes longer with this option. However, all existing (custom) bindings and link information are preserved.

Figure 51. BMTX Communication Links

Panel Type:	Enhanced BCU (BMTX)		•					
Communication	Communication Links							
Link 1: Un	defined	•						
Link 2: No	n-Isolated Comm 4	•						
Link 3: No	n-Isolated Comm 4	•						
Link 4: Cor	nm 5	•						

IMPORTANT

Selecting the Install new link option for a network that has existing device bindings will result in removing those device bindings.

Adding device options: Modem, I/O Module, Operator Display, BCU Event log



Adding a BCU Modem

1. If the device has a modem, click Add button in the Modem box to display the Create New Modem dialog box (see Figure 52 on page 60). For the BMTW or BMTS only, if the BCU will use an EIA-232 BACnet connection, you must add a BCU modem, which will later be configured as hardwired. Note that for a BMTW or BMTS, the BCU may not have both a modem and an EIA-232 BACnet connection.

Figure 52. Create New Modem Dialog Box

Create New Modem			×
Modem Name:	[
Security Classes	OK	Cancel	Help

- 2. Type a name in the Modem Name field. Make the name as informative as possible. Use a maximum of 32 characters.
- 3. To change the default security access for the modem, click Security Classes (see "Setting Security Access for Objects in a Site" on page 90).
- 4. Click OK to close the Modem dialog box.

Adding a BCU I/O Module object

• Refer to Chapter 18, "BCU Inputs and Outputs."

Adding an Operator Display object

• Refer to Chapter 34, "The BCU Operator Display."

Adding a BCU Event Log object

The BCU Event Log stores up to 5,000 events in the BCU. Add a BCU event log object to:

- Dial up a BCU remotely to view alarms and events (refer to Tracer Summit *Daily Operations* guide, "Viewing the BCU Event Log")
- View alarms and events at the BCU operator display.

Note:

To view alarms and events at the operator display, you must save the BCU event log object to the same device as the operator display object.

To Add a BCU Event Log

1. Click the Add button in the BCU Event Log box. The BCU Event Log dialog box displays (see Figure 53 on page 61).



Figure 53. BCU Event Log Dialog Box

Create New BCU Event	Log	×
BCU Event Log Name:		
Security Classes	OK Cancel Help	

- 2. Type a name in the event log name field. Make the name as informative as possible. Use a maximum of 32 characters.
- 3. To change the default security access for the BCU Event Log, click Security Classes (see "Setting Security Access for Objects in a Site" on page 90).
- 4. Click OK to close the BCU Event Log dialog box and to return to the Create Devices dialog box.

Note:

The BCU Event Log object is not created until you click Save on the Devices screen.

5. From the Events Routing tab, set up event receiver routing for the newly created event log object. Alarms in the event log object show up in the newly created operator display (see "Setting Up Event Classes" on page 81).

Editing a BCU

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 54 on page 62).



Setup De	vices	Event Classes	Event Receive	rs	Control Prioritie	2	Units	Date/Time	Com	municat	ions]
Devices			Workstations			Nor	n-Trane	BACnet devi	ce		
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing		AHU Mezzani Bill's workstati JIM W Joe's Worksta	AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187		BA	Cnet D	evice 11				
1	Create D	evice	Create	Works	station	Cre	ate No	n-Trane BACr	net dev	/ice	
	Edit De	vice	Edit \	Vorkst	ation	E	dit Non	Trane BACne	et devi	ce	
	Delete D)evice	Delete	e Work	station	D	elete Ni	on-Trane BAC	inet de	vice	
UCMs in S UCM Na	elected [me	Device	UCM Type		Link	Add	ress	Neuron	ID		
AMS Win	eless Re	ceiver	Wireless Receive	r	1	2	2				
Central A	rea LCP	F ubanaa	Lighting Control P	anel	1	2					
CUH-1 S	outheast	Entrance	Terminal Unit Con	troll	1	3	9				
CUH-3 M	ain Entra	ince	Terminal Unit Con	troll	i	3	6				
CUH-4 M	ain Train	ing Entrance	Space Comfort Co	ontro	2			00041180	4500		
CUH-5 Tr	aining Ei	ntrance	Terminal Unit Con	troll	1	3	2				
FP VAV 1	-01 Visib	or Room	VariTrane UCM II		1	8	5				
FP VAV 1	-02 i ang -03	g	VariTrane UCM II VariTrane UCM II	70171V 2017IV	1	8	ь 7			_	
	Create l	JC <u>M</u>				Ū					
A	ssign Ne	euron ID									
	<u>D</u> elete	UCM									

Figure 54. Site Configuration Editor Devices Screen

- 2. Click the name of the device you wish to edit in the Devices list.
- 3. Click Edit Device to display the Edit Device dialog box (see Figure 55 on page 63).



Edit Device			×
Device Name:	bcu device1		
Device ID:	1 💌		
Network Number:	: 1		
Panel Type:	Modular BCU (BMTW)	Capacity Cards: 1	
Communication	Links	Modem	Operator Display
Link 1: No	n-Isolated Comm 4	Add	Add
		Edit	Edit
Link 2: Iso	lated Comm 3	Delete	
Link 3: Cor	mm 5	BCU I/O Module	BCU Event Log
Link 4: III.	4-6	Add	Add
		E dit	Edit
- Comm5 Mode -			
Install a	new link		
C Add to d	or discover existing link		
Security Classes.	OK	Cancel Help	

Figure 55. Edit Device Dialog Box

4. Modify the Device name, the network number, or the communication links, as desired. The Device ID cannot be changed at this point (after the device configuration has been saved).

Note:

Once you add a UCM on a selected communication link on the BMTW, the link designation cannot be changed: You cannot modify the link when it is in use. To change the link type, you must first delete all UCMs on the link. On the BMTX BCU each of the links is predefined and can't be changed except to set it "Undefined" (not used).

- 5. If you select Comm5 as a communication link, two Comm5 mode options become available (standard capacity BMTW only):
- Select Add to or discover existing link to have the BCU discover all Comm5 devices on the link, along with their custom bindings the next time RAM is cleared in the BCU.

Note:

Select this option to preserve any custom bindings.





• Select Install a new link to have the BCU discover all Comm5 devices on the link but to ignore their custom bindings the next time RAM is cleared in the BCU.

Note:

• Select this option if you know that there are no custom bindings on the link, or if you wish to remove all of the custom bindings on the link.

IMPORTANT

Selecting the Install new link option for a network that has existing device bindings (custom bindings) will result in removing those device bindings.

- 6. In the Modem group, click the Add button to display the Create New Modem dialog box (see Figure 56).
- 7. If a modem was previously added to the device, the Add button becomes unavailable, and the Edit button is now available. Click the Edit button to display the Edit Modem dialog box. (See Figure 56.)

Figure 56. Create New Modem and Edit Modem Dialog Boxes

Create New Modem			×
Modem Name:			_
Security Classes	ОК	Cancel	Help
Edit Modem			X
Modem Name:	AdministrationModem		_
Security Classes	ОК	Cancel	Help

- 8. To modify the modem name, type a new name in the Modem Name field.
- 9. Click OK to display the Edit Device dialog box.
- 10. To delete the modem, click Delete.
- 11. Add or Edit the BCU I/O Module, the Operator Display or the BCU Event Log by the same procedure described above for the Modem.
- 12. To modify the security classes for the Device, click Security Classes (see "Changing Security Access for Objects in a Site" on page 17).
- 13. Click OK to close the Edit Device dialog box and display the Devices screen.



Deleting a Device

Note:

If the device has been saved in site configuration, you cannot delete the device from the Site Configuration editor (the Delete Device button is unavailable). Instead, use the Delete Object utility from the Tools menu to delete a Device (see Chapter 39, "Deleting Objects and Sites.").

To delete a Device during Site Configuration:

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 57).

Devices Workstations Non-Trane BACnet device BCU 2 - Engineering BCU 3 - Manufacturing AHU Mezzanine Workstation - 183 Joe's Workstation - 187 BACnet Device 11 Create Device Create Workstation - 187 Create Non-Trane BACnet device Edit Device Edit Workstation Edit Non-Trane BACnet device Delete Device Delete Workstation Edit Non-Trane BACnet device Delete Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device UCM Type Link Address CuTents in Selected Device UCM Type Link Address UCMs in Selected Device UCM Type Link Address UCH-1 Southwest Entrance Terminal Unit Controll 1 38 CUH-2 Southeast Entrance Terminal Unit Controll 1 39 CUH-3 Main Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 FP VAV 1-03 VariTr	Setup Devices Even	nt Classes	Event Receivers	Control Prioriti	es	Units	Date/Time	Communications	
BCU 1 - Training Lobby AHU Mezzanine Workstation - 1 BACnet Device 11 BCU 2 - Engineering Bill's workstation - 183 Image: State	Devices		Workstations			n-Trane	BACnet devic	e	
Create Device Create Workstation Create Non-Trane BACnet device Edit Device Edit Workstation Edit Non-Trane BACnet device Delete Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device UCM Type Link Address Neuron ID AMS Wireless Receiver Wireless Receiver 1 2 Image: Central Area LCP <	BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing	J	AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187			Cnet De	evice 11		
Edit Device Edit Workstation Edit Non-Trane BACnet device Delete Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device UCM Type Link Address Neuron ID AMS Wireless Receiver Wireless Receiver 1 2 Image: Central Area LCP Lighting Control Panel CUH-1 Southwest Entrance Terminal Unit Controll 1 38 Image: CuH-2 Southeast Entrance Terminal Unit Controll 1 39 CUH-3 Main Entrance Terminal Unit Controll 1 36 Image: CuH-4 Main Training Entrance Spee Comfort Control 2 000411804500 CUH-5 Training Entrance Terminal Unit Controll 1 37 Image: CuH-4 Main Training Entrance Terminal Unit Controll 1 37 Image: CuH-4 Main Training Entrance VariTrane UCM II/III/IV 1 85 Image: CuH-4 Main Training Entrance VariTrane UCM II/III/IV 1 86 Image: CuH-4 Main Training Entrance Image: CuH-4 Main Training Entrance VariTrane UCM II/III/IV 1 86 Image: CuH-4 Main Training Entrance Image: CuH-4 Main Train	Create Device	э	Create Work	station	Cre	ate Nor	-Trane BACn	et device	
Delete Device Delete Workstation Delete Non-Trane BACnet device UCMs in Selected Device Inik Address Neuron ID AMS Wireless Receiver Wireless Receiver 1 2 Central Area LCP Lighting Control Panel Cull+1 Southwest Entrance Terminal Unit Controll 1 38 CUH-1 Southwest Entrance Terminal Unit Controll 1 39 Cull+3 Main Entrance Terminal Unit Controll 1 36 CUH-3 Main Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/V 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/V 1 86 ▼ FP VAV 1-03 VariTrane UCM II/III/V 1 87 ▼	Edit Device.		Edit Works	ation	E	dit Non-	Trane BACne	t device	
UCM sin Selected Device UCM Name UCM Type Link Address Neuron ID AMS Wireless Receiver 1 2 Image: Central Area LCP Lighting Control Panel CUH-1 Southwest Entrance Terminal Unit Controll 1 38 CUH-2 Southeast Entrance Terminal Unit Controll 1 39 CUH-3 Main Training Entrance Terminal Unit Controll 1 36 CUH-4 Main Training Entrance Terminal Unit Controll 1 37 CUH-4 Main Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-03 VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM Assign Neuron ID Deleter UCM 0004	Delete Devic	e	Delete Worl	kstation	De	elete No	n-Trane BACi	net device	
AMS Wireless Receiver Wireless Receiver 1 2 Central Area LCP Lighting Control Panel CUH-1 Southwest Entrance Terminal Unit Controll 1 38 CUH-2 Southeast Entrance Terminal Unit Controll 1 36 CUH-3 Main Entrance Terminal Unit Controll 1 36 CUH-4 Main Training Entrance Space Comfort Contro 2 000411804500 CUH-5 Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM	UCMs in Selected Devic	ce	СМ Туре	Link	Addr	ess	Neuron I	D	
Central Area LCP Lighting Control Panel CUH-1 Southwest Entrance Terminal Unit Controll 1 38 CUH-2 Southeast Entrance Terminal Unit Controll 1 39 CUH-3 Main Entrance Terminal Unit Controll 1 36 CUH-4 Main Training Entrance Space Comfort Controll 1 37 CUH-5 Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 87 Create UCM Exsign Neuron ID 27 ▼	AMS Wireless Receive	er Wi	ireless Receiver	1	2				
CUH-1 Southwest Entrance Terminal Unit Controll 1 38 CUH-2 Southeast Entrance Terminal Unit Controll 1 39 CUH-3 Main Entrance Terminal Unit Controll 1 36 CUH-4 Main Training Entrance Space Confort Controll 1 36 CUH-4 Main Training Entrance Space Confort Controll 2 000411804500 CUH-5 Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM 4 87 • Delete UCM 0 0 0 •	Central Area LCP	Lig	hting Control Panel					_	
CUH-2 Southeast Entrance Terminal Unit Controll 1 39 CUH-3 Main Entrance Terminal Unit Controll 1 36 CUH-4 Main Training Entrance Space Confort Control 2 000411804500 CUH-5 Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM 4 87 Image: Control ID Delete UCM Image: Control ID 1mit Control ID 1mit Control ID	CUH-1 Southwest Entr	ance Te	rminal Unit Controll	1	38	3			
CUH-3 Main Entrance Terminal Unit Controll 1 36 CUH-4 Main Training Entrance Space Comfort Controll 2 000411804500 CUH-5 Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM Assign Neuron ID Delete UCM	CUH-2 Southeast Entr-	ance Te	rminal Unit Controll	1	39	9			
CUH-4 Main Training Entrance Space Comfort Controll 2 000411804500 CUH-5 Training Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM	CUH-3 Main Entrance	Te	rminal Unit Controll	1	36	6			
CUP-S Iraning Entrance Terminal Unit Controll 1 37 FP VAV 1-01 Visitor Room VariTrane UCM II/III/IV 1 85 FP VAV 1-02 Tang VariTrane UCM II/III/IV 1 86 FP VAV 1-03 VariTrane UCM II/III/IV 1 87 Create UCM	CUH-4 Main Training E	intrance Sp	ace Comfort Contro	2		-	000411804	1500	
FP VAV 1-02 Tang VanTrane UCM II/III/V 1 85 FP VAV 1-02 Tang VanTrane UCM II/III/V 1 86 FP VAV 1-02 Tang VanTrane UCM II/III/V 1 86 FP VAV 1-03 VarTrane UCM II/III/V 1 87 Create UCM	CUH-5 Training Entran	ice le	rminal Unit Controll	1	37	-			
FP VAV 1-03 VanTrane UCM II/III/IV 1 87 Create UCM	EP VAV 1-01 Visitor Ho	om va Va	ritrane UCM 11/11/1V ritrana UCM 11/11/1V	1	00	2			
Create UCM Assign Neuron ID Delete UCM	FP VAV 1-02 mang	Va	riTrane UCM_IVIIVIV	1	87	7		-	
Assign Neuron ID Delete UCM	Create UCM.			· ·				_	
Delete UCM	Assign Neuron	n ID							
	Delete UCM	1							

Figure 57. Site Configuration Editor Devices Screen

- 2. Click the name of the device in the Devices list that you wish to delete.
- 3. If the Device has not yet been saved and no UCMs have been created, the Delete button will be highlighted, Click Delete Device.

Note:

Once the device has been saved it can only be deleted using the Delete Object function from the Tools menu.



Creating, Editing, and Deleting PC Workstations

Creating a PC Workstation

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 58).

Figure 58. Site Configuration Editor Devices Screen

Setup	Devices	Event Classes	Event Receivers	Control Prioriti	ies Units	Date/Time	Communications
Device	es		Workstations		Non-Trane	BACnet devi	ce
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing		AHU Mezzanine W Bill's workstation - JIM W Joe's Workstation	/orkstation - 1 183 - 187	▲ BACnet D	evice 11		
	Create D	evice	Create Work	kstation	Create No	n-Trane BACr	net device
	Edit De	vice	Edit Work:	station	Edit Non	-Trane BACne	et device
	Delete D)evice	Delete Wo	rkstation	Delete N	on-Trane BAC	Inet device
UCMs UCM	in Selected [Name	Device	UCM Type	Link	Address	Neuron	
AMS	Wireless Re	ceiver	Wireless Receiver	1	2		<u> </u>
Centr	al Area LCP 1 Southwood	Entranco	Lighting Control Panel.	. 1	20		
CUH-	-1 Southeast -2 Southeast	Entrance	Terminal Unit Controll	1	39		
CUH-	3 Main Entra	ance	Terminal Unit Controll	1	36		
CUH-	4 Main Train	ing Entrance	Space Comfort Contro	2		00041180)4500
CUH-	5 Training Er	ntrance	Terminal Unit Controll	1	37		
FP VA	AV 1-01 Visib	or Room	VariTrane UCM II/III/I	V 1	85		
EP VA	AV 1-02 Lan <u>i</u> AV 1.02	g	VariTrane UCM_II/II/I VariTrane UCM_II/II/I	V 1 J 1	86 97		-
	Create l	JC <u>M</u>		* 1	or		
	<u>A</u> ssign Ne	euron ID					
	<u>D</u> elete	UCM					

2. Click Create Workstation to display the Create New Workstation dialog box (see Figure 59).

Figure 59.	Create New	Workstation	Dialog	Box
------------	-------------------	-------------	--------	-----

Create New Workstation		×
Workstation Name: Workstation Device ID:	80 🔽	
Security Classes	OK Cancel Help	

3. Type a name in the Workstation Name field.



4. Select a device number in the Workstation Device ID field. Once you save the site configuration, the Workstation Device ID field becomes status only and you cannot change it.

Note:

Tracer Summit provides a default Workstation Device ID based on the number assigned during the software installation. Generally, the first workstation created is ID 80. Each additional workstation number is increased in increments of one. To change the default ID, enter a new ID number in the field.

Typical workstation addressing is as follows:

- 80 100 for on-site workstations
- 101 120 for remote workstations
- 121 140 Trane-reserved addressing
- 5. To change the default security classes settings for the workstation, click Security Classes (see "Setting Security Access for Objects in a Site" on page 90).
- 6. Click OK to close the Create New Workstation dialog box and display the Devices screen. The name of the workstation you just created appears in the Workstations list.

Editing a PC Workstation

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 60).

Figure 60.	Site Configuration	Editor Devices Screen
------------	--------------------	------------------------------

Setup Devices Event Classe	s Event Receivers	Control Priorities	Units	Date/Time	Communications
Devices	Workstations		Non-Trane	BACnet devic	e
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing	AHU Mezzanine Wo Bill's workstation - 18 JIM W Joe's Workstation - 1	orkstation - 1 🔺 33 187 💌	BACnet Device 11		
Create Device	Create Works	station	Create No	n-Trane BACn	et device
Edit Device	Edit Workst	ation	Edit Non-	Trane BACne	t device
Delete Device	Delete Work	station	Delete No	on-Trane BAC	net device
UCMs in Selected Device UCM Name	ИСМ Туре	Link	Address	Neuron	D 🔺
AMS Wireless Receiver	Wireless Receiver	1	2		
CUH-1 Southwest Entrance	Lighting Control Panel Terminal Unit Control	1	38		
CUH-2 Southeast Entrance	Terminal Unit Controll	i	39		
CUH-3 Main Entrance	Terminal Unit Controll	1	36		
CUH-4 Main Training Entrance	Space Comfort Contro	2	07	00041180	4500
EP VAV 1-01 Visitor Boom	VariTrana Unit Controll	1	37 85		
FP VAV 1-02 Tang	VariTrane UCM 11/11/1V	1	86		
FP VAV 1-03	VariTrane UCM_II/III/IV	1	87		•
Create UC <u>M</u>					
Assign Neuron ID					
<u>D</u> elete UCM					





- 2. Click the name of the workstation you wish to edit in the Workstations list.
- 3. Click Edit Workstation to display the Edit Workstation dialog box (see Figure 61).

Figure 61. Edit Workstation Dialog Box

Edit Workstation		×
Workstation Name:	Office PC	
Workstation Device ID:	101 💌	
Security Classes	OK Cancel Help	

- 4. Modify the workstation name, if desired.
- 5. To modify the security classes, click Security Classes (see "Setting Security Access for Objects in a Site" on page 90).
- 6. Click OK to close the Edit Workstation dialog box and display the Devices screen.

Deleting a PC Workstation

Note:

If the workstation has been saved in site configuration, you cannot delete the workstation from the Site Configuration editor (the Delete Workstation button is unavailable). Instead, use the Delete Object utility from the Tools menu to delete a Device (see Chapter 39, "Deleting Objects and Sites.").

To Delete a PC Workstation during Site Configuration:

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 62 on page 69).





	/								
Setup	Devices	Event Classes	Event Receivers	Control Prioritie	⊧s Únits	Date/Time	Communicat	ions 🛛	
Devices			Workstations		Non-Trane	BACnet devic	e		
BCU : BCU : BCU :	1 - Training L 2 - Engineeri 3 - Manufact	Lobby ng turing	AHU Mezzanine Wo Bill's workstation - 18 JIM W Joe's Workstation - 1	orkstation - 1 33 187	BACnet D	BACnet Device 11			
	Create D	evice	Create Works	station	Create No	n-Trane BACn	et device		
	Edit De	vice	Edit Workst	ation	Edit Non	-Trane BACnel	device		
	Delete I	Device	Delete Work	station	Delete N	on-Trane BACr	net device		
UCMs UCM	in Selected Name	Device	UCM Type	Link	Address	Neuron I	D		
AMS	Wireless Re	ceiver	Wireless Receiver	1	2				
Centr	al Area LCP 1 Southwoo	+ Entranco	Lighting Control Panel	1	20				
син.	2 Southeast	Entrance	Terminal Unit Controll	1	30				
CUH	3 Main Entr	ance	Terminal Unit Controll	1	36				
CUH	4 Main Trair	ning Entrance	Space Comfort Contro	2		000411804	1500		
CUH	5 Training E	ntrance	Terminal Unit Controll	1	37				
FP V/	AV 1-01 Visit	or Room	VariTrane UCM_II/III/IV	1	85				
FP V/	AV 1-02 T an	g	VariTrane UCM_II/III/IV	1	86				
FP V	AV 1-03		VariTrane UCM_II/III/IV	1	87		_		
	Create	UC <u>M</u>							
	<u>A</u> ssign N	euron ID							
	Delete	UCM							

Figure 62. Site Configuration Editor Devices Screen

- 2. Click the name of the workstation in the Workstations list that you want to delete.
- 3. Click the Delete Workstation button.

Creating, Editing, and Deleting Non-Trane BACnet Devices

Tracer Summit has the ability to communicate with non-Trane devices using standard BACnet protocols. When the non-Trane device is operating in a client application (providing data to Tracer Summit), you must create the device in the Site Configuration editor (see Chapter 37, "Using BACnet for Non-Trane Devices.").



Creating a Non-Trane BACnet Device

1. From the Site Configuration editor, click the Devices tab to display the Devices screen (see Figure 63).

Figure 63. Site Configuration Editor Devices Screen

Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	
Devices			Workstations	N	Non-Trane	BACnet devid	;e	
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing			AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187		BACnet Device 11			
Create Device			Create Work	station	Create Non-Trane BACnet device			
	Edit De	vice	Edit Works	tation	Edit Non-Trane BACnet device			
	Delete [Device	Delete Wor	kstation	Delete Non-Trane BACnet device			

2. Click Create Non-Trane BACnet Device to display the Create New Non-Trane BACnet Device dialog box (see Figure 64).

Create New Non-Trane BACnet Device	X
Device Name:	Object Types: All Types
Device ID: 0	Scan this Device for Available Objects
Available Objects	Selected Objects
Object Name Type Instance	Add >> Add All >> <
Manually Add New Objects	
Instance: 0	

Figure 64. Create New Non-Trane BACnet Device Dialog Box

3. Type the name and the device ID for the BACnet device.

Note:

The device ID is provided by the device manufacturer. Each device on a network must have a unique device ID. Contact the manufacturer for instructions, if necessary.



- 4. Select the object type from the Object Types field. The default selection is All Types.
- 5. Click the Scan button to display a list of all the available objects in the non-Trane device.
- 6. From the Available Objects list, select the objects that you want to view. Then, click the Add button to add the items to the Selected Objects list.
- 7. Click Okay to save the changes and return to the Devices tab.
- 8. Click the Communications tab and check the Disable Automatic Updates box (see Figure 65).

Figure 65. Disable Automatic Update

Non-Trane Devices	

Editing a Non-Trane BACnet Device

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 66).

Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communica	dions]
Devices			Workstations		Non-Trane	BACnet devi	ice	
BCU : BCU : BCU :	BCU 1 - Training Lobby AHU Mezzanine Workstation - 1 BCU 2 - Engineering Bill's workstation - 183 BCU 3 - Manufacturing JIM W Joe's Workstation - 187		/orkstation - 1 🔺 83 - 187 🛛 💌	BACnet Device 11				
Create Device		Create Workstation		Create Non-Trane BACnet device		net device		
	Edit De	evice	Edit Workstation		Edit Non-Trane BACnet device		et device	
	Delete	Device	Delete Wor	kstation	Delete No	on-Trane BA(Cnet device	

Figure 66. Site Configuration Editor Devices Screen

- 2. Click the name of the non-Trane BACnet device you wish to edit in the Non-Trane BACnet Devices box.
- 3. Click Edit Non-Trane BACnet Device to display the Edit Non-Trane BACnet Device dialog box (see Figure 67 on page 72).



Edit Non-Trane BACnet Device	×
Device Name: Bacnet device	Object Types: All Types
Device ID: 0	Scan this Device for Available Objects Scan
Available Objects	- Selected Objects
Object Name Type Instance	Add >> Cobject Name Type Instance Add All >> Add All >> <<
Manually Add New Objects	
I type: Analog Input Ac	Id UK Lancel Help
Indine.	

Figure 67. Edit Non-Trane BACnet Device Dialog Box

- 4. Modify the name and object type. Or, manually add new objects, if desired.
- 5. Click OK to close the Edit Non-Trane BACnet Device dialog box and display the Devices screen.

Deleting a Non-Trane BACnet Device

Note:

If the non-Trane BACnet device has been saved in site configuration, you cannot delete the device from the Site Configuration editor (the Delete Non-Trane BACnet Device button is unavailable). Instead, use the Delete Object utility from the Tools menu to delete the device (see Chapter 39, "Deleting Objects and Sites.").



To delete a non-Trane BACnet device during Site Configuration:

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 68).

Figure 68. Site Configuration Editor Devices Screen

Setup Devices Event Classes	s Event Receivers	Control Priorities	Units	Date/Time	Communications
Devices	Workstations		Non-Trane	BACnet devic	e
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing	AHU Mezzanine Wo Bill's workstation - 18 JIM W Joe's Workstation - 1	AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187			
Create Device	Create Works	tation	Create Nor	n-Trane BACn	et device
Edit Device	Edit Worksta	ation	Edit Non-	Trane BACne	t device
Delete Device	Delete Work	station	Delete No	on-Trane BAC	net device
UCMs in Selected Device	ИСМ Туре	Link	Address_	Neuron	ID 🔺
AMS Wireless Receiver	Wireless Receiver	1	2		
CUH-1 Southwest Entrance CUH-1 Southwest Entrance CUH-2 Southeast Entrance CUH-3 Main Entrance	Terminal Unit Control Panel Terminal Unit Controll Terminal Unit Controll Terminal Unit Controll	1 1 1	38 39 36		
CUH-4 Main Training Entrance	Space Comfort Contro	2		00041180	4500
FP VAV 1-01 Visitor Room	VariTrane UCM_II/III/IV	1	37 85		
FP VAV 1-02 Tang FP VAV 1-03	VariTrane UCM 11/111/1V VariTrane UCM 11/111/1V	1 1	86 87		•
Create UC <u>M</u>					
Assign Neuron ID					
<u>D</u> elete UCM					

- 2. Click the name of the non-Trane BACnet device in the Non-Trane BACnet Devices list that you wish to delete.
- 3. Click the Delete Non-Trane BACnet Device button.



Creating and Deleting UCMs

After you create a device, create the UCMs you wish to assign to the device. You can create multiple UCMs of a particular type simultaneously. To modify a UCM after you create it, use the UCM editor to change the settings.

Note:

The UCMs in Selected Device list can be sorted alphabetically by each column. To sort the list, click the column header.

Creating UCMs

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 69).

Setup	Devices	Event Classes	Event Receivers	Control Priorities	s Únits	Date/Time	Commun	ications		
Device	es		Workstations		Non-Trane	BACnet devi	ce			
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing			AHU Mezzanine W Bill's workstation - 1 JIM W Joe's Workstation -	AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187			BACnet Device 11			
	Create D	evice	Create Work	station	Create No	n-Trane BACr	net device			
	Edit De	vice	Edit Works	tation	Edit Non-	Trane BACne	et device			
	Delete [)evice	Delete Wor	kstation	Delete No	on-Trane BAC	Cnet devic	e		
UCMS UCM	In Selected Name	Jevice	ИСМ Туре	Link	Address	Neuron	ID .	-		
AMS	Wireless Re	ceiver	Wireless Receiver	1	2					
Central Area LCP Lig CUH-1 Southwest Entrance Ter		Lighting Control Panel Terminal Unit Controll	1	38						
CUH-2 Southeast Entrance Te		Terminal Unit Controll	1	39						
CUH-3 Main Entrance Te		Terminal Unit Controll	1	36	00044400	4500				
CUH-4 Main Training Entrance Sp		Space Comfort Control.	. 2	27	00041180	14500				
FP V	FP VAV 1-01 Visitor Boom VariTrane LIC		VariTrane LICM_II/II/I	/ 1	85					
FP V	PVAV 1-02 Tang VariTrane UCM II/III/V 1			/ 1	86					
FP V/	AV 1-03	-	VariTrane LICM_IVIIVI	/ 1	87			-		
			Valittane ocimi n/m/n	r 1	01			<u> </u>		

Figure 69. Site Configuration Editor Devices Screen

- 2. Click the name of the device in the Devices list to which you wish to assign UCMs.
- 3. Click Create UCM to display the Create UCMs dialog box for the selected device (see Figure 70 on page 75).

Note:

Assign Neuron ID

Tracer Summit communication links and devices have a limit to the number of UCMs they can support. Tracer Summit checks the number of UCMs per link and per device and allows you to enter only the appropriate number of UCMs.



reate UCMs	×
BCU: BMTX1 BCU Link C Link 1 Isolated Comm 3	UCM Type: Commercial Self Contained (CSC)
C Link 2 Non-Isolated Comm 4	
UCM Address	
Address: 1	
Number to Create: 1	
Security Classes	Create Cancel Help

Figure 70. Create UCMs Dialog Box

4. In the BCU Link field, click the type of communication link the UCMs will use.

Note:

The BCU Link field displays the names of the links you defined in the BCU setup. To add a new communication link, see "Editing a BCU" on page 61.

- 5. Click the arrow to the right of the UCM Type field to select from a list of available UCM types for the particular communication link selected in the BCU Link field.
- 6. Type a name in the UCM Address Name field.

Note:

If you are creating multiple UCMs, Tracer Summit will use the name you enter as the base name followed by numbers for the communication link and the address. For example if you enter *Rooftop Unit* as the name for three UCMs on Link 1, the system would name the units Rooftop Unit-01-033, Rooftop Unit-01-034, and Rooftop Unit-01-035.

7. Click the arrow to the right of the Address field to select an address for the UCM from the list of available addresses. If you are creating multiple UCMs, the address you select will be the first address



assigned. The address for each additional UCM will increase in increments of one.

- 8. Enter the number of UCMs of the particular type that you wish to create in the Number to Create field.
- 9. To modify the security access to the UCMs, click Security Classes (see "Setting Security Access for Objects in a Site" on page 90).
- 10. Click Create to create the UCMs. The Create UCM dialog box closes and the Devices screen displays. The name of the new UCMs appear in the UCMs in Selected Device list.

Deleting a UCM

Note:

If you have created the UCM but have not saved it in site configuration, clicking Delete UCM clears the UCM from the site.

If the UCM has been saved in the site, you cannot delete the UCM in the Site Configuration editor. Instead, use the Delete Object utility in the Tools menu to delete the UCM. (See Chapter 39, "Deleting Objects and Sites.")

To delete a UCM during Site Configuration:

1. Click the Devices tab from the Site Configuration editor to display the Devices screen (see Figure 71 on page 76).

Figure 71. Site Configuration Editor Devices Screen

Setup Devices Event Classes	Event Receivers Control Priorities	Units Date/Time Communications			
Devices BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing	Workstations AHU Mezzanine Workstation - 1 A Bill's workstation - 183 JIM W Joe's Workstation - 187	Non-Trane BACnet device BACnet Device 11			
Create Device	Create Workstation	Create Non-Trane BACnet device			
Edit Device	Edit Workstation	Edit Non-Trane BACnet device			
Delete Device	Delete Workstation	Delete Non-Trane BACnet device			
	I	1			

UCMs in Selected Device

UCM Name	UCM Type	Link	Address	Neuron ID	
AMS Wireless Receiver	Wireless Receiver	1	2		
Central Area LCP	Lighting Control Panel				
CUH-1 Southwest Entrance	Terminal Unit Controll	1	38		
CUH-2 Southeast Entrance	Terminal Unit Controll	1	39		
CUH-3 Main Entrance	Terminal Unit Controll	1	36		
CUH-4 Main Training Entrance	Space Comfort Contro	2		000411804500	
CUH-5 Training Entrance	Terminal Unit Controll	1	37		
FP VAV 1-01 Visitor Room	VariTrane UCM_II/III/IV	1	85		
FP VAV 1-02 Tang	VariTrane UCM_II/III/IV	1	86		
FP VAV 1-03	VariTrane UCM_II/III/IV	1	87		•
Create UC <u>M</u>					
Assign Neuron ID					
Delete UCM					



- 2. Click the name of the UCM in the UCMs in Selected Device list that you wish to delete.
- 3. Click the Delete UCM button.

Configuring Communication Settings

The Communications editor allows you to configure a site's connection type after a site has been created. If the No Connection option was selected during site creation or an incorrect connection type was defined, use this editor to define the appropriate site connection type.

To Configure a Connection Type:

1. Click the Communications tab from the Site Configuration editor to display the Communications screen (see Figure 72).

Figure 72. Communications Screen

_	Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	
	Curren Site: Ope Netw Prote	nt Commun n On Startu vork Type: ocol:	ications Settings— BASD≁ Ip: No No Spe BACne	AMS scified Connection t				Configure	

2. Click the Configure button to display the Connection Wizard dialog box (see Figure 73).



Figure 73. Site Connection Wizard Dialog Box

- 3. To change connection type, follow the instructions for connecting to the following sites:
 - "Site Connection via dedicated Ethernet or ARCNET" on page 36
 - "Site Connection via BACnet/IP" on page 37



• "Site Connection by Modem or Hardwired" on page 40

Note:

BMTX does not support ARCNET communications.

4. After you are finished defining the connection for the site, Tracer Summit returns you to the Communications screen, where current network settings are displayed in the Current Communications Settings fields.

Selecting the BCU Version to Download

Tracer Summit stores several versions of BCU software code on the PC workstation. When a BCU is connected to a workstation and requests code, the workstation sends the code to the BCU based on the version selected in site configuration.

To select the BCU version:

1. Click the Setup tab from the Site Configuration editor to display the Setup screen (see Figure 74).

Figure 74. Site Configuration Editor Setup Screen

•	Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	1	
	Site	BASD	-AMS	 Modular BCU (BMTW) Version: 1	7.005	_	ĺ		
	End of Billing Name Switch End Of Billing 1: TSES EOB Image: TSES_EOB_BOP / Present Value End Of Billing 2: End of Billing 2 Image: Not Used End Of Billing 3: End of Billing 3 Image: Not Used									
	– Secu	ity Class N	ames					1		
		Class 1:	Class 1	Clas	s 9: Class 9					
		Class 2:	Class 2	Clas	s 10: Class 10					
		Class 3:	Class 3	Clas	s 11: Class 11					
		Class 4:	Class 4	Clas	s 12: Class 12					
		Class 5:	Class 5	Clas	s 13: Class 13					
		Class 6:	Class 6	Clas	s 14: Class 14					
		Class 7:	Class 7		a 15: Class 15					



2. Click the arrow to the right of the Enhanced BCU (BMTX) Version field or the Modular BCU (BMTW) Version field to select the version for downloading.

Note:

On sites containing a mix of different model BCUs:

- BMTS BCUs must be at image 6.11
- BMTW BCUs (when mixed with BMTX BCUs) must be at Version 16.00 or higher.

Defining Billing Periods

Tracer Summit allows you to define billing period names and switches for calculation objects. For example, calculations for power consumption, water consumption, and gas consumption are tied to the utility company's billing signal so that the Tracer Summit calculations are reset simultaneously as the utility company's.

To define the billing period:

1. Click the Setup tab from the Site Configuration editor to display the Setup screen (see Figure 75).

Figure 75. Site Configuration Editor Setup Screen

Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	
Site	BASD)-AMS	Modular BCU	(BMTW) Version: 1	7.005	_	[
-End (End (End (End (of Billing Df Billing 1: Df Billing 2: Df Billing 3:	Name TSESEOB End of Billing 2 End of Billing 3	Switch PNot Used Not Used	TSES_EOB_BOP	/ Present	Value		
- Secu	rity Class N	lames					J	
	Class 1:	Class 1	Clas	s 9: Class 9				
	Class 2:	Class 2	Clas	s 10: Class 10				
	Class 3:	Class 3	Clas	s 11: Class 11				
	Class 4:	Class 4	Clas	s 12: Class 12				
	Class 5:	Class 5	Clas	s 13: Class 13				
	Class 6:	Class 6	Clas	s 14: Class 14				
	Class 7:	Class 7	Clas	s 15: Class 15				
	Class 8:	Class 8	Clas	s 16: Class 16				

2. Type the name for the first end of billing switch in the End of Billing 1 name field.



- 3. Select a referencer in the Switch field. For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls."
- 4. Repeat steps 2 and 3 for End of Billing 2 and End of Billing 3, if desired.

Defining Security Class Names

You define names for the security classes used throughout the site in the Site Configuration editor. The security classes allow you to control which operators have access on an object-by-object basis. Each user's level of access is set in Site Security editor. See Chapter 9, "Setting Up Security— Tracer Summit System."

To define security class names:

1. Click the Setup tab from the Site Configuration editor to display the Setup screen (see Figure 76).

Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	1
Site	BASD)-AMS	Modular BCL	I (BMTW) Version:	17.005	•	[
End	of Billing Of Billing 1:	Name TSES EOB	Switch	TSES_EOB_BOF	? / Preser	nt Value		
End	Of Billing 2:	End of Billing 2	🔁 Not Used					
End Of Billing 3: End of Billing 3								
- Secu	urity Class N	ames					7	
	Class 1:	Class 1	Cla	ass 9; Class 9				
	Class 2:	Class 2	Cla	ass 10: Class 10				
	Class 3:	Class 3	Cla	ass 11: Class 11				
	Class 4:	Class 4	Cla	ass 12: Class 12				
	Class 5:	Class 5	Cla	ass 13: Class 13				

Figure 76. Site Configuration Editor Setup Screen

- 2. Type the name for the first class in the Class 1 field.
- 3. Repeat the previous step for each class you wish to name.



Setting Up Event Classes

The Event Classes page lets you set up alarming options for each event class.

You can specify the following for each event class:

- Workstation beeps when an event is received.
- Operator acknowledges that an event message has been received.
- Forward an event to a different event class
- Attach expanded messages to specific event classes.
- Associate an event class with an alarm category.

Table 3 describes predefined event classes and shows recommended notifications.

	Table 3.	Predefined	Event Classes	and Recommended	Notifications
--	----------	------------	----------------------	-----------------	---------------

Event Class	Event and Alarm Types	Audible Beep	Acknowledgment Required
System Print	None	No	No
System Log	Power Failure, Operator Log On/Off, UCM Diagnostic Alarm*, UCM Diagnostic Alarm Restore*	No	No
System Alarm	UCM Communication Failure*, UCM Communication Restore*	Yes	No
System Critical Alarm	BCU Communication Failure, BCU Communication Restore, Watchdog Time-Out	Yes	Yes
	Comm5 NVM File Corrupted	Yes	Yes
	BACnet Comm5 Database Mismatch	Yes	Yes
* If the alarm class is	set to "No Notification" in the UCM editor.	•	·



Example of User-Defined Event Classes

Figure 77 shows an example of user-defined event classes. Class 5 is named Pager Alarm, and Class 7 is named Event Alarm Class. When an event using the MOBILE ALARMS Class 6 is received, the system beeps and requires acknowledgment within 30 minutes or the alarm is rerouted to the Pager Alarm class. The PC workstation receives all events.

Figure 77. Example of User-Defined Event Classes

etup Devices Event Classes	s Event Re	ceivers	Control Priorities	Units	Date/Time	Communications			
Event Class	Веер	Ack Regd	Delay Min.	Forward	To Event	Expanded	Message	Category	
System Print									
System Log			0	No Notifi	cation	None		Category None	
System Alarm			0	No Notifi	cation	None		Category None	
System Critical Alarm			0	No Notifi	cation	None		Category None	
Pager Alarms	~	✓	20	No Notifi	cation	None		Category 2	
MOBILE ALARMS 6	×	✓	30	Pager Al	arms	None		Category 2	
Event Alarm Class 7			0	No Notifi	cation	None		Category None	
avi's alarms			0	No Notifi	cation	None		Category None	
Auto-Insertion alarms	~	✓	0	No Notifi	cation	None		Category None	
CHILLER MMR	>	✓	0	No Notifi	cation	None		Category None	

To set up event classes:

- 1. Click the Event Classes tab from the Site Configuration editor to display the Event Classes screen (see Figure 77).
- 2. Click the Event Classes field to Select the field.
- 3. Enter a label for the class in the Event Class field.

Note:

Labels for event classes one through four are pre-defined and cannot be altered.

- 4. To make the receivers beep when an event of that class is received, click the Beep check box.
- 5. To require acknowledgment of event messages, click the Ack Reqd check box.
- 6. To set the delay before an event is forwarded if it is not acknowledged, change the value in the Delay Minutes field to increase or decrease the delay.
- 7. Click the Forward To Event field to display an arrow to the right of the field. (See Figure 77.)
- 8. Click the selection arrow to display a list of event classes.
- 9. Select an event class from the list to forward the event message to.
- 10. To assign an expanded message, click in the field to display an arrow to the right of the field.
- 11. Click the selection arrow to display a selection of expanded messages.





12. Select an expanded message for the event class.

Note:

The analog input and binary input allow an expanded message to be associated with their event class. That setup takes priority over this setting.

- 13. To assign an alarm category, click in the field to display an arrow to the right of the field.
- 14. Click the selection arrow to display a list of category alarms.

Note:

You can assign categories (1–5) based on level of importance of the alarms, work shifts, individuals, or whatever you want (see Figure 77).

- 15. Select a category for the event class.
- 16. Click Save.

Setting Up Event Receivers

From the Event Receiver screen, you can set up event routing for event classes (see Figure 78). Event messages are generated at the BCU and sent to every workstation, cell phone/pager, BCU event log, or Non-Trane BACnet device defined in the site.

Figure 78. Event Receiver Screen

Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	
Ev	ent Receive vent Classe:	er Switch: ⊉⊺ ⊓ s Event Receive	ue 💽	Workstation - 1:				
	Event Clas	ss	Rece	ive Events				
	System Pri	int	Neve	r				
	System Lo	g	Alway	ls -				
	System Ala	arm	Alwaj	/s				
	System Cri	itical Alarm	Alwaj	/s				
	Pager Alar	rms	Neve	r				
	MOBILE A	LARMS 6	Neve	1				
	Event Alar	rm Class 7	Neve	ſ				
	avi's alarm	IS	Neve	ſ				
	Auto-Inser	tion alarms	Neve	ſ				
	CHILLER	MMB	Neve	ſ				
	CHILLER	MAR	Neve	ſ				
	Event Alarm Class 12			ſ				
	Event Alarm Class 13			ſ				
	Event Alar	rm Class 14	Neve	ſ				
	Event Alar	rm Class 15	Neve	ſ				
	Event Alar	rm Class 16	Neve	ſ				
	Event Alar	rm Class 17	Neve	ſ				
	ll Event Alar	rm Class 18	Neve	ſ				



Non-Trane BACnet Devices

When a non-Trane BACnet device is selected as the active event receiver, the Process ID column displays (see Figure 79).

• Type the process ID for the BACnet device.

Note:

The process ID that you enter here must agree with the process ID determined for the BACnet device.

Figure 79. Process ID Column

Setup	Devices	Event Classes	Event Receiv	vers	Control Priorities	Units	Date/Time	Communications		
Eve E	Event Receiver Switch: 2 True									
Event Receiver: BACnet Device 11										
	Event Class				ive Events Process ID					
	System Pri	nt	1	Never 0				0		
	System Lo	9		Never		0				
	System Ala	im		Never 0				0		
	System Cri	tical Alarm		Never 0				0		
	Pager Alar	ms		Never 0				0		
	MOBILE ALARMS 6			Never				0		
	Event Alarm Class 7			Never 0				0		
	avi's alarms			Never 0			0			
	Auto-Insertion alarms			Never						
	CHILLER MMR			Never				0		
	CHILLER I	MAR		Never				0		


To set up event routing for event receivers:

- 1. Click the Event Receivers tab from the Site Configuration editor to display the Event Receiver screen.
- 2. Click the selection arrow to the right of the Event Receiver field to select an event receiver (see Figure 80).

Note:

Every workstation, cell phone/pager, and BCU local event log defined in the site appears in the Event Receiver list.

- 3. Click in an Event Class field to select the field.
- 4. Click in the Receive Events field to display an arrow to the right of the field.
- 5. Click Always, True, or False for each class to select the conditions under which an event message is sent.
- 6. Click the arrow to the right of the Event Receiver Switch field to select True or False, or enter a referencer.

Note:

For information about referencers, See Chapter 4, "Using Referencer Edit Controls."

- 7. Repeat for all event receivers.
- 8. Click Save.

Figure 80. Event Receiver Switch

Setup	Devices	Event Classes	Event Receive	control Priorities	Units	Date/Time	Communications		
Eve	ent Receive	rSwitch: 😰 Tru	ie _]					
L EV	vent Classes	;							
	Event Receiver: AHU Mezzanine Workstation - 1:								
	Event Class			Receive Events					
	System Print			Never					
	System Log			Always					
	System Alarm			Always					
	System Critical Alarm			Always					
Pager Alarms			T	rue (Receiver Switch)			•		





Setting Up Control Priorities

Control priorities identify the levels at which Tracer Summit applications control an object. Normally, control priorities are set to the Tracer Summit defaults. For information on setting up control priorities for non-Trane BACnet devices, see Chapter 37, "Using BACnet for Non-Trane Devices."

Setting the Time and Date for the Site

The time and date options in the Site Configuration editor allow you to:

- Set the workstation time
- Synchronize all devices on the site to the workstation time
- Synchronize all devices on the site to another device
- Automate daylight savings start and stop in the BCUs

Setting the Workstation Time and Zone

1. Click the Date/Time tab from the Site Configuration editor to display the Date/Time screen (see Figure 81).

Figure 81. Site Configuration Editor Date/Time Screen

Current Workstation Date/Time Saturday, March 25, 2006 2:52:08 PM Central Standard Time Device Time Synchronization ✓ Automatic Time Synchronization Enabled (Required for daylight savings time) Time Synchronization Device BCU 1 · Training Lobby	Se	tup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	
Device Time Synchronization Image: Automatic Time Synchronization Enabled (Required for daylight savings time) Time Synchronization Device BCU 1 · Training Lobby Site Daylight Savings Time Device time is a second of the second	Current Workstation Date/Time Saturday, March 25, 2006 2:52:08 PM Central Standard Time									
Site Daylight Savings Time		Device Time Synchronization Automatic Time Synchronization Enabled (Required for daylight savings time) Time Synchronization Device BCU 1 - Training Lobby								
bou daylight savings time is enabled.		Site D BCU) aylight Sa daylight sa	vings Time	oled.			Configure		

2. Click Adjust Date/Time to display the Date/Time Properties dialog box (see Figure 82 on page 87). The Date & Time tab displays.



Date/T	ime F	rope	ertie	s			? ×
Date	Time	Ìта		1			
Date	x rune	1.11	ne Z	one			
$\begin{bmatrix} D \\ at \end{bmatrix}$	e —						Lime
Fe	bruary		1 [2000	_	÷	and the second
	-						
S	M	Т	W	T	F	S.	$ \neq \downarrow \downarrow $
		1	2	3	4	5	
E	7	8	9	10	11	12	
1	3 14	15	16	17	18	19	
2	21	22	23	24	25	26	
2	7 28	29					
							6:00:56 PM ÷
			_		_		
Curre	nt time	zone	e: Ce	entral	Star	ndard	Time
		_	_	_			
						0	JK Cancel Apply

Figure 82. Date/Time Properties Dialog Box

- 3. Click the arrow to the right of the month field to select the month.
- 4. Click the arrows to the right of the year field to select the year.
- 5. Click the date in the calendar.
- 6. To set the time, click the hour, minute, or second field and then click the arrows up or down to adjust the time.
- 7. To set the time zone, click the Time Zone tab to display the Time Zone screen (see Figure 83).

Figure 83. Time Zone Screen



- 8. Click the arrow to the right of the time zone field to select the correct time zone.
- 9. To change the default setting, click the Automatically Adjust Clock for Daylight Saving Changes box.
- 10. Click OK to close the Date/Time Properties dialog box and display the Date/Time screen.



Setting Site Daylight Savings/Standard Time

1. Click the Date/Time tab from the Site Configuration editor to display the Date/Time screen (see Figure 84).

Figure 84. Site Configuration Editor Date/Time Screen

Current Workstation Date/Time Saturday, March 25, 2006 2:52:08 PM Adjust Date/Time Synchronize Now	-							
Current Workstation Date/Time Saturday, March 25, 2006 2:52:08 PM Central Standard Time								
Device Time Synchronization ✓ Automatic Time Synchronization Enabled (Required for daylight savings time) Time Synchronization Device BCU 1 - Training Lobby								
Site Daylight Savings Time BCU daylight savings time is enabled. Configure								

2. Click the Configure button to display the Site Daylight Savings Time dialog box (see Figure 85).

Figure 85. Site Daylight Savings Time Dialog Box

Site Daylight Savings Ti	ime Dialog Box				×
✓ Enable Daylight Savings Time Daylight Savings Time Daylight Savings Time Occurrence: Daylight Savings Time © First © Si C Second C M C Third C Tri C Fourth C W C Fifth C Ti C Last C Fith	rings Time Start J Week unday londay vesday /ednesday hursday riday aturday	Standard Time Occurrence C First C Second C Third C Fourth C Fifth C Last	Start Day Of Week Sunday Monday Tuesday Wednesday Thursday Friday Saturday	Month October	
			OK	Cancel	

- 3. If the Site Daylight Savings Time fields are unavailable, click the Enable Daylight Savings Time check box to enable the fields.
- 4. In the Daylight Savings Time Start fields, click the week of the month and the day of the week on which you want daylight savings time to start.
- 5. Click the arrow to the right of the Month field to select the month in which you want daylight savings time to start.
- 6. In the Standard Time Start fields, click the week of the month and the day of the week on which you want daylight savings time to end.





7. Click the arrow to the right of the Month field to select the month in which you want daylight savings time to end.

Note:

Only the BCU selected as the time synchronization device should implement Daylight Savings Time adjustment.

Setting Device Time Synchronization

Tracer Summit automatically synchronizes the time on all devices from a master device at 2 a.m. each day. Typically, a BCU is chosen as the master device because a PC workstation may be turned off from time to time. You can also force synchronization of time to a PC workstation by using the Synchronize Now button at the Site Configuration editor's Date/Time screen.

To set device time synchronization:

1. Click the Date/Time tab from the Site Configuration editor to display the Date/Time screen (see Figure 86).

Figure 86. Site Configuration Editor Date/Time Screen

Setup	Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications		
Curre Satu 2:52 Cen	ent Worksta urday, Marcł 208 PM tral Standar	tion Date/Time — h 25, 2006 d Time		Adjust Date/Time		Synchronize	Now		
Devi Tim BC	Device Time Synchronization Automatic Time Synchronization Enabled (Required for daylight savings time) Time Synchronization Device BCU 1 - Training Lobby								
Site	Daylight Sav	vings Time							
BCL	J daylight sa	ivings time is enab	led.			Configure			

- 2. To automatically align the time of all BCUs on the site with a particular device, click the Automatic Time Synchronization Enabled check box.
- 3. Click the arrow to the right of the Time Synchronization Device field to select a device to which you want to synchronize all other units. The current time on this device will be used for synchronization when you select Automatic Time Synchronization Enabled.
- 4. To synchronize devices immediately, click Synchronize Now to set all times on the BCUs on the site (if they are communicating) to the workstation time. A dialog box displays showing devices that have been synchronized (see Figure 87 on page 90).



Note:

Automatic time synchronization is conducted in the early morning each day. If you want to force synchronization immediately, click the Synchronize Now button. This process will not, however, set the time of other workstations on the site. You must set the time for the workstation individually.

Figure 87. Synchronization Status Dialog Box.



Setting Security Access for Objects in a Site

The default security access for any object allows access for all classes. You can change the default security access settings for any object you create in a site. To change access, click the Security Classes button from the dialog box of the object for which you want to change access. For a complete discussion of security classes, see Chapter 9, "Setting Up Security—Tracer Summit System."

To change security class access to an object:

 Click Security Classes from the dialog box for the object you wish to modify to display the Change Security Classes dialog box (see Figure 88).

Change Security Classes X Class Access Class Name 1 System Operator 2 2 Day Operator বেবেবেব 3 Night Operator 4 Security 5 Chiller Plant 6 Administration Manufacturing 7 8 ICS University 9 Engineering ববব 10 Applications 11 Marketing 12 Finance Training ব 13 14 Product Commun 15 Human Resources ☑ 16 Production ☑ ПK Cancel Help

Figure 88. Change Security Classes Dialog Box



- 2. Click the access check boxes to allow or deny access to the object. The security class names are defined in the Setup screen of Site Configuration editor (see "Defining Security Class Names" on page 80).
- 3. Click OK to close the Security Classes dialog box and display the previous screen.

Deleting a Site

A site cannot be deleted from the Site Configuration editor. Use the Delete Object utility in the Tools menu to delete a site object. (See Chapter 39, "Deleting Objects and Sites.")



Configuring Tracer Summit BCU Sites



Chapter 7

Comm5 Links

This chapter describes how to:

• Install a new Comm5 link on a Tracer Summit building control unit (BCU).

For a BMTX BCU or a high capacity BMTW BCU, see page 94. For a standard capacity BMTW BCU, see page 100.

- Add a new UCM to an existing Comm5 link on a Tracer Summit BCU. For a BMTX BCU or a high capacity BMTW BCU, see page 107. For a standard capacity BMTW BCU, see page 109.
- Replace a UCM on an existing Comm5 link on a Tracer Summit BCU (see page 112).
- Upgrade Comm5 database storage in a high capacity BMTW BCU that has had its software image upgraded to Version 16 (see page 115).
- Replace an existing BCU (standard or high capacity BMTW) with a BMTX BCU (see page 118).

Differences Between BCUs Regarding Discovery and Database Storage

BMTX BCUs and high capacity BMTWs are different from a standard capacity BMTW BCU in terms of:

- Comm5 link discovery
- Comm5 database storage in non-volatile memory (Flash)

The BMTX BCU and the high capacity BMTW BCU do not automatically discover the Comm5 link. While setting up a site, a user will discover the Neuron ID and the bindings on a Comm5 network by using Site Configuration. When Site Configuration is completed, the Comm5 database is saved into non-volatile memory (Flash). The BMTX BCU and high capacity BMTW BCU use this Comm5 database after a power failure, reset, clear RAM, clear database, and clear code.

The standard capacity BMTW BCU discovers its Comm5 link automatically on initial power-up of the BCU or after a clear RAM. The Comm5 database is stored in volatile memory (RAM). If RAM is cleared, this database is recreated from the devices the BCU finds on the link. The Comm5 database is not stored in non-volatile memory.



Installing a New Comm5 Link (BMTX or High Capacity BMTW)

Before getting started, use the Rover service tool to verify that all devices on the Comm5 link have been configured and operation verified. Then remove the Rover service tool from the link and follow this procedure:

1. Select Setup from the Tracer Summit main menu, then Site Configuration.

Note:

If this is a new site, choose the correct units, add your BCU and PC workstation, and then save your site (see "Creating, Editing, and Deleting Devices" on page 57). Then proceed to step 2.

- 2. Select the Devices tab.
- 3. Highlight the BCU that you want to add devices to. Then, click the Edit Device button. The Edit Device dialog box displays (see Figure 89 on page 95).

If the BCU is a BMTX, proceed to step 5.

Note:

After migrating from either a BMTS or BMTW to a BMTX, you must download the database to the BMTX before the PC Workstation will allow you to do anything to either the Comm5 or UCMs.

- 4. For a high capacity BMTW BCU, in the Communication Links group, choose a link and use the drop-down arrow to access the list of communication links. Select the Comm5 link. (The BMTW BCU can have only one Comm5 link.)
- 5. Click OK to close the dialog box and return to the Devices tab.
- 6. Click Save and create Comm5 UCMs as described in "Creating Comm5 UCMs Objects for BMTX or High Capacity BMTW" on page 95.



Installing a New Comm5 Link (BMTX or High Capacity BMTW)

Edit Device	×
Device Name: BCU-1	
Device ID: 4	
Network Number: 1	
Panel Type: Enhanced BCU (BMTX)	
Communication Links	Modem Operator Display
Link 1: Isolated Comm 3	Add
	Edit
Link 2: Non-Isolated Comm 4	Delete
Link 3 Non-Isolated Comm 4	BCU Event Log
	Add
Link 4: Comm 5	Edit
Security Llasses UK	Lancel Help

Figure 89. Edit Device Dialog Box

Creating Comm5 UCMs Objects for BMTX or High Capacity BMTW

- 1. In Site Configuration, select the Devices tab.
- 2. Highlight the BCU that has the Comm5 link.
- 3. Click the Create UCM button. The Create UCMs dialog box displays (see Figure 90).

Figure 90. Create UCMs Dialog Box

C

reate UCMs	×
BCU: BCU-1 BCU Link C Link 1 Isolated Comm 3 C Link 2 Non-Isolated Comm 4 C Link 3 Non-Isolated Comm 4	UCM Type: Space Comfort Controller (SCC)
UCM Address Base name: SCC	
Start address:	
Security Classes	reate Cancel <u>H</u> elp



- 4. Select the option next to the Comm5 link (Link 4 in Figure 90).
- 5. From the UCM Type drop-down list, select the type of UCM you want to add.
- 6. Type a name in the UCM Address Name field.

Note:

If you are creating multiple UCMs, Tracer Summit software will use the name you enter as the base name and follow it with the communication link number and the device number. For example, if you use the default name "SCC" as the name for three UCMs on Link 4, the system would name the units SCC-1-4-1, SCC-1-4-2, and SCC-1-4-3.

When doing assignments later, use the default base name if you plan to use the location label of the device (that was set up using Rover service tool) as the UCM object name.

- 7. In the Number to Create field, type the number of UCMs you want to create.
- 8. Click the Create button to create the UCMs and return to the Devices tab.

This step creates one UCM object for each of the Comm5 devices. The list of UCMs in the UCMs in Selected Device window shows all of the UCM objects (Figure 91). In this example, six SCC were created. Ultimately, each UCM object will be connected to a Comm5 UCM through assigning a Neuron ID.

Figure 91.	UCMs in	Selected	Device	Window
------------	---------	----------	--------	--------

Devices	Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications
: • Training L • Engineerir • Manufactu	obby ng uring	Workstations AHU Mezzanine W Bill's workstation - 1 JIM W Joe's Workstation -	orkstation - 1 🔺 83 🔹 187 💽	Non-Trane BACnet De	BACnet devic avice 11	:e
Create D	evice	Create Workstation		Create Non-Trane BACnet device		
Edit Dev	vice	Edit Works	tation	Edit Non-	Trane BACne	t device
D elete D	levice	Delete Wor	kstation	Delete No	n-Trane BAC	net device
	Devices Training L Engineerir Manufactu Create D Edit Dev Delete D	Devices Event Classes Training Lobby Engineering Manufacturing Create Device Edit Device Delete Device	Devices Event Classes Event Receivers Training Lobby AHU Mezzanine W Bill's workstation - 1 JIM W Joe's Workstation - 1 JIM W Joe's Workstation - 1 Create Device Create Device Create Work Edit Device Edit Works Delete Device Delete Work	Devices Event Classes Event Receivers Control Priorities Workstations Training Lobby Engineering AHU Mezzanine Workstation - 1 Bill's workstation - 183 Manufacturing Bill's workstation - 187 Create Device Create Workstation Edit Device Edit Workstation Delete Device Delete Workstation	Devices Event Classes Event Receivers Control Priorities Units Workstations Training Lobby AHU Mezzanine Workstation -1 All BACnet De Engineering Bill's workstation - 183 BACnet De Manufacturing Dill's workstation - 187 Create Device Create Workstation Edit Device Edit Workstation Edit Non- Delete Device Delete Workstation Delete No	Devices Event Classes Event Receivers Control Priorities Units Date/Time Workstations Non-Trane BACnet device Training Lobby AHU Mezzanine Workstation - 1 BACnet Device 11 Engineering Bil's workstation - 183 Date/Time Manufacturing Dil's workstation - 187 Create Device Create Non-Trane BACnet Edit Device Create Workstation Create Non-Trane BACnet Edit Non-Trane BACnet Delete Device Delete Workstation Delete Non-Trane BACnet Delete Non-Trane BACnet

UCMs in Selected Device					
UCM Name	UCM Type	Link	Address	Neuron ID	
AMS Wireless Receiver	Wireless Receiver	1	2		
Central Area LCP	Lighting Control Panel				
CUH-1 Southwest Entrance	Terminal Unit Controll	1	38		
CUH-2 Southeast Entrance	Terminal Unit Controll	1	39		
CUH-3 Main Entrance	Terminal Unit Controll	1	36		
CUH-4 Main Training Entrance	Space Comfort Contro	2		000411804500	
CUH-5 Training Entrance	Terminal Unit Controll	1	37		
FP VAV 1-01 Visitor Room	VariTrane UCM_II/III/IV	1	85		
FP VAV 1-02 Tang	VariTrane UCM_II/III/IV	1	86		
FP VAV 1-03	VariTrane UCM_II/III/IV	1	87		_
Create UC <u>M</u>					
<u>A</u> ssign Neuron ID					
<u>D</u> elete UCM					



- 9. Click the Create UCM button to add other Comm5 UCMs.
- 10. When you are finished, click Save to add these new objects to the Tracer Summit database.

Assigning Neuron IDs

Follow this procedure to discover Comm5 devices and bindings and to assign Neuron IDs to the UCM objects. Automatic discovery is initiated in standard capacity BMTWs (for more information, see "Differences Between BCUs Regarding Discovery and Database Storage" on page 93).

Note:

BMTX and high capacity BMTW BCUs will preserve bindings only under the following conditions:

- Comm5 devices have not been installed on this BCU.
- All of the devices which have custom bindings were either wired together at the time the bindings were made, have always been wired together when communicating with Rover since the bindings were made, and are now all wired to the BCU.
- 1. In Site Configuration, click the Devices tab.
- 2. On the Devices tab, click the Assign Neuron ID button to open the Assign Neuron ID dialog box.

When the Assign Neuron ID dialog box opens, all command buttons are unavailable while the PC workstation determines whether Comm5 activity is occurring in the BCU. When there is Comm5 activity, a progress bar displays in the Comm5 Status group in the upper right-hand corner of the dialog box. When all activity ends, the command buttons are available again.

3. Click the Discover Neuron IDs button. In this phase of discovery, the BCU discovers devices on the link and builds a list of Neuron IDs Unassigned to UCM Objects.

Note:

Before proceeding, look at the Comm5 Object and Neuron ID Summary on the right side of the dialog box to confirm that the BCU found devices (Figure 92).

4. Click the Discover Binding button, *only if bindings exist on the site*. (Since this phase of discovery can take time on a large link, it is more efficient to omit this step if bindings don't exist.)

In this phase of discovery, the BCU discovers bindings, verifies that all devices have unique network addresses, and determines that there



are no critical link errors. After discovery is complete, the Comm5 Status field changes to the Normal mode and the dialog is activated.

Note:

The Discover Bindings button is available only during initial installation. If devices are added later to the existing link, their bindings must be recreated using the Rover service tool, after they are installed on the BCU.

Figure 92. Assign Neuron ID Dialog Box-After Discovery of Neuron IDs

Assian Neuron ID	×
- Discovery Options	Comm5 Status
Discover Neuron IDs Bindings Discovery Deteits Identify	Configuration Status: Normal
Assign and Unassign UCM	
BCU: BCU-1	Comm5 Object and Neuron ID Summary
Comm 5 Link: Link 4	Total UCM Objects Created: 6
UCM Type: Space Comfort Controller (SCC) -	Total Neuron IDs found on link: 7
Unassigned UCM Object Name: SCC-4-4-1	Unassigned Neuron IDs: 7
Neuron ID: 00-06-72-90-61-00	Assigned Neuron IDs: 0
Assign Location Label to UCM Object Name	
Neuron IDs Unassigned to UCM Objects	Neuron IDs Assigned to UCM Objects
# Location Label Neuron ID Unit Type [Manufac	# UCM Name Location L Neuron ID Unit Type
1 FCU-3 ZN-511 000672906100 SCC - Heat Pump [T	
2 FCU-2 ZN-511 000979674400 SCC - Generic [Tran	
4 Boiler control M 00:176069200 SCC - Generic ITter	1
5 UV-1 ZN521 000798273500 SCC - Canalic [Trai	
6 Tower Valve M 000974551600 SCC - Generic [Tran // [hassing	
	1
<< [Inassign All	1
	1

- 5. To view the Discovery Details window to see if errors exist, click the Discovery Details button (Figure 93 on page 99). If errors exist, detailed information about them will appear in this window. If the errors are non-critical, such as Duplicate DSNs (domain, subnet, node) or incomplete bindings, the Fix button will be available.
- 6. To allow the BCU to resolve non-critical errors, click the Fix button (see Help for more detailed information about actions taken by the BCU). To manually resolve non-critical errors, click Help for suggestions.

If critical errors exist, contact technical support and provide them with the critical error message number to get help with resolving them.

Note:

All errors must be resolved before installation to ensure that bindings are saved.

If errors existed and were fixed, you will have to run the discoveries again. After viewing the Discovery Details window, proceed to the next step.



Installing a New Comm5 Link (BMTX or High Capacity BMTW)

52	Location Laber	Neuron ID	Unit Type [Manufacturer]	Error Type
	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
53	FAU TRACER LCI-I INTELLIPAK	00a279708800	DAC - Undefined [Trane]	Incomplete Bin
54	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
55	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
6	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
57	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
58	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
59	Mike's AH540 Rev2 board - DAC	04cb45000100	DAC - Undefined [Trane]	Incomplete Bin
0	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
1	FAU TRACER LCI-I INTELLIPAK	00a279708800	DAC - Undefined [Trane]	Incomplete Bin
2	its an mp501	000567846000	SCC - Generic [Trane]	Duplicate DSN
73	TRACER LCI-I INTELLIPAK	00a241650500	SCC - Self Contained [Trane]	Duplicate DSN 🔽
r				F

Figure 93. Discovery Details Dialog Box-With Errors

- 7. Click Save to File to save the report to a file for future reference, or click Close to exit the Discover Details window and return to the Assign Neuron ID dialog box.
- 8. After all Neuron IDs are found and errors corrected, you can begin assigning Neuron IDs to UCM objects. From the UCM Type dropdown list in the Assign Neuron ID dialog box, select the appropriate UCM type.
- 9. From the Unassigned UCM Object Name drop-down list, select an Unassigned UCM Object Name to give an unassigned Neuron ID to.

Note:

If you are using the location label as the object name, use the default name that appears in the Unassigned UCM Object Name field. For example, Figure 92 on page 98 shows SCC-4-4-1 as the object name.

- 10. If you do not want to use the Neuron ID location label as the UCM name, clear the Assign Location Label checkbox.
- 11. In the Neuron IDs Unassigned to UCM Objects list, select the Neuron ID that you want associated with the UCM object displayed in the Unassigned UCM Object Name field.
- 12. Click the Assign button to give the Neuron ID to the unassigned UCM object and move it to the Neuron ID Assigned to UCM Objects list.
- 13. Repeat the process for the other UCM objects.
- 14. Click OK to return to the Devices tab. Notice that the UCMs in Selected Device list now have Neuron IDs assigned to them.



15. Click Save and close Site Configuration.

You can see communication established with your newly installed devices by looking at the UCM editors. (If power is lost to the BCU before communication is established, the devices will have to be reinstalled.)

Note:

Do not begin working on the link with the Rover service tool until you have verified that all devices are communicating with the BCU.

Installing a New Comm5 Link (Standard Capacity BMTW)

Before getting started, use the Rover service tool to verify that all devices on the Comm5 link have been configured and operation verified. Then remove the Rover service tool from the link and follow this procedure:

1. Select Setup from the Tracer Summit main menu, then Site Configuration.

Note:

If this is a new installation, choose the correct units, add your BCU and PC workstation, and then save your site (see "Creating, Editing, and Deleting Devices" on page 57). Then proceed to step 2.

- 2. Select the Devices tab.
- 3. Highlight the BMTW that you want to add devices to. Then, click the Edit Device button. The Edit Device dialog box displays (see Figure 94).

Figure 94. Edit Device Dialog Box

Edit Device				x
Device Name:	bmtw			
Device ID:	2 👻			
Network Number:	1			
Panel Type:	Modular BCU (BMTW)	- Capacity C	Cards: 1	•
Communication	Links	Modem		Operator Display
Link 1: Lloo	defined 💌		Add	Add
Link I. John			Edit	Edit
Link 2: Uno	defined 💌		Delete	
Link 3: Cor	Link 3: Comm 5		Module Add	BCU Event Log
Link 4: Uno	defined 💌		Edit	Edit
Comm5 Mode				
Install a	new link (bindings will be lost)			
C Add to o BAM to	or discover existing link (then Clear save bindings)			
Security Classes.	OK	Cancel	Help	1



- 4. In the Communication Links group, choose a link and use the dropdown arrow to access the list of communication cards. Select the Comm5 card. (The BCU can have only one Comm5 card in any communication link slot.)
- 5. Select a Comm5 Mode option:
 - Install a new link—Select this option if you don't have custom bindings or don't care if they are destroyed.
 - Add to or discover existing link—Select this option if you want to preserve custom binding.

Note:

The standard capacity BMTW BCU will preserve bindings only under the following conditions:

- Comm5 devices have not been installed on this BCU.
- The Comm5 Mode is set to Add to or Discover existing link.
- All of the devices which have custom bindings were either wired together at the time the bindings were made, have always been wired together when communicating with Rover since the bindings were made, and are now all wired to the BCU.
- RAM is cleared prior to clicking the Discover button on the Assign Neuron ID dialog box, or pressing a service pin on one of the new devices. Existing custom bindings are only discovered on a RAM clear. Trane recommends clearing RAM immediately after configuring the BCU (see "Clearing RAM" on page 103).
- 6. Click OK to close the dialog box and return to the Devices tab.
- 7. Click Save and create Comm5 UCMs as described in Creating Comm5 UCMs Objects below.

Creating Comm5 UCMs Objects

- 1. In Site Configuration, select the Devices tab.
- 2. Highlight the BMTW BCU that has the Comm5 link.
- 3. Click the Create button. The Create UCMs dialog box displays (see Figure 95 on page 102).
- 4. Select the option next to the Comm5 link (Link 4 in Figure 95 on page 102).
- 5. From the UCM Type drop-down list, select the type of UCM you want to add.



Comm5 Links

Create UCMs BCU: BCU-1	X
BCU Link C Link 1 Isolated Comm 3 C Link 2 Non-Isolated Comm 4 C Link 3 Non-Isolated Comm 4 C Link 4 Comm 5	UCM Type: Space Comfort Controller (SCC)
UCM Address	
Start address:	
Number to Create: 6	
Security Classes	Create Cancel <u>H</u> elp

Figure 95. Create UCMs Dialog Box

6. Type a name in the UCM Address Name field.

Note:

If you are creating multiple UCMs, Tracer Summit software will use the name you enter as the base name and follow it with the communication link number and the device number. For example, if you use the default name "SCC" as the name for three UCMs on Link 4, the system would name the units SCC-1-4-1, SCC-1-4-2, and SCC-1-4-3.

When doing assignments later, use the default base name if you plan to use the location label of the device (that was set up using Rover service tool) as the UCM object name.

- 7. In the Number to Create field, type the number of UCMs you want to create.
- 8. Click the Create button to create the UCMs and return to the Devices tab.

This step creates one UCM object for each of the Comm5 devices. The list of UCMs in the UCMs in Selected Device window shows all of the UCM objects (see Figure 96 on page 103). In this example, six SCCs were created. Ultimately, each UCM object will be connected to a Comm5 UCM through assigning a Neuron ID.



Setup	Devices Event C	Classes	Event Receivers	Control Priorities	: Units	Date/Time	Communications
Devic	es		Workstations		Non-Trane	BACnet devic	e
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing		AHU Mezzanine Workstation - 1 Bill's workstation - 183 JIM W Joe's Workstation - 187		BACnet D	evice 11		
	Create Device		Create Workstation		Create No	Create Non-Trane BACnet device	
	Edit Device		Edit Works	Edit Workstation		Edit Non-Trane BACnet device	
	Delete Device		Delete Wor	kstation	Delete No	on-Trane BACr	net device
UCMs	in Selected Device	(((
	Name		СМ Туре	Link	Address	Neuron I	
AMS	Wireless Receiver	W	ireless Receiver	1	2		
Centr	al Area I I P						
I LUH	1.0	Lig	phting Control Panel		20		
L CUIU	1 Southwest Entran	Lij ice Te	ghting Control Panel erminal Unit Controll	1	38		
CUH	1 Southwest Entran 2 Southeast Entran	Lig ice Te ce Te	ghting Control Panel erminal Unit Controll erminal Unit Controll erminal Unit Controll	1 1 1	38 39 26		
	1 Southwest Entran 2 Southeast Entran 3 Main Entrance	Li ice Te ce Te Te rance Sr	ghting Control Panel erminal Unit Controll erminal Unit Controll erminal Unit Controll	1 1 1 2	38 39 36	000411804	
CUH CUH CUH	1 Southwest Entran 2 Southeast Entran 3 Main Entrance 4 Main Training Ent 5 Training Entrance	ce Te ce Te Te rance Sp	ghting Control Panel erminal Unit Controll erminal Unit Controll erminal Unit Controll erminal Unit Controll. erminal Unit Controll	1 1 2 1	38 39 36 37	000411804	LJ 1500
CUH CUH CUH CUH	1 Southwest Entran 2 Southeast Entran 3 Main Entrance 4 Main Training Ent 5 Training Entrance AV 1-01 Visitor Roor	Lig ce Te ce Te rance Sp rance Sp rance Sp rance Va	ghting Control Panel erminal Unit Controll erminal Unit Controll erminal Unit Control pace Comfort Control erminal Unit Control ariTrane UCM 11/11/1	1 1 2 1 4	38 39 36 37 85	000411804	1500
CUH CUH CUH CUH FP V FP V	1 Southwest Entran 2 Southeast Entran 3 Main Entrance 4 Main Training Ent 5 Training Entrance AV 1-01 Visitor Roor AV 1-02 Tang	Lig ce Te rance Sp rance Sp	ghting Control Panel erminal Unit Controll erminal Unit Controll erminal Unit Controll erminal Unit Controll erminal Unit Controll ritTrane UCM 11/11/1 aitTrane UCM 11/11/1	1 1 2 1 4 1 4 1	38 39 36 37 85 86	000411804	4500
CUH CUH CUH CUH FP V FP V FP V	1 Southwest Entran 2 Southeast Entran 3 Main Entrance 4 Main Training Ent 5 Training Entrance AV 1-01 Visitor Roor AV 1-02 Tang AV 1-03	Lig ce Te rance Sp rance Sp r n Va Va Va	ghting Control Panel erminal Unit Controll erminal Unit Controll erminal Unit Controll erminal Unit Controll ariTrane UCM 11/11/1/ ariTrane UCM 11/11/1/ ariTrane UCM 11/11/1/1/	1 1 2 1 7 1 7 1	38 39 36 37 85 86 87	000411804	1500
CUH CUH CUH CUH FP V FP V FP V	1 Southwest Entran 2 Southeast Entran 3 Main Entrance 4 Main Entrance 5 Training Entrance AV 1-01 Visitor Roor AV 1-02 Tang AV 1-03 Create UCM	Lig ce Te rance Sp n Va Va Va	ghting Control Panel rrminal Unit Controll rrminal Unit Controll rrminal Unit Controll rrminal Unit Control rrTrane UCM 11/11/1\ rrTrane UCM 11/11/1\ rrTrane UCM 11/11/1\	1 1 2 1 4 1 4 1 4 1	38 39 36 37 85 86 87	000411804	1500
CUH- CUH- CUH- CUH- FP V/ FP V/	1 Southwest Entran 2 Southeast Entran 3 Main Entrance 4 Main Training Ent 5 Training Entrance AV 1-01 Visitor Roor AV 1-02 Tang AV 1-03 Create UCM Assign Neuron II	Lie ce Te rance Sp n Va Va	ghting Control Panel rrminal Unit Controll rrminal Unit Controll rrminal Unit Controll rrminal Unit Controll miTrane UCM II/III/N ariTrane UCM II/II/N ariTrane UCM II/II/N	1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	38 39 36 37 85 86 87	000411804	1500

Figure 96. UCMs in Selected Device Window

- 9. Click the Create UCM button to add other Comm5 UCMs.
- 10. When you are finished, click Save to add these new objects to the Tracer Summit database.
- 11. Click Close to exit Site Configuration.

Clearing RAM

In order to initiate discovery by the BCU of the devices on the link and their bindings, you need to clear RAM. Bindings will be preserved only if:

- These are the first Comm5 devices installed on the BCU.
- The Comm5 Mode in the Edit Devices dialog box is set to Add to or discover existing link (see Figure 94).
- RAM is cleared after connecting the Comm5 link wire to the BCU.

To clear RAM:

- 1. From the main menu, select Tools.
- 2. Choose BCU Reset/Restore (see Figure 97 on page 104).
- 3. Choose the BCU with the Comm5 card.
- 4. Choose Clear Ram and Reset.
- 5. Click the Reset button.



Comm5 Links

0	0
BCU Reset/Restore	×
Site: mysite	
Choose BCUs to Reset	
BMTW	Select All
	Select None
Choose BCU Reset Level C Reset C Clear RAM and Reset C Clear Database, RAM and Reset C Clear Code, Database, RAM and Reset Code Version: 16.022	Y
Reset Cancel	Help

Figure 97. BCU Reset/Restore Dialog Box

Assigning Neuron IDs

After a clear RAM and reset, allow the BCU about 60 seconds to finish resetting.

- 1. From the Setup menu, open Site Configuration and click the Devices tab.
- 2. On the Devices tab, click the Assign Neuron ID button to open the Assign Neuron ID dialog box.

When the Assign Neuron ID dialog box opens, all command buttons are unavailable while the PC workstation performs discovery of Comm5 devices. When there is Comm5 activity, a progress bar displays in the Comm5 Status group in the upper right-hand corner of the dialog box.

As a result of clearing RAM, discovery is automatically initiated. There are two phases to discovery:

- Phase 1: the BCU discovers devices on the link and builds a device list.
- Phase 2: the BCU discovers bindings and verifies Comm5 network configuration. A phase 2 discovery only occurs after a clear RAM.

When all activity ends, the command buttons are available again, and devices that have been discovered appear in the Neuron IDs Unassigned to UCMs Objects window (see Figure 98 on page 105). If devices do not show up on the list, you can click Discover Neuron IDs to initiate a discovery.



Assign Neuron ID		×		
Discovery Options		Comm5 Status		
Discover Neuron IDs Discover Bindings Discover	lis Identify	Configuration Status: Normal		
Assign and Unassign UCM				
BCU: BCU-1	1	Comm5 Object and Neuron ID Summary		
Comm 5 Link: Link 4	4	Total UCM Objects Created: 6		
UCM Type: Space	ce Comfort Controller (SCC) 💌	Total Neuron IDs found on link: 7		
Unassigned UCM Object Name: SCC-4	-4-4-1	Unassigned Neuron IDs: 7		
Neuron ID: 00-06	6-72-90-61-00	Assigned Neuron IDs: 0		
Assign Location Label to UCM Object	ect Name			
Neuron IDs Unassigned to UCM Objects	ts	Neuron IDs Assigned to UCM Objects		
# Location Label Neuron ID	Unit Type [Manufac	# UCM Name Location L Neuron ID Unit Type		
1 FCU-3ZN-511 0006729061	100 SCC Heat Pump [T			
2 FCU-2ZN-511 0009/96/44 3 FCU-1ZN511 0004119518	800 SCC - Ean Coil ITran Assign >>			
4 Boiler control M 00a1760682	3200 SCC - Generic [Tran			
5 UV-1 ZN521 0007982735 6 Tawar Value M 000974EE10	3500 SCC - Fan Coil [Tran			
6 Tower valve M 0003/45516	600 SCC- derietic [Tiar << Unassign			
	<< []nassim All			
<u>L-1</u>				
		OK Cancel Help		

Figure 98. Assign Neuron ID Dialog Box-After Discovery

- 3. To view the Discovery Details window to see if errors exist, click the Discovery Details button (Figure 99 on page 106). If errors exist, detailed information about them will appear in this window. If the errors are non-critical, such as Duplicate DSNs (domain, subnet, node) or incomplete bindings, the Fix button will be available.
- 4. To allow the BCU to resolve non-critical errors, click the Fix button (see Help for more detailed information about actions taken by the BCU). To manually resolve non-critical errors, click Help for suggestions.

If critical errors exist, contact technical support and provide them with the critical error message number to get help with resolving them.

Note:

All errors must be resolved before installation to ensure that bindings are saved.

If errors existed and were fixed, you will have to run the discoveries again. After viewing the Discovery Details window, proceed to the next step.



Comm5 Links

Figure 99.	Discovery	/ Details Dialog	Box—With Errors

#	Location Label	Neuron ID	Unit Type [Manufacturer]	Error Type
62	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
63	FAU TRACER LCI-I INTELLIPAK	00a279708800	DAC - Undefined [Trane]	Incomplete Bin
64	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
65	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
66	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
67	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
68	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
69	Mike's AH540 Rev2 board - DAC	04cb45000100	DAC - Undefined [Trane]	Incomplete Bin
70	its an mp501	000567846000	SCC - Generic [Trane]	Incomplete Bin
71	FAU TRACER LCI-I INTELLIPAK	00a279708800	DAC - Undefined [Trane]	Incomplete Bin
72	its an mp501	000567846000	SCC - Generic [Trane]	Duplicate DSN
73	TRACER LCI-I INTELLIPAK	00a241650500	SCC - Self Contained [Trane]	Duplicate DSN 属
•				•

If errors are not resolved and you select OK on the Assign Neuron ID screen, the BCU will attempt to resolve errors for you. See Help for specific actions the BCU may take.

Eix

Save to File

⊆lose

Help

- 5. Click Save to File to save the report to a file for future reference, or click Close to exit the Discover Details window and return to the Assign Neuron ID dialog box.
- 6. From the UCM Type drop-down list in the Assign Neuron ID dialog box, select the appropriate UCM type.
- 7. From the Unassigned UCM Object Name drop-down list, select an Unassigned UCM Object Name give an unassigned Neuron ID to.

Note:

If you are using the location label as the object name, use the default name that appears in the Unassigned UCM Object Name field. For example, Figure 98 on page 105 shows SCC-4-4-1 as the object name.

- 8. If you do not want to use the Neuron ID location label as the UCM name, clear the Assign Location Label checkbox.
- 9. In the Neuron IDs Unassigned to UCM Objects list, select the Neuron ID that you want associated with the UCM object displayed in the Unassigned UCM Object Name field.
- 10. Click the Assign button to give the Neuron ID to the unassigned UCM object and move it to the Neuron ID Assigned to UCM Objects list.
- 11. Repeat the process for the other UCM objects.
- 12. Click OK to return to the Devices tab. Notice that the UCMs in Selected Device list now have Neuron IDs assigned to them.
- 13. Click Save and close Site Configuration.

You can see communication established with your newly installed devices by looking at the UCM editors. (If power is lost to the BCU



Adding a New UCM to an Existing Comm5 Link (BMTX or High Capacity BMTW)

before communication is established, the devices will have to be reinstalled.)

Note:

Do not begin working on the link with the Rover service tool until you have verified that all devices are communicating with the BCU.

Adding a New UCM to an Existing Comm5 Link (BMTX or High Capacity BMTW)

To add a new UCM to an existing Comm5 link:

Note:

When you add a device to an existing link, you will not be able to preserve bindings between any of the new devices that are added. You will, however, be able to preserve existing bindings. If additional bindings are required, create them using the Rover service tool or Rover in Tracer Summit software, after the device has been added. Then remove the Rover service tool from the link and follow this procedure.

1. Start your installation at the new UCM. Configure and verify operation of the new device in stand-alone mode, without the communication link connected, using the Rover service tool.

If this device was previously installed, push the service pin for 15 seconds until the red service LED flashes.

- 2. Connect the UCM to the communication link on the BCU. Move termination resistors, if necessary.
- 3. At the PC workstation select Setup from the Tracer Summit main menu and open Site Configuration.
- 4. From the Devices tab, click the Create UCM button. Then follow the procedure for "Creating Comm5 UCMs Objects for BMTX or High Capacity BMTW" on page 95. If you created the UCMs during the initial installation, you can skip this step.

Note:

Unassigned UCMs show up in the UCMs list on the Devices tab with the default name and no Neuron ID assigned.

5. On the Devices tab, click the Assign Neuron ID button to open the Assign Neuron ID dialog box.

When the Assign Neuron ID dialog box opens, all command buttons are unavailable while the PC workstation determines whether Comm5 activity is occurring in the BCU. When there is Comm5 activ-



ity, a progress bar displays in the Comm5 Status group in the upper right-hand corner of the dialog box. When all activity ends, the command buttons are available again.

- 6. Click the Discover Neuron IDs button. In this phase of discovery, the BCU discovers devices on the link and builds a list that appears in the Neuron IDs Unassigned to UCM Objects. Confirmation that the BCU found devices also appears in the Comm5 Object and Neuron ID Summary on the left side of the dialog box.
- 7. From the UCM Type drop-down list in the Assign Neuron ID dialog box, select the appropriate UCM type.
- 8. From the Unassigned UCM Object Name drop-down list, select an Unassigned UCM Object Name to give an unassigned Neuron ID to.
- 9. If you do not want to use the Neuron ID location label as the UCM object name, clear the Assign Location Label checkbox.
- 10. In the Neuron IDs Unassigned to UCM Objects list, select the Neuron ID that you want associated with the UCM object displayed in the Unassigned UCM Object Name field.
- 11. Click the Assign button to give the Neuron ID to the unassigned UCM object and move it to the Neuron ID Assigned to UCM Objects list (see Figure 100).

Figure 100. Assign Neuron ID Dialog Box—Adding a New Comm5 UCM to an Existing Link

Assign Neuron ID	X					
Discovery Options	Comm5 Status					
Discover Neuron IDs Bindings Discovery Bindings Identify	Configuration Status: Normal					
Assign and Unassign UCM	Assign and Unassign UCM					
BCU: BCU-1	Comm5 Object and Neuron ID Summary					
Comm 5 Link: Link 4	Total UCM Objects Created: 6					
UCM Type: Space Comfort Controller (SCC) 💌	Total Neuron IDs found on link: 7					
Unassigned UCM Object Name: SCC-4-4-6	Unassigned Neuron IDs: 2					
Neuron ID: 00-07-98-27-35-00	Assigned Neuron IDs: 5					
Assign Location Label to UCM Object Name						
Neuron IDs Unassigned to UCM Objects	Neuron IDs Assigned to UCM Objects					
# Location Label Neuron ID Unit Type [Manufac	# UCM Name Location L Neuron ID Unit Type					
1 UV-1 ZN521 000798273500 SCC - Fan Coil [Trar	1 FCU-3 ZN-511 FCU-3 ZN 000672906100 SCC · Hea					
	Assign >> 2 FCU-2 ZN-511 FCU-2 ZN 000979674400 SCC - Gen Assign >> 3 FCU-1 ZN511 FCU-1 ZN 000411951800 SCC - Fan					
-	4 Boiler contro Boiler contr 00a176068200 SCC - Gen					
	5 TowerValve TowerVal 000974551600 SCC · Gen					
<	<< Unassign					
11	(Unassign All					
	OK Cancel Help					



Adding New UCMs to an Existing Comm5 Link (Standard Capacity BMTW)

- 12. Repeat the process if there are more UCM objects to assign.
- 13. Click OK to return to the Devices tab. Notice that the UCM objects in Selected Device list now have Neuron IDs assigned to them.
- 14. Click Save and close Site Configuration.

You can see communication established with your newly installed devices by looking at the UCM editors. (If power is lost to the BCU before communication is established, the devices will have to be reinstalled.)

Note:

Do not begin working on the link with the Rover service tool until you have verified that all devices are communicating with the BCU.

Adding New UCMs to an Existing Comm5 Link (Standard Capacity BMTW)

To add a new UCM to an existing Comm5 link:

Note:

When you add a device to an existing link, you will not be able to preserve bindings between any of the new devices that are added. You will, however, be able to preserve existing bindings. If additional bindings are required, create them using the Rover service tool or Rover in Tracer Summit software, after the device has been added. Then remove the Rover service tool from the link and follow this procedure.

1. Start your installation at the new Comm5 device. Configure and verify operation of the new device in stand-alone mode, without the communication link connected, using the Rover service tool.

If this device was previously installed, push the service pin for 15 seconds until the red service LED flashes.

- 2. Connect the UCM to the communication link on the BCU. Move termination resistors, if necessary.
- 3. When you have completed the installation of the new units on the link, push the service pin on all of the units. This broadcasts the Neuron ID of the new devices on the link. The BCU will discover only the new devices on the link.



- 4. At the PC workstation select Setup from the Tracer Summit main menu and open Site Configuration.
- 5. From the Devices tab, click the Create UCM button. Then follow the procedure for "Creating Comm5 UCMs Objects" on page 101. If you created the UCMs during the initial installation, you can skip this step.

Note:

Unassigned UCMs show up in the UCMs list on the Devices tab with the default name and no Neuron ID assigned.

6. On the Devices tab, click the Assign Neuron ID button to open the Assign Neuron ID dialog box.

When the Assign Neuron ID dialog box opens, all command buttons are unavailable while the PC workstation performs discovery of Comm5 devices. When there is Comm5 activity, a progress bar displays in the Comm5 Status group in the upper right-hand corner of the dialog box.

After the BCU checks for Comm5 activity, it conducts a phase 1 discovery. In phase 1, the BCU discovers devices on the link and builds a device list. You will not see a phase 2 discovery because you are not preserving any bindings.

Once discovery is complete the command buttons become available again and new devices will show up on the Neuron IDs Unassigned to UCM Objects list. If devices do not show up on the list, you can click Discover Neuron IDs to initiate a discovery.

- 7. From the UCM Type drop-down list in the Assign Neuron ID dialog box, select the appropriate UCM type.
- 8. From the Unassigned UCM Object Name drop-down list, select an Unassigned UCM Object Name to give an unassigned Neuron ID to.
- 9. If you do not want to use the Neuron ID location label as the UCM object name, clear the Assign Location Label checkbox.
- 10. In the Neuron IDs Unassigned to UCM Objects field, select the Neuron ID that you want associated with the UCM displayed in the Unassigned UCM Object Name field.
- 11. Click the Assign button to give the Neuron ID to the unassigned UCM object and move it to the Neuron ID Assigned to UCM Objects list (Figure 101 on page 111).



Adding New UCMs to an Existing Comm5 Link (Standard Capacity BMTW)

Figure 101.	Assign Neuron ID Dialog Box-Adding a New Comm5 UCM
to an Existi	ng Link

Assign Neuron ID			×
Discovery Options		Comm5 Status	
Discover Neuron IDs Discover Bindings	Discovery Details	Configuration Status: Normal	
Assign and Unassign UCM			
BCU:	BCU-1	Comm5 Object and Neuron ID Summary	
Comm 5 Link:	Link 4	Total UCM Objects Created: 6	
UCM Type:	Space Comfort Controller (SCC)	Total Neuron IDs found on link: 7	
Unassigned UCM Object Name:	SCC-4-4-6	Unassigned Neuron IDs: 2	
Neuron ID:	00-07-98-27-35-00	Assigned Neuron IDs: 5	
Assign Location Label to UC	M Object Name		
Neuron IDs Unassigned to UCM	Objects	Neuron IDs Assigned to UCM Objects	
# Location Label Neu	ron ID Unit Type [Manufac	# UCM Name Location L Neuron ID Unit	Гуре
1 UV-1 ZN521 0007	98273500 SCC - Fan Coll [Trar	1 FCU-3 ZN-511 FCU-3 ZN 000672906100 SCC	Hea
	Assign XX	2 FCU-2ZN-511 FCU-2ZN 000979674400 SCC	Gen
	Assign 77	3 FLU-1 ZN511 FLU-1 ZN 000411951800 SLU A Reiler centre Reiler centre 00:176069200 SCC	-Fan Gon
		5 Tower Valve Tower Val 000974551600 SCC	-Gen
	<< Unassig	sign	
	<< Unassign	an All 1	
		<u></u>	
•		•	▶
		OK Cancel Help	

- 12. Repeat the process if there are more UCM objects to assign.
- 13. Click OK to return to the Devices tab. Notice that the UCMs in Selected Device list now have Neuron IDs assigned to them.
- 14. Click Save and close Site Configuration.

You can see communication established with your newly installed devices by looking at the UCM editors. (If power is lost to the BCU before communication is established, the devices will have to be reinstalled.)

Note:

Do not begin working on the link with the Rover service tool until you have verified that all devices are communicating with the BCU.



Replacing a Comm5 UCM

The most obvious reason to replace a UCM is because of circuit board failure. But boards are also commonly replaced as a troubleshooting technique, to determine if the problem is with the controller.

Note:

When you add a device to an existing link, you will not be able to preserve bindings between any of the new devices that are added. You will, however, be able to preserve existing bindings. If additional bindings are required, create them using the Rover service tool or Rover in Tracer Summit software, after the device has been added.

Begin the process at the Tracer Summit PC workstation. First you need to remove the UCM that is being replaced from the assignments list in the BCU. This tells the BCU not to look for this UCM on its Comm5 link.

To replace a Comm5 UCM:

- 1. Select Setup from the Tracer Summit main menu, open Site Configuration and click the Devices tab.
- 2. On the Devices tab, click the Assign Neuron ID button. The Assign Neuron ID dialog box displays (see Figure 102).

Figure 102. Assign Neuron ID Dialog Box Showing Assigned UCMs

Assign Neuron ID		K
Discovery Options		Comm5 Status
Discover Neuron IDs Discover Bindings Discovery Details Identify		Configuration Status: Normal
Assign and Unassign UCM		
BCU: BCU-1		Comm5 Object and Neuron ID Summary
Comm 5 Link: Link 4		Total UCM Objects Created: 6
UCM Type: Space Comfort Controller (SCC)	·	Total Neuron IDs found on link: 7
Unassigned UCM Object Name:	·	Unassigned Neuron IDs: 1
Neuron ID: 00-00-00-00-00		Assigned Neuron IDs: 6
Assign Location Label to UCM Object Name		
Neuron IDs Unassigned to UCM Objects		Neuron IDs Assigned to UCM Objects
# Location Label Neuron ID Unit Type [Manufa		# UCM Name Location L Neuron ID Unit Type
		1 FCU-3 ZN-511 FCU-3 ZN 000672906100 SCC - Hea
	Assign	2 FCU-2ZN-511 FCU-2ZN 000979674400 SCC - Gen
	Assign 77	3 FCU-1ZN511 FCU-1ZN 000411951800 SCC - Fan
		4 Boller contro Boller contr UUa176066200 SLC - Gen E Tower Value Tower Val. 000974551000 SCC Gen.
	Level Income	5 Tower valve Tower val 000374551800 SCC - Gen
	<< Unassign	
	Least transfer All	
	<< Unassign All	
•	1	
		OK Cancel Help



- 3. From the Neuron IDs Assigned to UCM objects list, choose the UCM that is to be replaced.
- 4. Click the Unassign button. The UCM appears in the unassigned list (see Figure 103).

Figure 103. Assign Neuron ID Dialog Box Showing the UCM to be Replaced in the Unassigned List

Assign Neuron ID			
Discovery Options	Comm5 Status		
Discover Neuron IDs Bindings Discovery Identify	Configuration Status: Normal		
Assign and Unassign UCM			
BCU: BCU-1	Comm5 Object and Neuron ID Summary		
Comm 5 Link: Link 4	Total UCM Objects Created: 6		
UCM Type: Space Comfort Controller (SCC)	Total Neuron IDs found on link: 7		
Unassigned UCM Object Name: SCC-4-4-6	Unassigned Neuron IDs: 2		
Neuron ID: 00-07-98-27-35-00	Assigned Neuron IDs: 5		
Assign Location Label to UCM Object Name			
Neuron IDs Unassigned to UCM Objects	Neuron IDs Assigned to UCM Objects		
# Location Label Neuron ID Unit Type [Manufac	# UCM Name Location L Neuron ID Unit Type		
1 UV-1 ZN521 000798273500 SCC - Fan Coil [Tran	1 FCU-3ZN-511 FCU-3ZN 000672906100 SCC - Hea		
Assign >>	2 FCU-2ZN-511 FCU-2ZN 000979574400 SCC-Gen 3 FCU-1ZN511 FCU-1ZN 000411951800 SCC-Fan		
	4 Boiler contro Boiler contr 00a176068200 SCC - Gen		
	5 TowerValve TowerVal 000974551600 SCC - Gen		
<< Unassign			
Contraction All			
<< unassign Air			
	UK Lancel Help		

5. Click OK. Tracer Summit returns to the Devices tab.

On the Devices tab, the UCM object shows all zeros for the associated Neuron ID.

- 6. Save and close Site Configuration.
- 7. After the yellow communication LED stops flashing, disconnect the comm link from the UCM. Also, remove any other wiring.
- 8. Replace board, rewire inputs and outputs, and connect power. *Do not* connect your communication wires yet.
- 9. Connect with Rover and configure the UCM.
- 10. Remove Rover from the UCM.
 - If the UCM has been on another link, you will need to unconfigure its network configurations, go to step 11.
 - If this is a new UCM from the factory, go to step 12.
- 11. Hold the service pin down for at least 15 seconds. The red service LED flashes, signaling the UCM is unconfigured.
- 12. Reconnect the communication link to the UCM.
- 13. Return to the PC workstation to complete the replacement.

Comm5 Links



- 14. Re-open Site Configuration, Devices tab, and the Assign Neuron ID window.
- 15. Click the Discover Neuron IDs button. Discovery of Neuron IDs is initiated.
- 16. From the UCM Type drop-down list, select the UCM type. The unassigned UCM displays in the Unassigned UCMs field.
- 17. In the Neuron IDs Unassigned to UCM Objects list, select the new Neuron ID.
- 18. Click the Assign button to assign the Neuron ID to the unassigned UCM.
- 19. Click OK. Tracer Summit returns to the Devices tab.
- 20. In the UCMs in Selected Device window, verify that new Neuron ID is in the list.
- 21. Click Save and close Site Configuration.

You can see communication established with your newly installed devices by looking at the UCM editors. (If power is lost to the BCU before communication is established, the devices will have to be reinstalled.)

Note:

Do not begin working on the link with the Rover service tool until you have verified that all devices are communicating with the BCU.



Upgrading Comm5 Database Storage for a High Capacity BMTW BCU that has

Upgrading Comm5 Database Storage for a High Capacity BMTW BCU that has had its Software Image Upgraded to Version 16

A high capacity BMTW BCU must have its software image upgraded to version 16 in order to store its Comm5 database in non-volatile (Flash) memory rather than volatile memory (RAM).

You must create and save the Comm5 database to the non-volatile memory in your Version 16 BCU before you can add new devices to the existing link. Perform the upgrade first to keep Neuron ID assignments. Then install the new devices as instructed in "Adding a New UCM to an Existing Comm5 Link (BMTX or High Capacity BMTW)" on page 107.

Note:

This upgrade procedure does not apply to a standard capacity BMTW BCU, because it can store its Comm5 database only in RAM.

If the software image has been upgraded, you will be prompted to rediscover the Comm5 network Neuron IDs and bindings when you log on the PC Workstation (see Figure 104).

Figure 104. Prompt to Rediscover the Comm5 Network after Upgrading BCU Software Image



- 1. From the Setup menu, open Site Configuration and click the Devices tab.
- 2. On the Devices tab, click the Assign Neuron ID button to open the Assign Neuron ID dialog box.



When the Assign Neuron ID dialog box opens, all command buttons are unavailable while the PC workstation determines whether Comm5 activity is occurring in the BCU. When there is Comm5 activity, a progress bar displays in the Comm5 Status group in the upper right-hand corner of the dialog box. When all activity ends, the command buttons are available again.

Note:

Figure 105 shows the Neuron IDs Assigned to UCM Objects list populated. The location label column is blank because the BCU has not discovered the actual devices on the link yet and cannot associate the correct location label with the Neuron ID and UCM object name. After the discovery of Neuron IDs and bindings is initiated, the appropriate Neuron ID location labels will appear.



	Assign Neuron ID				×
	Discovery Options			Comm5 Status	
	Discover Discover Neuron IDs Bindings	Discovery Details		Configuration Status: Normai	
Step 3 🦯					
	Assign and Unassign UCM BCU:	BCU 17		Course Oblication of Names ID Course	
	Comm 5 Link:	Link 4		Total UCM Objects Created:	7
	LICM Tupe:	Contrast Constant Constanting (CCC)		Total Neuron IDe found on link:	
		space comron controller (SCC)		Total Neuron 10's round on link.	0
	Unassigned ULM Ubject Name	SCC-1-4-6		Unassigned Neuron IDs:	0
	Neuron ID:	00-00-00-00-00		Assigned Neuron IDs:	6
	Assign Location Label to U	CM Object Name			
	Neuron IDs Unassigned to UCN	1 Objects		Neuron IDs Assigned to UCM Objects	
	# Location Label Neu	ıron ID Unit Type [Manufac		# UCM Name Location L 1 FCU-2 ZN-511	Neuron ID Unit Type
			Assign >>	2 FCU-1 ZN511	000411951800
				4 UV-1 ZN521	000798273500
			<< Unassign	5 Tower Valve	000974551600
			22 Unassian All		
			<< undssign Air		
		>		•	
				ОК	Candel Help
1					Note that no
					location labels
					are accided

- 3. Click the Discover Neuron IDs button. In this phase of discovery, the BCU discovers devices on the link and builds a list of Neuron IDs Unassigned to UCM Objects. Confirmation that the BCU found devices also appears in the Comm5 Object and Neuron ID Summary on the left side of the dialog box (Figure 98 on page 105).
- 4. Click the Discover Bindings button, *even if you have no bindings on the site*. In this phase of discovery, the BCU will find old BCU bindings, and re-establish assignments to Neuron IDs found on the link.



Upgrading Comm5 Database Storage for a High Capacity BMTW BCU that has

Notice that the location labels now appear in the Neuron IDs Assigned to UCM Objects list (see Figure 106).

	Assign Neuron ID				×
	Discovery Options			Comm5 Status	Detected
	Discover Discover Neuron IDs Bindings	Discovery Details		beo replacement of opgrade i	Delected
	Assign and Unassign UCM -				
Step 4	BCU:	BCU-1		Comm5 Object and Neuron ID St	ummary
	Comm 5 Link:	Link 4		Total UCM Objects Created:	9
	UCM Type:	Space Comfort Controller (SCC) 💌		Total Neuron IDs found on link:	5
	Unassigned UCM Object Na	me:		Unassigned Neuron IDs:	0
	Neuron ID:	00-00-00-00-00		Assigned Neuron IDs:	7
	Assign Location Label to	UCM Object Name			
	Neuron IDs Unassigned to UCM Objects		Neuron IDs Assigned to UCM Obje	cts	
	# Location Label I	Neuron ID Unit Type [Manufac		# UCM Name Location L	Neuron ID Unit Type
			Assim	2 FCU-1 ZN511 FCU-1 ZN	r 00a176068200 SCC-Gen 000411951800 SCC-Fan
			- Assign 77	3 UV-12N521 UV-12N5	21 000798273500 SCC-Fan
			<< Unassign		
			ZZ Elpaceign All		
			CC OTTOOLS IT IT		\backslash
				<u> </u>	
				OK (Cancel Help
		S	Step 7		Note that location
			1-		labels are now
					assigned

Figure 106. Assign Neuron ID Dialog Box-After Discovery of Devices

The Discovery Details window will automatically appear after discovery is complete (see Figure 107). To view the window again after closing it, click the Discovery Details button.

If errors exist, detailed information about them will appear in the Discovery Details window.

Di	iscove	ery Details			×
	Discov	ery Status: Discovery complete	d without errors		
	#	Location Label	Neuron ID	Unit Type [Manufacturer]	Error Type
	1	MP581-DAC	00a214828900	MPC [Trane]	
	2	ZN-511 - 2 on desk	000979674400	SCC - Generic [Trane]	
	3	ZN511 - 1 on wall	000411951800	SCC - Fan Coil [Trane]	
	4	MP501 - 1 on wall	00a176068200	SCC - Generic [Trane]	
	5	ZN521 on wall	000798273500	SCC - Fan Coil [Trane]	
	6	MP501 - 2 on desk	000974551600	SCC - Generic [Trane]	
	•				Þ
				Save to File	Help

Figure 107. Discovery Details Dialog Box—Without Errors



5. Click Save to File to save the report to a file for future reference, or click Close to exit the Discover Details window and return to the Assign Neuron ID dialog box.

IMPORTANT

If errors exist and you click either the Cancel or the Discover Neuron IDs button, the Comm5 database will be reset and all Neuron ID assignments and custom bindings will be lost. If you want to continue with the upgrade, you will have to reassign all Neuron IDs and recreate custom bindings. If you want help resolving this error, do not click either button. Contact technical support and provide them with the error message.

- 6. If errors do not exist, click OK to install the devices on the BCU.
- 7. Click Save and close Site Configuration.

You can see communication established with your newly installed devices by looking at the UCM editors. (If power is lost to the BCU before communication is established, the devices will have to be reinstalled.)

Note:

Do not begin working on the link with the Rover service tool until you have verified that all devices are communicating with the BCU.

Replacing an Existing BCU (Standard or High Capacity BMTW) with a BMTX BCU

For cases in which a BMTS or BMTW are replaced by a BMTX, you must create a Comm5 database in the BMTX. To do this, use the procedure given for "Upgrading Comm5 Database Storage for a High Capacity BMTW BCU that has had its Software Image Upgraded to Version 16" on page 115.



Chapter 8 Defining Tracer 100 or Tracker Sites

Tracer Summit communicates with Tracer 100 or Tracker panels and allows you to create sites with these legacy products. When you install the Tracer 100/Tracker Communication package, you can:

- Define phone modem or hardwired connection parameters for Tracker and Tracer 100 panels
- Define single- and multiple-panel Tracer 100 sites
- Type site names up to 32 characters long
- Treat a Tracer 100 and Tracker panel like a site device rather than as a site

Note:

Tracer Summit will connect to Tracer 100 sites Version 14.4 or higher and with Tracker sites Version 5.0 or higher. If you have Tracer 100 or Tracker sites that predate these versions, upgrade them with current software. Then you can communicate with them using Tracer Summit Version 13 or higher.

You can communicate with Tracer 100 panels, whether they are configured as unit-to-unit or not. For more information about unit-to-unit communications, see Section 8 of the *Tracer 100 Installation* guide (EMTB-IN-12).



Creating Tracer 100 or Tracker Sites

Use the following procedure to create a Tracer 100 or Tracker site and to define how the Tracer Summit workstation connects to the remote unit.

To create Tracer 100 or Tracker sites:

- 1. From the Setup menu, select Site Configuration. The Select Site dialog box appears (see Figure 112 on page 124).
- 2. Click New. The Site Creation Wizard dialog box displays (see Figure 108).

Note:

If the database is empty, the Restore button appears as an option in the Select Action group. For more information on restoring remote sites, see "Restoring a Site from the Site Creation Wizard" on page 53.

- 3. Select a site type:
 - For Tracer 100 sites, select the Tracer 100 Series button
 - For Tracker sites, select the Tracker button
- 4. Type a name for the site in the Site Name field.

Figure 108. Site Creation Wizard

Site Creation Wizard	x
Select a Site Tracer Summit BCU Tracer 100 Series Tracker Select an Action Create Upload	Site Name: BAX102
< <u>B</u> ack	Next > Cancel Help

5. Click Next. The Site Connection Wizard screen appears (see Figure 109 on page 121).


6. Click the Modem or Hardwired button for the connection type.

The Tracer Summit workstation must use a serial connection to communicate with a Tracer 100 or Tracker site. You can make a serial connection in two ways: hardwired or modem.

- Hardwired connections are made using a 25-foot (or less) EIA-232 cable that connects the workstation to the Tracer 100 or Tracker panel.
- Modem connections are made using modems and an analog phone line. Hardwired and modem connections to Tracer 100 and Tracker panels use the BMN protocol.

To communicate with Tracer 100 and Tracker panels, you must define a workstation modem object. If this object is not defined in the workstation database, you must create one before you can connect to a Tracer 100 or Tracker site. For more information about creating workstation modem objects, see "Configuring a Workstation Modem for Tracer 100 or Tracker Sites" on page 156.

Figure	109.	Site	Connection	Wizard
--------	------	------	------------	--------

Site Connection Wizard			×
Site: BAX102			
C Hardwired			
Modem			
< <u>B</u> ack	Finish	Cancel	Help

7. Click Finish. The Tracer 100 or Tracker Configuration editor appears (see Figure 113 on page 125).





Copying a Tracer 100 or Tracker Site

If you have a large number of sites that are similar or identical to each other, Copy Site can eliminate much of the repetitive work involved in configuring sites with more similarities than differences. Copy Site reproduces objects from an original Tracer 100 or Tracker site and transfers them to a new site of the same type.

Copy Site is available with all add-on packages (Tracer 100/Tracker Communication, Building Management, and Enterprise Management).

Copy Site does not copy workstation or global objects from the original site. This means that the new site will have the same information as the original from which it was copied but not the following items:

- Workstation modem objects
- Message forwarding objects
- Report text files (*.rpt files)
- Tracer 100 objects (calculated analog, calculated binary, normal schedules, exception schedules, and holidays)

Copying Tracer 100 or Tracker Sites

1. From the Tools menu, select Copy Site. The Copy Site dialog box appears (see Figure 110).

Figure 110. Copy Site Dialog Box

Copy Site	×
Name of New Site:	BAX104
Site Type to Copy:	Tracer 100
Site to Copy:	BAX101
г	Copy Graphics 🔲 Copy Reports
OK	Cancel Help

2. Type the name of the new site in the Name of New Site field.

The new site name must be unique, one that does not exist in the database.

3. Select Tracer 100 or Tracker from the Site Type to Copy list.

The Copy Graphics and Copy Reports check boxes are unavailable because these items do not apply to Tracer 100 or Tracker sites.

4. Click OK. The Copy Site: Rename Panels dialog box displays (see Figure 111 on page 123).

Note:

For Tracker sites, the New Panel Name list has one panel to rename. Tracer 100 sites can have up to eight panels to rename.



5. Type new names for the panel(s) of the new site in the New Panel Name field.

Figure 111. Copy Site: Rename Panels Dialog Box

Copy Site: Rename Panels						
	Old Panel Name	New Panel Name				
	SUMMIT	oasis1				
	SUMMIT2	oasis2				
	SUMMIT3	oasis3				
	OK Ca	ncel Help				

Note:

New panel names must be unique. They cannot duplicate others in the original site or be panel names that are in other Tracer 100 and Tracker sites.

6. Click OK.

Tracer Summit copies the database from the original site to the new site. The navigation tree displays the new site node, as well as any macros associated with the original site.



Selecting a Site to Configure

1. From the Setup menu, select Site Configuration. The Select Site dialog box appears (see Figure 112).

Figure 112. Select Site Dialog Box

S	elect Site	X
	Name ISAX101 BAX102 Powers SI	Type Tracer 100 Series Tracer 100 Series Tracer Summit BCU Tracer Summit BCU
	OK <u>N</u> ew (Cancel <u>H</u> elp

- 2. Select the desired site you wish to edit.
- 3. Click OK to display the site configuration editor for the selected site (see Figure 113 on page 125).

Configuring Tracer 100 or Tracker Panels

After you complete configuring the Tracer 100 or Tracker panel using the Site Creation and Connection Wizards, use the Tracer 100 or Tracker Site Configuration editors to establish the identity of the Tracer 100 or Tracker site.

If your workstation will connect with the Tracer 100 or Tracker panel using a modem, you must define telephone numbers for the site, as well as configure a remote unit. If your workstation will connect with the panel using a hardwired connection, you only define the Tracer 100 or Tracker panel as a remote unit.

Entering Phone Numbers

Use the following procedure to enter the phone number that your workstation will call to connect to the Tracer 100 or Tracker panel. You can also configure a phone number for Tracer 100 sites that call out to a workstation to send alarms, for example.

To enter phone numbers:

1. When creating a new Tracer 100 or Tracker site, the Setup screen is automatically displayed after completing the Site Connection Wizard (see Figure 113 and Figure 116 on page 127).



Setup	Devices	Communications
Site N	lame: BA	<u>\$101</u>
- Mas	ter To Ren	note Phone Number
Pho	ne Numbei	4259
	Use Dialing	j Prefix
	Use Calling	Card Number
Remo	te To Mast	er Phone Number:

Figure 113. Site Configuration Editor for a Tracer 100 Series Site Screen

- 2. In the Master to Remote Phone Number field, type the telephone number of the site.
- 3. If required, select the Use Dialing Prefix or Use Calling Card Number check box.

When you select these check boxes, Tracer Summit uses the prefix or calling card number you entered when you set up the workstation modem (see "Setting Up the Phone Books" on page 163).

4. **Tracer 100 sites only**: If the Tracer 100 panel will dial out to the Tracer Summit workstation, type the Remote to Master Phone Number using no more than 24 characters.

The actual number dialed can consist of the numbers 0 through 9, the # symbol, the letters w, p, and t, a single quote (for a two-second pause), spaces, and hyphens.

Note:

The workstation uploads the remote to master phone number from the Tracer 100 panel the first time that the Tracer 100 panel is scanned, either as part of normal processing or by Task Manager (see Chapter 15, "Using the Task Manager"). Subsequent scans download the number to the panel.

Creating a Remote Unit for Tracer 100 Sites

Use the following procedure to configure a single Tracer 100 panel that does not have unit-to-unit communication capabilities. A Tracer 100 panel that is not a unit-to-unit Tracer can have only one remote unit defined for it.

To create a Tracer 100 remote unit:

1. From the Tracer 100 Site Configuration editor, click the Devices tab (see Figure 114).



	Setup	Devices	Communications]	
	Rem	note Units:			
L		Name	Unit #	:	Unit Type
L					
L					
L					
L					
L	Ĺ		Create Remote L	Init	
L			Edit Remote Ur	nit	
L			Delete Remote	Unit	

Figure 114. Devices Screen

2. Click the Create Remote Unit button. The Create New Device dialog box appears (see Figure 115 on page 126).

Figure 115. Create New Device Dialog Box

Create New Device	×
Remote Unit Name: SUMMIT3	
🗖 🗖 Unit-to-Unit Tracer	
Unit Number: 1	
Remote Unit Password For System Access: 3333	
OK Cancel Help	
OK Cancel Help	

3. Type the name of the Tracer 100 panel. This is the same name as you would see in BMN's Remote Unit Setup or in the file name of the panel backup.

Note:

Since this is not a unit-to-unit, or COP, Tracer 100, leave the Unit-to-Unit checkbox cleared. "Creating a Tracer 100 COP" on page 128 explains how to create a unit-to-unit Tracer 100.

4. Type the unit password, if any, that is required to access the Tracer 100 panel.

The password you type must be the same as the one in the security menu of the Tracer 100 panel.





5. Click OK. The Devices screen appears with the new device displayed in the Remote Units list.

Note:

The Unit Type remains unknown until the Tracer 100 panel is scanned as part of normal processing or by the Task Manager (see Chapter 15, "Using the Task Manager").

6. Click Save to store the site in the database.

Configuring a Tracker Panel

When you configure a Tracker using the Tracker Site Configuration editor, there is no Devices tab. Instead, you identify Tracker panels on the Setup tab.

To identify a Tracker panel:

1. From the Tracker Site Configuration editor, click the Setup tab (see Figure 116).

Figure 116. Tracker Setup Screen

Setup	Communications
Site N	Name: TRK101
⊢ Mas	ster To Remote Phone Number
Pho	one Number:
	Use Dialing Prefix
	Use Calling Card Number
Remo	ote Unit Name:

- 2. In the Remote Unit Name field, type the name for the Tracker panel.
- 3. Click Save to store the Tracker site definition in the database.



Creating Tracer 100 Sites with Multiple Panels

To create a site with multiple panels, each panel must have a unit-to-unit communications logic board or card installed. In addition, you must define a Tracer 100 Communications Processor (COP) panel with a logic board address of 1. You cannot add a Tracer 100 panel to an existing site unless the site already has the Tracer 100 COP unit defined for it.

Note:

All Tracer 100 panels linked to the Tracer 100 COP must have the same software version.

For more information about setting up unit-to-unit Tracer 100 panels, refer to the *Tracer 100 Installation* guide software version 15 (EMTB-IN-12) and /or the *Installation Guide for Tracer 100i, Tracer L, and Tracer Chiller Plant Manager* (EMTF-IN-6).

Note:

Building Management Network (BMN) ends connections when it detects mismatched site configurations, but Tracer Summit does not. BMN displays messages such as: "A COP answered, but is not edited as one," or "Remote edited as a COP, but no COP found."

These messages do not appear in Tracer Summit. Therefore, if you do not define additional remote panels when you should, Tracer Summit will not allow you to connect to them in terminal emulation, nor will Tracer Summit scan for them.

In the following paragraphs, the Tracer 100 COP is simply referred to as the COP.

Creating a Tracer 100 COP

When you add several Tracer 100 panels to a single Tracer Summit site, unit 1 is the Tracer 100 COP. A COP is the lead panel in a unit-to-unit site configuration. Communications between panels that are controlled by the COP occur at 1200 baud.

To add a Tracer 100 COP panel:

- 1. Create a site (see "Creating Tracer 100 or Tracker Sites" on page 120) and repeat the procedure described in "Entering Phone Numbers" on page 124.
- 2. From the Tracer 100 Site Configuration editor, click the Devices tab.
- 3. Click the Create Remote Unit button. The Create New Device dialog box appears (see Figure 115 on page 126).



- 4. In the Remote Unit Name field, type the name of the Tracer 100 panel. This is the same name as you would see in BMN Remote Unit Setup or in the file name of the panel backup.
- 5. Click the Unit-to-Unit Tracer check box. The Unit Number field displays 1, which is the default number.

A COP must have a unit number of 1 in Tracer Summit, as well as on the logic board DIP switch block.

6. In the Remote Unit Password for System Access field, type the password of the unit.

The password you type must be the same as the one given in the security menu of the panel.

7. Click OK. The Devices screen appears. The COP appears in the Remote Units group (see Figure 117 on page 130).

Note:

The Unit Type remains unknown until the Tracer 100 panel is scanned as part of normal processing or by the Task Manager (see Chapter 15, "Using the Task Manager").

8. If you are adding remote units to the COP, perform the procedure in "Adding Tracer 100 Panels to a Multi-Panel Site" on page 130. Otherwise, click Save.

Note:

When you click Save, the remote device is permanently saved in the database. This means that you cannot re-edit the unit number of the remote unit.



Adding Tracer 100 Panels to a Multi-Panel Site

- 1. Repeat steps 2-4 in "Creating a Tracer 100 COP" on page 128.
- 2. In the Unit Number field, if the default value in the Unit Number field is not the address of the remote you are adding, select the correct value.

This is the unit number as it is set in the DIP switch block on the logic board. For each Tracer 100 panel that you add, the unit number increments by one. Since there can only be one Tracer 100 COP per site, any additional panels that you add must have unit numbers other than 1.

3. In the Remote Unit Password for System access field, type the password that is used to access the Tracer 100 panel.

The password you type must be the same as the one in the security menu of the panel.

4. Click OK. The Devices screen appears with the unit displayed in the Remote Units group (see Figure 117).

Figure 117. Devices Screen Remote Units Group

Re	emote Units:			
	Name	Unit #	Unit Type	
	SUMMIT SUMMIT2 SUMMIT3	1 2 3	Unknown Unknown Unknown	
ĺ	Create Re	emote Unit		
	Edit Rer	note Unit		
	Delete F	lemote Unit		

Note:

The Unit Type remains unknown until the Tracer 100 panel is scanned as part of normal processing or by the Task Manager (see Chapter 15, "Using the Task Manager").

5. Click Save. The new remotes are saved to the database.

Note:

When you click Save, the remote devices are permanently saved in the database. This means that you cannot re-edit the unit numbers of the remote units.



Modifying Tracer 100 or Tracker Sites

Use the following procedures to edit phone numbers in the remote, rename the remote, configure a remote with or without unit-to-unit communications, edit the remote password, or delete a remote.

Changing the Master to Remote Phone Number

- 1. From the Tracer 100 or Tracker Site Configuration editor, click the Setup tab.
- 2. Change the number in the Phone Number field as required.
- 3. Click the Use Dialing Prefix/Use Calling Card Number check box(es) as necessary.
- 4. Click Save.

Changing the Remote to Master Phone Number (Tracer 100 Sites Only)

• From the Tracer 100 Site Configuration editor on the Setup tab, select and type over the existing phone number and click Save.

Renaming a Tracer 100 Remote Unit

When you rename a panel, you must first rename it in Tracer Summit. Once you rename the panel, connect to it to have Tracer Summit change the name at the panel.

To rename a remote unit:

- 1. From the Tracer 100 Site Configuration editor, click the Devices tab.
- 2. Select the panel that you want to rename.
- 3. Click the Edit Remote Unit button. The Edit Device dialog box appears (see Figure 118).

Figure 118. Edit Device Dialog Box

Edit Device	×
Remote Unit Name: REGION1	
Remote Unit Password For System Access: 1111	
OK Cancel Help	



- 4. Rename the panel using up to 8 characters.
- 5. Click OK to save the change to the database.
- 6. Connect to the site.

Once you connect, Tracer Summit displays a dialog box informing you that the connected panel does not have the same name as the one in the workstation database. The dialog box also asks whether you want to rename the panel.

7. In the dialog box, click OK to rename the panel.

Making a Tracer 100 Panel Unit-to-Unit

In the Tracer Summit software, you make a Tracer 100 panel unit-to-unit when the panel has a logic board installed with unit-to-unit communication capability. In most cases, this situation will only occur when you have changed the logic board or installed a unit-to-unit communication card. For more information on setting up a panel to communicate as a unit-tounit device, see "Creating Tracer 100 Sites with Multiple Panels" on page 128.

To make a Tracer 100 panel unit-to-unit:

- 1. From the Tracer 100 Site Configuration editor, click the Devices tab. The remote unit already assigned to the site displays in the Remote Units group.
- 2. Select the panel and click the Edit Remote Unit button. The Edit Remote Unit dialog box appears.
- 3. Click the Unit-to-Unit Tracer check box.
- 4. Click OK. The Devices screen appears, with modified device displayed in the Remote Units list.
- 5. Click Save to store the site in the database.

Removing Unit-to-Unit Capability

Use the following procedure when the panel at the site does not have unit-to-unit capability. This occurs when you have a panel that does not have a logic board with unit-to-unit communication capability.

To remove unit to-unit capability:

- 1. From the Tracer 100 Site Configuration editor, click the Devices tab. The sole remote unit already assigned to the site displays in the Remote Units group.
- 2. Click the Edit Remote Unit button. The Edit Remote Unit dialog box appears.
- 3. Click the Unit-to-Unit Tracer check box to remove the check mark.
- 4. Click OK.



Editing the Unit Number of a Remote Unit-to-Unit Tracer Panel

You can only edit the unit number of a remote unit before you save it to the database. If you have already saved the panel and you want to edit its unit number, use the Delete Object utility to delete the remote unit (see "Deleting Objects" on page 652). Once the remote unit is deleted, you can then add the remote unit again, giving the panel the unit number that is set on the logic board DIP switch block.

To edit the unit number of a remote unit:

- 1. From the Tracer 100 Site Configuration editor, click the Devices tab.
- 2. Click the Edit Remote Unit button. The Edit Remote Unit dialog box appears.
- 3. In the Unit Number field, select the new unit number of the remote.
- 4. Click Save.

Editing the Password of a Remote Unit

Use the following procedure if you have changed the password of a remote unit at the panel and to change the password in Tracer Summit, or if you entered the password incorrectly when you created the site.

To edit the password:

- 1. From the Tracer 100 Site Configuration editor, click the Devices tab.
- 2. Click the Edit Remote Unit button. The Edit Remote Unit dialog box appears.
- 3. Click Remote Unit Password for System Access and type the new password.
- 4. Click OK.
- 5. Click Save to store the edited password to the database.

Deleting a Tracer 100 Remote Unit

You can only delete a remote unit from within the Tracer 100 Site Configuration editor if you have not saved the remote unit in the database. If you have saved the remote unit in the database, then use the Delete Object utility to delete the remote unit (see "Deleting Objects" on page 652).

Note:

A site must have at least one remote defined for it. If you start with only one remote, you cannot delete the remote without also deleting the site.



Defining Tracer 100 or Tracker Sites



Chapter 9

Setting Up Security—Tracer Summit System

The Tracer Summit system provides sophisticated security to protect against unauthorized access. The operator enters a user name and password to log on to the system.

Your security supervisor assigns passwords and access levels for each operator. The security supervisor also controls which operators have access to functions, applications, and objects within the Tracer Summit system. For most elements of the system, the supervisor can assign three levels of access:

- No access (the operator cannot see the information)
- View only (information can be seen, but not changed)
- View and edit (information can be seen and changed)

You can define which classes have access to an object when you create it.

Setting Up a Security Supervisor

Tracer Summit includes a pre-defined user (User Name: *tracer*; password: *summit*) that allows you to log on the system before you define a security supervisor. To set up security access for a security supervisor, follow the steps for setting up a new user (see "Setting Up a New User" on page 136). Be sure to select Security Supervisor in the User Info screen options to allow the security supervisor access to the Security editor.

After you define security access for the security supervisor, delete the *tracer* user name to prevent unauthorized access.

Note:

The Tracer Summit system allows you to delete the *tracer* user name only after a security supervisor has been created on the system and that supervisor has logged on.



Setting Up a New User

You must set up a user profile for each operator who will use Tracer Summit.

The steps to set up an operator are:

- 1. Enter user information.
- 2. Assign functions the operator may perform.
- 3. Assign applications the operator may view only or view/edit.
- 4. Assign objects to which the operator has access.
- 5. Assign the security classes the operator may view only and view/edit.

Tracer Summit has four operator levels with predefined security access (see Table 4).

Table 4.	Predefined	Security	Access for	Operator	Levels
----------	------------	----------	------------	----------	--------

Operator Level	Example Operators	Security Access
Level 1	Occasional operators, such as security guards	 View graphics and expanded messages. Acknowledge alarms. Make timed override request.
Level 2	Daily operators	 Same as level 1, plus: View chiller plant control, chiller plant status, reports, schedules, and trends. Edit chiller plant control status and schedules. Make timed override request.
Level 3	Advanced daily operators	 Same as level 2, plus: Create schedules. Edit chiller plant control, expanded messages, graphics, reports, and trends. Make timed override request.
Level 4	System supervisor	Complete access to everything.

When setting up a new user, you can choose from the predefined profiles, or you can create a custom profile. You can also copy the profile from a previously defined user.

Note:

Based on the profile you select when you create a user, access may be pre-selected for some objects. If you are creating a custom profile, no access is pre-selected.



Entering User Information

1. From the Setup menu, select Security. The Select Security dialog box displays (see Figure 119).



Se	ect Security	×
	lame hris ackie aria obody Logged On at hawn tanley ystem Supervisor anol RACER	Ĩ
	OK New Cancel Help	

2. Click New. The User Setup dialog box displays (see Figure 120).

Figure 120. User Setup Dialog Box

User Setup	×
User Name:	ОК
r Selected Profile:	Cancel
Operator Level 1 Operator Level 2 Operator Level 3 Operator Level 4	<u>C</u> opy From

3. Enter a name of 1–8 alphanumeric characters in the User Name field.



Setting Up Security – Tracer Summit System

- 4. Select an option:
 - If you wish to use a predefined operator level profile or customize a predefined operator level profile for security access, click the name in the Selected Profile box, then click OK to display the Security editor User Info screen (see Figure 122 on page 139). Proceed to step 9.
 - If you wish to copy the operator level profile of an existing user, click Copy From to display the Copy From dialog box (see Figure 121). Proceed to step 5.



Copy From	×
Chris Jackie Maria Nobody Logged On Pat Shawn Stanley System Supervisor Tanol TRACER	Cancel

- 5. Click the user name you wish to copy.
- 6. Click OK to display the User Setup dialog box.
- 7. Click OK to display the Security editor User Info screen (see Figure 122 on page 139).



User Info	Functions	Applications	Objects	Classe
User Infor User Nam First Name Last Name Job Title:	mation e: TRAC x e:	ER	Middle:	
Password:	mmit Workst	ation Security-	ow Passw	ord
Options: Se D Ma Di: V Au	curity Super atch Upper & sconnect Re ito-Log Off	visor & Lower Case emote Connecti 60 Minute	on at Log C es	Dff

Figure 122. Security Editor User Info Screen

- 8. At the Security editor User Info screen, enter a First name in the First Name field (1–28 characters) and a Last Name in the Last Name field (1–29 characters). Entries in the Middle field (0–4 characters) and Job Title field (0–30 characters) are optional.
- 9. Enter a password in the Password field. Use up to eight characters. The password displays as asterisks (*).

Note:

- When setting up multiple sites, an operator can be automatically logged on to all sites. For this to work, you need to enter the same user name and password for all sites that the user needs access to.
- When creating the password for the first time, click the Show Password check box to verify the password entry. After checking for mistakes, deselect Show Password to convert the password back to asterisks (*).





- 10. In the Options fields, click the following to select or deselect the option:
 - Security Supervisor
 - Match Upper & Lower Case
 - Automatic Remote Connect
 - Disconnect Remote Connection at Log Off
 - Auto-Log Off

Note:

We recommend you select Auto-Log Off. If a user leaves a PC Workstation unattended, Tracer Summit logs the user off automatically after the number of minutes specified in the Minutes field.

11. If you select Auto-Log Off, in the Minutes field type in the number of minutes of non-activity before the system logs off the user.

Assigning Access to Functions

Click the Functions tab from the Security editor to display the Functions screen (see Figure 123).

Figure 123. Security Editor Functions Screen

	Function	Name	Access
Allow Mir	Max edit in Sim	plified Analog Override	<u> </u>
Allow Mu	Itiple Graphic Wi	ndows	<u> </u>
Backup (S	Site, Graphics, R	eports)	<u> </u>
BCU Rese	et/Restore		<u> </u>
Change V	alues From Gra	phics	<u> </u>
Customiz	<u> </u>		
Delete Ob	jects		<u> </u>
Edit Navigation Tree			<u> </u>
Exit Tracer Summit			
Modify Normal Schedule			N N
Modify Sy	Modify System Options		
Objects a	nd Properties		N N
Restore (Site, Graphics, F	Reports)	N N
Rover (Co	N		
Rover (Full Access)			
Timed Ov			
User - Ar	y Priority Level I	Point Control	<u> </u>

1. Click the checkbox in the Access column to grant or deny access for each function.

- 2. Click the check box in the View Only column or in the View/Edit column for each application to grant or deny access to that application.
- 3. To set up Simplified Overrides, check the following functions:
 - Allow Min/Max edit Simplified Override
 - Change Values from Graphics



• User priority level

Note:

For further details on setting up simplified overrides, see "Setting Up the Simplified Override Dialog Box" on page 172.

4. In the Select Default Priority for Simplified Override Dialog dropdown, select a user default priority level.

Note:

The highest user priority level you select will determine the highest user level default override setting available.

To set up the system to perform overrides from a graphic, see "Setting Up the Simplified Override Dialog Box" on page 172

Assigning Access to Applications

1. Click the Applications tab from the Security editor to display the Applications screen (see Figure 124).

User Info	Functions	Applications	Objects	Classes				
	Арр	lication			View Only	Vie	w/Edit	
Absorptic	on Chiller (UC	:P2)			V			
Analog In	nput						V	
Analog C	output						V	
Area Cor	ntrol						V	
BCU I/O N	vlodule						V	
Binary In	put						V	
Binary O	utput						V	
Calculation					V			
Cell Phon	e/Pager						V	
CenTraV	ac Chiller (U	CP1)					V	
Centrifug	al Chiller (UC	P2)					V	
Chiller (L	onTalk)						V	
Chiller Pla	ant Control						V	
Chiller Plant Control Status					N			
Commercial Self Contained (CSC)					N			
Custom Programming Language (CPL)						N		
Discharge Air Controller (DAC)						N		
Event Log	g						2	
Generic LonTalk Device (GLD)					Г		<u> </u>	

Figure 124. Security Editor Applications Screen

2. Click the check box in the View Only column or in the View/Edit column for each application to grant or deny access to that application.



Assigning Access to Objects

1. Click the Objects tab from the Security editor to display the Objects screen (see Figure 125).

Figure 125.	Security	Editor	Objects	Screen
-------------	----------	--------	---------	--------

User Info	Functions	Applications	Object	s Classes	1
	Object	Туре		Access	
Absorptio	n Chiller (UCP	2)		.	
Analog In	out				1
Analog Ou	utput			2	1
Analog Va	alue		2	1	
Area]	
BCU I/O M	lodule]	
Binary Inp	ut		V]	
Binary Ou	tput		V]	
Binary Va	lue		V]	
Calculatio	n		V]	
Calendar					
CenTraVa	ac Chiller (UCF				
Centrifuga	al Chiller (UCP				
Chiller Pla	nt Control			V	
Commerci	al Self Contai	ned (CSC)			-

2. Click the check box in the Access column to grant or deny access for each object.

Assigning Access to Security Classes

1. Click the Classes tab from the Security editor to display the Classes screen (see Figure 126).

Figure 126. Security Editor Classes Scree	n
---	---

User Info	Functions	Applications	Objects	Classes
	Security Class	Name	Read Only	Read/Write
	System Oper:	ator		
	Day Operat	or		
	Night Operat	tor		
	Security			
	Chiller Plan	t		
	Administrati	on		
	Manufacturi	ng		
	ICS Universi	ty		
	Engineerin	g		
	Application	s		
	Marketing			
	Finance			
	Training			
	Product Commun.			
	Human Resources			
	Production			

2. Click the check box in the Read Only column or in the Read/Write column for each class to grant or deny access to that class.



Modifying a User Setup

- 1. From the Setup menu, select Security. The Select Security dialog box displays.
- 2. Click the name of the user you wish to modify.
- 3. Click OK to display the Security editor.
- 4. Use the Security editor screens to select user options and to modify access to functions, applications, objects, and classes.

Defining Access for Users Not Logged On

When no user is logged on the Tracer Summit system, the system operates on a predefined user profile called Nobody Logged On. The default settings for Nobody Logged On deny the operator access to all functions, applications, and objects. There may be instances where you want operators to have limited access to general information, such as a main floor plan or a graphic display screen, without logging on to a site. You can do so by modifying the Nobody Logged On user profile.

Note:

Do not remove or change the name of the Nobody Logged On user. The system requires this user name to operate properly.

To modify the nobody logged on user profile:

1. From the Setup menu, select Security. The Select Security dialog box displays (see Figure 127).

Select Security			×
Name Chris Jackie Matia Nobody Logged (Pat Shawn Stanley System Superviso Tanol TRACER			
OK	New	Cancel	Help

Figure 127. Seclect Security Dilaog Box

- 2. Click Nobody Logged On.
- 3. Click OK to display the Security editor.
- 4. Use the Security editor screens to select user options and to modify access to functions, applications, objects, and classes.



Setting Up Group Security

Use the following procedure to create a new group user. Group-level security is only available on Tracer Summit Version 13 or higher workstations with the Enterprise Management package installed.

Group security appears in the Setup menu when you log on to the workstation with level 2 security access. When you perform a new installation in Version 13 or higher, or during an upgrade from previous versions, the only active username with level 2 access is username: Tracer, password: Summit. This is the *Tracer Summit user*.

Note:

If you removed the Tracer Summit user from site security, you have to temporarily re-create this user to log on to a site and access group security. After you create a new level 2 security user, you can then delete the Tracer Summit user.

To create a new group user:

- 1. Set up groups using the Group Configuration editor.
- 2. From the Setup Menu, select Group Security. The Select Group Security dialog box appears (see Figure 128).

Figure 128. Select Group Security Dilaog Box

S	elect Security			×
2	Name TRACER			
	OK]	New	Cancel	Help

3. Click New. The Group User Setup dialog box appears (see Figure 129 on page 145).



Figure 129. Group Setup Dialog Box

User Setup	×
User Name:	OK
	Cancel
Selected Profile:	
Level 1	
Level 0	
Level 2	

- 4. Type the name of the new user.
- 5. Select the security level for the user.
- 6. Click OK. The Group Security editor displays (see Figure 130 on page 146). Edit the User Name and Security Level of the user if needed.
- 7. Type the password for the user in the Password field.

Note:

As a default, the Tracer Summit software masks the password from onlookers and all characters in the field display as asterisks. Click the Show Password check box to display the password without asterisks.

8. Click the options that apply to the new user.

Click Match Upper & Lower Cases if you want the Tracer Summit software to allow upper and lower case characters for the password. Otherwise, the software accepts all passwords that you type as though they were lower case.

Click the Auto – Logoff check box to activate the Minutes field. Type in the number of minutes of system inactivity after which the Tracer Summit software will automatically logoff the user.

- 9. In the Available Group(s) list, select the groups that the user can access.
- 10. Click Add to add the group(s) to the Assigned Group(s) list.
- 11. Click Save to store the new user to the database.



Setting Up Security—Tracer Summit System

User Info	
User Name: newuser Password: states	Security Level 2
Options: Match Upper & Lower Case Auto-Log Off 0 Minutes	
Group Assignment	Add >> Add >> Add >> Add All >> Add All >> Add All >>

Figure 130. Group Security Editor Screen





Setting Up Security for the Operator Display

Use the following procedure to set up operator display passwords. This group is only displayed if the BCU is a BMTW. Entering data in this group is optional. Use it only to enable security at the operator display.

To set up security for the operator display:

- 1. Log on to the site that has a BCU operator display.
- 2. From the Setup menu, select Site Security. The Tracer Summit Security editor displays with the User Info tab opened (see Figure 131).

Figure 131. Site Security Editor Screen

User Info Functions Applications Objects Clas	ses
User Information User Name: TRACER First Name: Middle: Last Name: Job Title:	Operator Display Security Password: Show Password Allow Edit Access Allow Edit Access Schedule Set Points Overrides Setup Timed Override
Tracer Summit Workstation Security Password: Password: Show Password Options: Security Supervisor Match Upper & Lower Case Disconnect Remote Connection at Log Off Auto-Log Off 60 Minutes	

3. In the Tracer Summit Security group, set up the security profile of the user.

For more information on setting up user security.

4. In the Password field, type a password.

The password must be numeric only (4-8 digits). The password can be the same as or different from the Tracer Summit password. Each digit of the password displays as an asterisk (*).

To display the password, click the Show Password checkbox. The password displays in the form you entered it, showing numbers rather than asterisks.

5. Select the Allow Edit Access options that apply.



- Click Alarms to enable acknowledgement and deletion of alarms. If the field is not selected, you can view alarms at the operator display but cannot acknowledge or delete them.
- Click Schedule to allow the modification of existing schedules. If the field is not selected, you can view schedules at the operator display but cannot modify them.
- Click Set Points to allow modification of setpoints. If the field is not selected, you can view setpoints at the operator display but cannot modify them.
- Click Overrides to allow overrides. If the field is not selected, you can view properties that can be overridden (manual controls) but you cannot modify them.
- Click Setup to allow setup activities at the operator display. If the field is not selected, you can view the Operator Display settings but cannot modify them.
- Click Timed Override to allow timed overrides of areas. If the field is not selected, you can view the timed override status of an area but cannot modify it.

Note:

Some of the setup activities are always available.

6. Click Save.

Deleting a User

You cannot delete a user from the Security editor. To delete a user, use the Delete Object utility in the Tools menu..

Note:

Deleting a user from group security does not delete the user from site security. This applies to site and group security.



Chapter 10 Setting Up Printers, Modems, Cell Phones, and Pagers

Tracer Summit software supports the following features:

- Printing of graphics, reports, Custom Programming Language (CPL) programs, the event log, and individual alarms and events as they occur
- Communications between a BCU modem and a PC Workstation modem

• Communications between a BCU modem, cell phone/pager

This chapter describes the steps in setting up each of these options.



Setting Up Printers

In Tracer Summit, you can print graphics, reports and CPL programs, as well as the event log and alarms and events as they occur. For graphics, reports, CPL programs, and the entire event log, you can select the File menu's Print item to print the displayed information. These items use page printing, which prints a page at a time to a printer. For page printing, you can use any standard printer (such as a laser or inkjet printer). You set up and use the printer just as you do from any Windows program.

Event and alarm printing is handled differently. Tracer Summit prints alarms and events to a selected events printer one line at a time as they occur. A tractor-feed (or line-feed) printer works best as the events printer so that you can view the events as they are generated and printed. If you select a page printer, you do not see the events until a complete page is printed. Typically, the events printer is connected directly to the PC Workstation (on the LPT1: port). However, the printer can also be connected through a network.

To print the entire event log, you can use any printer. The events printer is only for printing alarms and events one at a time as they occur.

Whether you are setting up the events printer or any other printers, you need to first add the printer in the Windows operating system.

Adding a Printer in Windows

Before you can select a printer in Tracer Summit, you need to add the printer to the Windows operating system using the Add Printer application.

To access the Add Printer application:

- 1. From the Windows desktop, double click on the My Computer icon, then double click on the Printers icon.
- 2. At the Printers window, double click on Add Printer. The Add Printer Wizard displays and will guide you through the installation of a printer.

Setting Up and Selecting the Events Printer

After you have added a printer to the Windows operating system, you can select that printer as your events printer. To set up the events printer, you access the System Options editor (from the Tools menu, select Options). For detailed information on setting up the events printer, refer to Chapter 33, "Setting System Options".

Selecting Other Printers

For printing graphics, reports, CPL programs, and the entire event log, you can use a printer you added to the Windows operating system. With the graphic, report, CPL program, or event log displayed, on the File menu select Print. At the Print Setup dialog box, select the printer.



Setting Up Modems

Tracer Summit software supports modem communications between a BCU and a remote PC Workstation. Once the BCU and PC Workstation modems are installed, you can set up and configure both modems in Tracer Summit using the Workstation or BCU Modem editor.

In the Tracer 100/Tracker Communications package, Tracer Summit supports modem communication between Tracer 100 or Tracker (EMTK) panels and a remote PC Workstation.

You add BCU modems during site configuration (see "Adding a BCU Modem" on page 60). Once a BCU modem is configured, you can then modify the modem through the modem editor.

You add and configure workstation modems for BCU sites and for Tracer 100 or Tracker (EMTK) sites through the modem editor.

Accessing the Workstation Modem Editor

1. From the Setup menu, select Communications, then select Workstation Modem. The Select Workstation Modem dialog box displays (see Figure 132).

ect Workstation Modem		
lame		
dministration Workstation Modem		
ain Workstation Modem		
anufacturing Workstation Modem		

Figure 132. Select Workstation Modem Dialog Box

2. Select a modem and click OK. The Workstation Modem editor displays (see Figure 133 on page 152).



Setting Up Printers, Modems, Cell Phones, and Pagers

Status	Setup	Configuration (BC	U Sites)	Configuration (T100/Tracke	Phone Book
Work	station I	Modem Name	Administratio	on Workstation Modem	
Com	n Port:		2		
Conr	nection S	itatus:	Idle		

Figure 133. Workstation Modem Editor

Adding a Workstation Modem in Windows

Before you can create a modem object in Tracer Summit, you need to add a modem to the Windows operating system. The Windows Modems application program is found in the Windows Control Panel.

To access the Modems application program:

- 1. From the Windows desktop, double click the My Computer icon, then double click the Control Panel icon. The Control Panel displays (see Figure 134).
- 2. Double click the Modems icon. For further instructions on adding a modem, refer to the Windows operating system manual.

Figure 134. Windows Modems Icon





Creating a New Workstation Modem

A workstation modem is a modem that is installed in your PC. In Tracer Summit, you must configure your modem to communicate with BCU sites and Tracer 100 or Tracker sites (if you have the Tracer 100/Tracker Communication package installed).

The modem editor will only allow you to create workstation modems for the type of Tracer Summit package that you have on your workstation. The Tracer Summit standard software allows you to add workstation modems for BCU sites. When you have the Tracer 100/Tracker Communication or Enterprise Management package, you can create workstation modems for Tracer 100 or Tracker sites.

To create a Tracer Summit local workstation modem, you perform these tasks:

- 1. Add a modem to the Windows operating system (see "Adding a Workstation Modem in Windows" on page 152).
- 2. Configure and set up a workstation modem using the Modem editor. You need to:
 - Open and name a new modem object (as described in this section)
 - Choose which modem in Windows that your workstation will use (see "Setting Up a Workstation Modem" on page 157)
 - Define how the modem will be used (see Table 5 on page 159)
 - If you have the option to do so, determine whether you will use the workstation modem to communicate to Tracer 100 or Tracker sites
 - Add phone numbers to the Phone Book (see "Setting Up the Phone Books" on page 163)
 - Verify the defaults for the comm port and the configuration strings
 - Save the modem object



Setting Up Printers, Modems, Cell Phones, and Pagers

To create a workstation modem object:

1. From the Setup menu, select Communications, then select Workstation Modem. The Select Workstation Modem dialog box displays (see Figure 135).



elect Workstation Modem		×				
Name						
Administration Workstation Modem						
Main Workstation Modern						
Manufacturing Workstation Modem						
·						
OK New	Cancel	Help				

2. Click New. The New Modem Name dialog box displays (see Figure 136).

Figure 136. New Modem Dialog Box

		×
OK	Cancel	Help
	OK	OK Cancel

- 3. Enter a name in the Modem Name field. Use a maximum of 32 characters. You must enter a name before you can save the new workstation modem object. (You can modify the name from the Setup screen of the Modem editor.)
- 4. Click OK. The Workstation Modem editor displays (see Figure 137 on page 155).





Figure 137. Workstation Modem Editor Status Screen

5. Proceed with configuring and setting up the new workstation modem (see "Configuring a Workstation Modem for BCU Sites" on page 155 and "Setting Up a Workstation Modem" on page 157).

Configuring a Workstation Modem for BCU Sites

The following screen gives you a way to view and append the maximum speed of the comm port for the workstation modem, as well as the standard configuration strings that the Windows operating system provides for the modem.

Note:

The comm port in the BMTS BCU has a fixed speed of 9600 baud. The BMTW BCU has an adjustable speed up to 38400 baud. So, depending on what type of BCU you are calling, as well as the quality of the phone line, you might be able to use the higher baud rate.

To configure a workstation modem for BCU sites:

1. From the Workstation Modem editor, click the Configuration (BCU Sites) tab to display the Configuration (BCU Sites) screen (see Figure 138 on page 156).



Setting Up Printers, Modems, Cell Phones, and Pagers

Status	Setup	Configurat	ion (BCV Sites)	Configuration (T100/Tracker Sites)	Phone Book]
Ŵ	/orkstation	Comm Port I	Maximum Speed:	<u>3501</u>		
Г	Configurati	on Strings fo	or BCU Sites			
	Reset Str	ing:	AT&F1			
	Initializatio	on String 1:	AT&F1E0Q0V1&0	C1&D2S0=0		
	Initializatio	on String 2:				
	Attention	String:	+++			
	Dialing St	ring:	ATDT			
	Hangup 9	String:	ATH			

Figure 138. Workstation Modem Configuration (BCU Sites) Screen

2. Select the baud rate from the Workstation Comm Port Maximum Speed list.

Note:

The Configuration Strings fields display default modem command strings. However, you can edit the fields to accommodate specific modem requirements. For information about changing default settings, refer to the Tracer Summit online Help.

Configuring a Workstation Modem for Tracer 100 or Tracker Sites

If your Tracer Summit workstation includes the Tracer 100/Tracker Communication or Enterprise Management package, the Configuration (T100/ Tracker Sites) screen appears when you access the workstation modem editor. The Configuration (T100/Tracker Sites) screen lets you enable or disable the modem for use with these Tracer 100 or Tracker sites.

To configure a workstation modem:

- 1. From the Workstation Modem editor, click the Configuration (T100/ Tracker Sites) tab to display the Configuration (T100/Tracker Sites) screen (see Figure 139 on page 157).
- 2. Select the Use this modem for T100/Tracker Sites check box.


Figure 139. Workstation Modem Configuration (T100/Tracker Sites) Screen

Status	Setup	Configuratio	n (BCU Sittes)	Configuration (T100/Tracker Sites)	Phone Book				
V (Use this modem for T100/Tracker Sites								
_ Co	nfiguratio	on Strings fo	r T100/Tracker S	ites					
E	leset Stri	ng:	AT&F1						
Ir	nitializatio	on String 1:	AT &F1 &M0 &K0) E0 V1 &D2 &B1 &A3 &S0					
Ir	nitializatio	on String 2:							
A	ttention !	String:	+++						
D	ialing Sti	ring:	ATDT						
н	langup S	itring:	ATH						

Note:

The Configuration Strings fields display default modem command strings. However, you can edit the fields to accommodate specific modem requirements. To connect to Tracer 100 or Tracker sites, it is very important to include commands to disable error correction and data compression in the initialization string fields. For information about changing default settings, refer to the Tracer Summit online Help.

Setting Up a Workstation Modem

Use the following procedure to:

- Rename the workstation modem
- Define what modem in Windows that the Tracer Summit workstation modem object should use
- Define comm port the modem is on
- Define whether the modem can accept incoming and/or outgoing calls

To set up the workstation modem:

1. From the Workstation Modem editor, click the Setup tab to display the Setup screen (see Figure 140 on page 158).



Setting Up Printers, Modems, Cell Phones, and Pagers

Status	Setup	Configuration (BC	CU Sites)	Configuration (T100/Tracker Sites)	Phone Book
Wor	kstation f	Modem Name:	BAX101]
Con	nect By:		U.S. Roboti	cs 56K FAX EXT]
Com	im Port:		2 🔹		
Mod	lem Usag	e:	Incoming ca	alls only]

Figure 140. Workstation Modem Editor Setup Screen

- 2. In the Workstation Modem Name field, modify the name of the modem if necessary.
- 3. From the Connect By list, select what modem in Windows the Tracer Summit workstation modem object should use.
- 4. In the Comm Port field, check the communication port default value for the workstation modem. If necessary, enter the new communication port number.

Note:

- You will not be able to select a communications port that is being used by another workstation modem.
- If you edit this field for an existing workstation modem, Tracer Summit continues to use the previous value until you restart Tracer Summit.
- 5. From the Modem Usage list, select the option that best fits how the modem is to be used. For information on making your selection, see Table 5 on page 159.



Table 5.	How to	Determine	Modem	Usage
----------	--------	-----------	-------	-------

Modem Usage	Use this Modem for T100/Tracker Sites	Result	
Outgoing calls only	False	 Can dial BCU sites. Cannot dial Tracer 100 or Tracker sites. No incoming calls accepted. See note 1. 	
Outgoing calls only	True	 Can dial BCU sites, Tracer 100 sites, and Tracker sites. No incoming calls accepted. See notes 1 and 2. 	
Incoming calls only	False	 Can take incoming calls from BCU sites. Cannot take incoming calls from Tracer 100 or Tracker sites. No outgoing calls allowed. See note 1. 	
Incoming calls only	True	 Can take incoming calls from BCU sites, Tracer 100 sites, and Tracker sites. No outgoing calls allowed. See notes 1 and 2. 	
Both incom- ing and out- going calls	False	 Can dial and take incoming calls from BCU sites. Cannot dial or take incoming calls from Tracer 100 or Tracker sites. See note 1. 	
Both incom- ing and out- going calls	True	Can dial and take incoming calls from BCU sites, Tracer 100 sites, and Tracker sites. See notes 1 and 2.	
(1) There is no is for Tracer 10 Sites check bo 100 or Tracker gram your ren your remote T	setting to exclu 0 and Tracker si x discussed in " Sites" on page note BCU sites t racer 100 and Tr	de BCU sites from using the modem as there ites (see the Use this Modem for T100/Tracker Configuring a Workstation Modem for Tracer 156). However, to exclude incoming calls: pro- o call a different phone number than the one racker sites call.	

(2) To communicate with Tracer 100 and Tracker panels, you must initialize the modem so that data compression and error control are disabled.



Accessing the BCU Modem Editor

1. From the Setup menu, select Communications, then select BCU Modem. The Select BCU Modem dialog box displays (see Figure 141).

Figure 141. Select BCU Modem Dialog Box	x
---	---

Select BCU Modem		×
Name		
AdministrationModem		
Chiller Plant BCU Modem-Hardwir		
ICS University Modem		
Manufacturing Modem		
1		
OK 1	Cancel	Help
()		
UK	Cancel	Help

2. Select a modem and click OK. The BCU Modem editor displays (see Figure 142).

Figure 142. BCU Modem Editor

Status	Setup	Configuration	Phone Book	Classes	
BCU Conn	Modem I ection S	Name tatus:	AdministrationM BCU Online	odem	



Creating a New BCU Modem

Create a new BCU modem using Tracer Summit's Site Configuration Utility (see "Adding a BCU Modem" on page 60). After creating the new modem, you can edit its configuration with the BCU Modem editor.

With the BCU Modem editor, you perform these tasks:

- Choose which model of modem you have installed in the BCU (see "Configuring a BCU Modem" on page 162) This does not apply to the BMTX BCU which has only one model of modem available.
- Set the number of dialing attempts (see "Setting Up a BCU Modem" on page 161)
- For modems in BMTW and BMTX BCUs, set the BCU comm port maximum baud rate
- Verify the defaults for the configuration strings
- Add phone numbers to the Phone Book (see "Setting Up the Phone Books" on page 163)
- Define security access (see "Setting Security Access for a BCU Modem" on page 166)
- Save the modem object

Setting Up a BCU Modem

1. From the BCU Modem editor, click the Setup tab to display the Setup screen (see Figure 143).

Figure 143. BCU Editor Setup Screen



- 2. Select model of modem you have installed in the BCU from the Connect By list. This does not apply to the BMTX because there is only one model of modem available.
- 3. In the Maximum Dialing Attempts field, enter the number of times the BCU will attempt to connect with a remote PC Workstation, cell phone/pager.

Note:

If the number of dialing attempts is greater than one, the BCU will wait five minutes before each attempt to dial the number again.



Setting Up Printers, Modems, Cell Phones, and Pagers

Configuring a BCU Modem

1. From the BCU Modem editor, click the Configuration tab (see Figure 144).



Status Setup Configuration	on Phone Book Classes
BMTW BCU Comm Port M	1aximum Speed: B3400
Reset String:	AT2 AT&D2%C1V1X400F1S7=60M1
Initialization String 2:	AT&H2&B1&J2&B1
Attention String:	+++
Dialing String:	ATDT
Hangup String:	
Answering Call String:	ATS0=1

2. From the BMTW BCU Comm Port Maximum Speed list, select the baud rate that best matches the speed of the modem you have installed in the BCU.

The comm port in the BMTX and BMTW BCU has an adjustable speed setting. This is because modems are gaining in speed and phone lines are clearer, so the speeds at which a workstation or BCU modem can connect is increasing as well. To maximize the rate that data can be transferred between the BCU modem and the BCU, set the speed of the comm port to its maximum value.

Note:

For CE certification, special initialization strings must be used based on the international location. See online help for specific configuration information.

The Configuration Strings fields display default modem command strings. However, you can edit the fields to accommodate specific modem requirements.



Setting Up the Phone Books

Use the Phone Book screen to enter and store phone numbers. The workstation needs phone numbers in the workstation modem editor for remote sites. The BCU needs phone numbers in the BCU modem editor for routing alarms to remote workstations and cell phones/pagers.

The Phone Book screen allows you to:

- Edit existing phone numbers
- Add new phone numbers
- Remove phone numbers

Editing Existing Phone Numbers

1. From the BCU or Workstation Modem editor, click the phone book tab to display the Phone Book screen. Figure 145 shows the BCU Modem editor's Phone Book screen (which is slightly different than the Workstation Modem editor's Phone Book screen).

Figure 145. BCU Modem Editor Phone Book Screen

Status	Setup	Con	figuration	Phone Book	Classes				
BCU	Phone Bo	ok							
	Туре	;		Name	P	hone umber	Use Dialing Prefix	Use Calling Card #	-
	Workstati	ion	workstatic	n1	6543				
	1 Phone N	lumb	er	emove Phone N	lumber				
(Adi	<u>d Phone N</u> g Prefix:	lumb	er]	emove Phone N	umber				

2. In the Phone Number field, make changes as necessary to the phone number.

Note:

For cell phone support, this phone number is the dial-up modem number for your short messaging service center (SMSC). This number comes from the cell phone provider.

3. Make sure the Use Dialing Prefix and Use Calling Card # check boxes are set as desired.



4. In the Dialing Prefix field, enter a dialing prefix to be used with all phone numbers defined in the phone book (if applicable).

Note:

When dialing out on the modem, the total combined character lengths of the dialing string cannot exceed the manufacturer's recommended maximum length. The dialing string for workstations is comprised of the dialing command (ATDT), the dialing prefix, phone number, and calling card number. The dialing string for BCUs is the same as the workstations except that the BCU might also have a numeric message for digital (numeric) cell phones/pagers. The sequence in which the dial string is sent in the order listed above.

5. In the Calling Card field, enter a long distance calling card number that can be used with the defined phone number.

Note:

Depending on the calling card, a short pause or second dial tone may be required before dialing the calling card number. Use commas to define a pause (for example: ,,,821-163-2288-6576) Use a *W* to make the modem wait for a second dial tone (for example: W 825-163-2288-6576).

Adding Phone Numbers

- 1. From the BCU or Workstation Modem editor, click the Phone Book tab to display the Phone Book screen.
- 2. Click the Add Phone Number button. The Add Phone Number dialog box displays (see Figure 146 and Figure 147: *Workstation Modem Add Phone Numbers Dialog Box* below).

Figure 146. BCU Modem Add Phone Number Dialog Box

Add Phone Number	X
Type: Workstation 💌 Name: Administration WS 💌	Dialing Information Phone Number: Use Dialing Prefix Use Calling Card # USE Cancel Help



Figure 147. Workstation Modem Add Phone Numbers Dialog Box

Add Phone Numbers						
Phone Number:						
🔲 Use Dialing Prefix						
🗖 Use Calling Card #						
OK Cancel H	elp					

- 3. For BCU modems:
 - In the Type field, select the object type the BCU needs to call.
 - In the Name field, select the name of the object.
 - In the Phone Number field, enter the phone number you want the BCU modem to dial when attempting to connect with the selected object type (workstation or cell phone/pager).
- 4. For Workstation modems, in the Phone Number field, enter the phone number you want the modem to dial.
- 5. If you defined a dialing prefix on the Phone Book screen, click the Use Dialing Prefix check box to have Tracer Summit send that dialing prefix.
- 6. If you defined a calling card on the Phone Book screen, click the Use Calling Card # check box to have Tracer Summit send that calling card number.
- 7. Click OK.

Removing Phone Numbers

- 1. From the BCU or Workstation Modem editor, click the Phone Book tab to display the Phone Book screen.
- 2. In the Phone Book field, click the left-most column of the number that you want to remove.
- 3. Click the Remove Phone Number button.



Setting Security Access for a BCU Modem

1. From the BCU Modem editor, click the Classes tab to display the Classes screen (see Figure 148).

Figure 148. BCU Modem Editor Classes Screen

Status	Setup	Configuration	Phone Book	Classes	
Sec	urity Cla	sses			

2. Click Security Classes to display the Change Security Classes dialog box (see Figure 149).

Class	Class Name	Access	
1	System Operator	V	
2	Day Operator		
3	Night Operator		
4	Security		
5	Chiller Plant		
6	Administration		
7	Manufacturing		
8	ICS University		
9	Engineering		
10	Applications		
11	Marketing		
12	Finance		
13	Training		
14	Product Commun.		
15	Human Resources 🛛 🔽		
16	Production		

Figure 149. Change Security Classes Dialog Box

- 3. Click on the Access field next to each class to grant or deny access. A check in the field grants access. No check denies access.
- 4. Click OK to display the Classes screen.



Setting Up Cell Phone/Pagers

Tracer Summit software supports communication between a BCU and a cell phone/pager. The BCU (equipped with a modem) sends messages to the cell phone/pager using a paging service. Tracer Summit uses cell phone/paging to notify you of alarms in the system.

Note:

See Chapter 6, "Configuring Tracer Summit BCU Sites", for details on how to assign a cell phone/pager as an event receiver

Accessing the Cell Phone/Pager Editor

1. From the Setup menu, select Communications, and then select Cell Phone/Pager. The Select Cell Phone/Pager dialog box displays (see Figure 150).

Figure 150. Select Cell Phone/Pager Dialog Box

Se	lect Cell Phone/Pager	×
	Name	
	Service pager 6	
	OK New Cancel Help	

2. Select a cell phone/pager and click OK. The Setup screen displays (see Figure 151).

Figure 151. Cell Phone/Pager Editor Setup Screen

Setup Classes	
Name: Service pager 6	j
Protocol C Alpha-Numeric 'TAP' C Digital 'Numeric Only'	
Cell Phone/Pager ID (PIN): 0	



Creating a New Cell Phone/Pager Object

1. From the Setup menu, select Communications, then select Cell Phone/ Pager. The Select Cell Phone/Pager dialog box displays (see Figure 152).



Se	elect Cell Phone/Pager	×
	Name	
	Service pager 6	
'	OK New Cancel Help	

2. Click New. The New Cell Phone/Pager Name dialog box displays (see Figure 153).

Figure 153. New Cell Phone/Pager Name Dialog Box

Name		×
OK	Cancel	Help
	Name OK	Name OK Cancel

3. Enter a name in the Cell Phone/Pager Name field. Use a maximum of 32 characters. You must enter a name before you can save the new cell phone/pager object. (You can modify the name from the Setup screen of the Cell Phone/Pager editor.)



4. Click OK. The Cell Phone/Pager editor displays (see Figure 154).

Figure 154. Cell Phone/Pager Editor

Setup Classes			
Name: Service pager 6			
Protocol			
C Digital 'Numeric Only' Cell Phone/Pager ID (PIN): 0			

5. Set up the new cell phone/pager (see "Setting Up a Cell Phone/ Pager").

Setting Up a Cell Phone/Pager

- 1. From the Cell Phone/Pager editor, display the Setup screen (see Figure 154).
- 2. In the Protocol field, select the type of cell phone/pager format the BCU will use to dial out alarms (either Alpha-Numeric 'TAP" or Digital 'Numeric Only').

Note:

If you select Alpha-Numeric 'TAP, the paging service or the cell phone provider's SMSC must support the TAP communications protocol.

- 3. Make a selection:
 - If the Alpha-Numeric 'TAP' button is selected, enter the telephone number of the cell phone/pager in the ID (PIN) field.
 - If the Digital 'Numeric Only' button is selected, enter a numeric code in the Message field. The code should be meaningful to the receiver.

Setting Security Access for a Cell Phone/Pager

1. From the Cell Phone/Pager editor, click the Classes tab to display the Classes screen (see Figure 155 on page 170).



Setting Up Printers, Modems, Cell Phones, and Pagers

Setup	Classes	
,		
Sec	urity Classes	

Figure 155. Cell Phone/Pager Editor Classes Screen

2. Click Security Classes to display the Change Security Classes dialog box (see Figure 156).

lass	Class Name	Access	
1	System Operator		
2	Day Operator		
3	Night Operator		
4	Security		
5	Chiller Plant		
6	Administration		
7	Manufacturing		
8	ICS University		
9	Engineering		
10	Applications 🔽		
11	Marketing 🔽 🔽		
12	Finance		
13	Training		
14	Product Commun.		
15	Human Resources 🔽 🔽		
16	Production 🔽		

Figure 156. Change Security Classes Dialog Box

- 3. Click on the Access field next to each class to grant or deny access. A check in the field grants access. No check denies access.
- 4. Click OK to display the Classes screen.



Chapter 11 Overriding System Values

You can override the system control of the present value property for an object by selecting the override control. When the override control is on a graphic, you can display status information as to the object's override state, or if you have simplified overrides configured, you can click on the graphic and display the simplified override dialog box. This gives you information on what system applications are currently controlling the object (see Figure 161 on page 175 and Figure 162 on page 175).

When a "hand" icon is displayed on an override button, it indicates that the present value of the object has been manually overridden. To set up this feature, see "Displaying Override Status" on page 564.

Figure 157. Manual Override Icon

🖕 Override...

The Override button for UCMs is active if the BCU is up and communicating with the UCM and your workstation, and if the UCM is not under local control. The Override button for an area object is active if the BCU that the area object is saved in is communicating to your workstation.

Note:

The text of the button that displays the Override dialog box is specific to your site. The button may, for example, be called Override, Control, or another name.



Setting Up the Simplified Override Dialog Box

With the Simplified Override dialog box, the daily operator can change the present value of an object from a graphic. First, the simplified override must be set up before it is available for use in Tracer Summit.

To set up the simplified override dialog box:

- 1. From the Site Security editor, click the Functions tab.
- 2. In the Access column, click the checkbox for the following functions (see Figure 158):
- Allow Min/Max edit in Simplified Override
- Change Values from Graphics
- User_Priority level
- 3. In the Select Default Priority for Simplified Override Dialog dropdown, select a user default priority level.

Note:

The highest user priority level you select will determine the highest user level default override setting available.

Figure 158. Functions tab

User Info	Functions	Applications	Objects	Classes	
				A	
0.11		on name	- Auronida	Access	5
Allow I	Min/Max edit in S	implified Anali	og Override		
Allow I	Multiple Graphic	VVIndovVs			
Backup	o (Site, Graphics	, Reports)			
BCU Re	eseukestore - Velvee Evere C				
Change	e values Froni G	rapriics			_
Delete	Alte Graphics				
Edit No					-
Euit Na	orgalion free				_
Modify	Normal Schodul	•			-
Modify	Sustem Options				_
Objects	system Options	•			_
Restor	s anu Froperties e (Site: Grenhics	Renorte)			_
Rover	Configuration C	iniv)			_
Rover	(Configuration C (Full Access)	1117)			_
Timed (Override				
User -	Any Priority Lev	el Point Contro	~		
User -	Emergency Poin	t Control -1			
User -	High Point Contr	ol - 4	/		_
User -	Medium High Poi	nt Control - 6			
User -	Medium Low Po	int Control - 8		<u> </u>	_
User -	Low Point Contr	ol - 12		<u> </u>	
			~		
Select D	efault Priority fo	r Simplified Ov	erride Di e log	≠ Ji 4: User	r - High
					· · · · · · · · · · · · · · · · · · ·



- 4. Click the Objects tab (see Figure 159).
- 5. In the Access column, click the checkbox for the following:
- Analog Output
- Binary Output
- The appropriate UCMs
- 6. Click Save

Figure 159. Objects tab

	User Info	Functions	Applications	Objects	Classes]
		Objec		Access		
	Absorption Chiller (UCP2)					
	Analog In	put			v	
(Analog O	utput			v	
]	Analog V	alue			•	
	Area				•	
	BCU I/O M	lodule			•	7
	Binary Inp	ut			v	
Q	Binary Ou	tput 📿			v	
	Binary Va	lue			v	
	Calculatio	n			v	
	Calendar				v	
	Cell Phone	e/Pager			V	
	CenTraVa	ac Chiller (UC	P1)		V	
	Centrifuga	al Chiller (UC	P2)		V	
	Chiller (Lo	onTalk)				
	Chiller Pla	nt Control			v	
	Commerci	ial Self Conta	ained (CSC)			
	CPL Progr	ram				
	Device					-



Accessing the Simplified Override Dialog Box

The Simplified Override dialog box can be only accessed through a graphic. You can access it by using either the Override Control button or a pop-up menu. With the Simplified Override dialog box you can override the present value of:

- Analog outputs
- Multi-state analog outputs
- Binary outputs
- UCMs and applications
- Non-Trane BACnet points

Using the Override Control button

1. In a graphic, click on the Override control button (see Figure 160). The Simplified Override dialog box displays (see Figure 161 on page 175).

Note:

The Override control button only controls present value properties and does not have the capability to override an area application's lighting values. To override the lighting values, refer to "Overriding a Binary Output or a Lighting Value for an Area Application" on page 182.

Figure 160. Override control button





verride "AHU-	2vv"			×
- Overnde Details	5.	°∪	noccupied	
	°0	ptimal Start		
Auto	Manua	∎ 🕂~0	ccupied	
T		° 0	ptimal Stop	
		٥D	emand Limit	
	\sim	٥D	uty Cycle	
		٥P	iority Shutdown	
		٩N	ight Economize	
		∘N	ight Heat Cool	
Present Value Value is contro 4:30:08 AM	olled to Occupied	by Manufacturi	ng Areas since 4	1/13/2006
ок	Cancel	Apply	Help	More >>

Figure 161. Example of a Simplified Override Dialog Box

2. Click the More button to view information about priority arrays (see Figure 162).



Override "AHU-2vv"		2
C Override Details:		Priority Array
	 Unoccupied 	Your default control priority is set to 6:
	Optimal Start	Miscellaneous 11. Area Control - Manufacturing Areas - Decuring
Auto Manual		xx - Relinquish Default ; Unoccupied
	Optimal Stop	
	© Demand Limit	
	Outy Cycle	
	 Priority Shutdown 	
	Night Economize	
	 Night Heat Cool 	 Priority levels are listed highest to lowest in the priority array.
		 To change the setting your priority must be higher than the top priority in the list.
		- For more options use Advanced Override dialog.
Present Value		
Value is controlled to Occupied by Ma 4:30:08 AM	nufacturing Areas since 4/13/20	
1.00.001 m.		
OK Cancel A	oply Help	<< Less



Using a Pop-up Menu

Note:

If you are not set up to use the Simplified Override dialog box, only the Advanced dialog box displays. See your Site Security Administrator for more information.

- 1. Right-click on a property in a graphic. A pop-up menu displays two override options (see Figure 163):
 - Override <object type> (this is the simplified override option)
 - Override using Advance Dialog
- 2. Select the simplified override option to display the Simplified Override dialog box.

Figure 163. Graphic Pop-up Menu





Using the Simplified Override Dialog Box

With the Simplified Override dialog box you can easily override the following:

- Analog outputs
- Binary outputs
- Multi-state analog outputs
- UCMs
- Non-Trane BACnet points

Overriding an Analog Output

1. Open the Simplified Override dialog from a graphic or the from the override button. The Override dialog box displays (see Figure 164).

Note:

When you first open the dialog, the Auto/Manual knob displays the control status of the object. Auto means the automation system is in control. Manual means that a security user has overriden the object.



Figure 164. Analog Output Override Dialog Box

Note:

Click on the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.



Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

- 2. Click on Manual option on the Auto/Manual knob. This enables the slider bar and text field.
- 3. Click in the text field and type a new value. The green indicator in the slider bar moves to reflect the new value.
- 4. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

Changing the Min/Max Output Range

1. Click on the Edit Min/Max button in the Analog Output Override dialog box. The Edit Min/Max dialog box displays (see Figure 165).

Figure 165. Edit Min/Max Dialog Box



- 2. Type values in the Max Value, Default Value, and Min Value fields.
- 3. Click OK. The dialog box closes.

To return control back to the BAS, see "Releasing Control Back to the System" on page 186.



Overriding an Analog Output or Analog Value in a Non-Trane BACnet Device

1. Open the Simplified Override dialog from a graphic or the from the override button. The Override dialog box displays (see Figure 166).

Figure 166. Non-Trane Analog Output Override Dialog Box

Override "AirDirectionCommand_001"	4
This is a Non-Trane point.	
Release Change to	
Present Value Value is controlled to 0.00 by Relinquish Default since ???	
OK Cancel Apply Help More>>	

Note:

Click the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.

Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

- 2. Click in the text field to type a new value.
- 3. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.



Overriding a Multi-State Analog Output

Note:

The analog output (AOP) object must be set up in the editor as a multistate object for this view. For more information see "Setting Up Multi-State Values and Assigning Labels" on page 262.

1. Open the Simplified Override dialog from a graphic or the from the override button. The Override dialog box displays (see Figure 167).

```
Figure 167. Analog Output (Multi-state) Override Dialog Box
```

Override "Electric Heat"		×
- Override Details:	* Off	
Auto Manual	1st Stage On	
	◆2nd Stage On	
	◆ 3rd Stage On	
Present Value Value is controlled to 1st Stage On by T	RACER since 1/6/2006 9:38:50) AM
OK Cancel App	ly Help	More >>

Note:

Click on the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.

Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

2. Click on the Manual option in the Auto/Manual knob. This enables the multi-state slider bar and the Apply button.



- 3. Click and drag the indicator in the slider bar to the desired setting.
- 4. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

To return control back to the BAS, see "Releasing Control Back to the System" on page 186.

Overriding a Multi-State Output in a non-Trane BACnet Device

1. Open the Simplified Override dialog from a graphic or the from the override button. The Override dialog box displays (see Figure 168).



Figure 168. Non-Trane Analog Output (Multi-state) Override Dialog Box

Note:

Click on the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.

Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

- 2. Verify that the Control knob is in the Change to position.
- 3. Click and drag the indicator in the slider bar to the desired setting.



4. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

To return control back to the BAS, see "Releasing Control Back to the System" on page 186.

Overriding a Binary Output or a Lighting Value for an Area Application

1. Open the Simplified Override dialog from a graphic or the from the override button. The override dialog box displays (see Figure 169).

Figure 169. Binary Output Override dialog box



Note:

Click on the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.

Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

2. Click on the Manual option in the Auto/Manual knob.



3. Click the toggle switch to set it to the On state, or click the toggle switch to set it to the Off state. With either selection, the On label or the Off label will then appear in bold.

Note:

The toggle switch labels are defined in the Binary Output editor and can be assigned names other than On and Off.

4. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

To return control back to the BAS, see "Releasing Control Back to the System" on page 186.

Overriding a Binary Output or Binary Value in a Non-Trane BACnet Device

1. Open the Simplified Override dialog from a graphic or the from the override button. The Override dialog box displays (see Figure 170).

Override "EnergyEfficiencyCommand_001" Override Details: This is a Non-Trane point. Release Change to On Off Off Off Off OK Cancel Apply Help More>>>

Figure 170. Non-Trane binary Output Override Dialog Box

Note:

Click on the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.



Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

- 2. Verify the control knob is in the Change to position.
- 3. Click the toggle switch to set it to the On state, or click the toggle switch to set it to the Off state. With either selection, the On or Off label will then appear in bold.

Note:

The toggle switch labels cannot be edited for non-Trane BACnet points. If you wish to edit the labels, create a binary output point that references the non-Trane BACnet point. Use the Binary Output editor to edit the labels.

4. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

To return control back to the BAS, see "Releasing Control Back to the System" on page 186.



Overriding a UCM or Application

1. Open the Simplified Override dialog afrom a graphic or the from the override button. The override dialog box displays (see Figure 171).

Note:

If you are overriding an application object it must have a Present Value property. Area is an example of an application with a Present Value property.

Override "Air Handler" X Override Details: Unoccupied Optimal Start Manual Auto Occupied Optimal Stop Demand Limit Duty Cycle Priority Shutdown Night Economize Night Heat/Cool Present Value Value is controlled to Occupied by Area since 1/30/2006 1:00:00 PM Cancel Help ПK Apply More >>

Figure 171. UCM Override Dialog Box

Note:

Click on the More control button at the bottom of the dialog box to display the Priority Arrays box. To perform an override, your default control priority level must be higher than priority level listed in the box. If not, refer to "Using the Advanced Systems Override" on page 187.

Note:

An error message in red will display in the override details box warning you that your access level isn't high enough to override the object. For more options, refer to "Using the Advanced Systems Override" on page 187.

- 2. Click the Manual on the Auto/Manual knob.
- 3. Click and drag the indicator in the slider bar to the setting you want.
- 4. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.





To return control back to the BAS, see "Releasing Control Back to the System" on page 186.

Releasing Control Back to the System

To return control back to the BAS after performing an override, do the following:

Trane Objects

- 1. In the Simplified Override dialog box, click Auto in the Auto/Manual knob.
- 2. Click OK to close the dialog box, or click Apply to view the updated Present Value field and priority arrays.

Note:

Clicking on Auto to release control back to the BAS also removes all user overrides from the priority array.

Non-Trane BACnet devices

- 1. In the Simplified Override dialog box, click on the Release in the Release/Change to knob.
- 2. Click OK to close the dialog box, or click Apply to view the updated Present Value field and priority arrays.

Note:

Clicking Release only releases control at the user's default priority level.





Using the Advanced Systems Override

You can perform overrides using the advanced Override dialog box (see Figure 172). However, Trane encourage's you to define your default priority level in Site Security and then override from graphics by using the simplified overrides dialog box (see Chapter 11, "Setting Up the Simplified Override Dialog Box").

- To override an analog or binary output using the advanced override dialog box, see Chapter 17, "Overriding an Analog or Binary Output."
- To override an area using advanced override dialog box, see Chapter 20, "Overriding an Area."
- To override a UCM using advanced override dialog box, see Chapter 12, "Setting the Overrides for a UCM."

Figure 172.	Advanced	Override	Dialog	box
-------------	----------	----------	--------	-----

Request To-	Priority Array
C <u>R</u> elease Control	10 - Chiller Plant Control xx - Relinquish Default
Change Value to:	
Unoccupied	×
	Request of: Unoccupied
	By: Chiller Plant A
At Priority	Present Value
[12] II. I	Last Control: 10/3/00 5:25:25 PM
J12: User-Low	

Overriding System Values





Chapter 12 Using UCM Editors

Each unit control module (UCM) supported in the Tracer Summit system has an editor that allows you to create or to modify the UCM's setup. You access the UCM editors through the Unit Controllers menu item of the Setup menu.

You can use UCM editors to perform these tasks:

- Create, set up, and configure a UCM on the Tracer Summit system
- View the status of a UCM
- Troubleshoot a UCM

UCM editors share common layouts and functions. This chapter describes the typical editing tasks you can perform in UCM editors.

Note:

For detailed information about each UCM editor, refer to Tracer Summit online help (from any UCM editor, click the Help button or press the F1 key).

Accessing a UCM Editor

- 1. From the Setup menu, select Unit Controllers. The list of unit controllers displays.
- Select the name of the unit controller that you want to edit. The Select dialog box displays, listing each UCM of the type you selected. Figure 173 shows a Select dialog box for a Voyager Rooftop.

Figure 173. Select Dialog Box

S	elect Voyager 🛛 🔀
	Name
	Auditorium Rooftop 01
	Auditorium Rooftop 02-059
	Manufacturing Rooftop
	University Roottop
ļ	
	OK New Cancel Help



- 3. Click on the name of the unit controller you wish to edit.
- 4. Click OK to display the UCM editor. Figure 174 shows the editor for a Voyager Rooftop. For all editors, the Status screen displays when the editor is first opened. You can view this screen to monitor the UCM's status.

Figure 174. Voyager Rooftop Editor

Status	Setup	Configuration	Overrides	Classes			
Voyager N Unit Typ Operatin Onit Com Unit Con Diag: Co Diag: Co	ame: Au e: g Mode: ications: trol Source iagnostics omp 1 LPC omp 2 LPC	ditorium Rooftop 01 Constant Volume Occupied Heating Up e: Tracer Input Open Input Open Reset			Displ	ay Unit Graphic Report	
			Cle	ose	Save	Open Another	Help



Creating a New UCM

To create a new UCM, you perform these tasks:

- If no UCMs of the appropriate type are defined yet, set up the new UCM type (as described in this section)
- Name and set the address of the new UCM (as described in this section)
- Set up the UCM (see "Setting Up a UCM" on page 193)
- Configure the UCM, if appropriate (see "Configuring a UCM" on page 194)
- Set overrides for the UCM, if appropriate (see "Setting the Overrides for a UCM" on page 195)
- Route alarms and events and define security access (see "Routing Alarms and Events and Setting Security Access" on page 197)

The following steps show you how to create a new UCM using the Setup menu's Unit Controllers option. You can also create a new UCM while configuring a site. For more information, see Chapter 6, "Configuring Tracer Summit BCU Sites."

To create a new UCM:

- 1. From the Setup menu, select Unit Controllers. The list of defined UCM types displays.
- 2. Make a selection:
 - If the appropriate UCM type is listed, select it. The Select dialog box displays. Then click New.
 - If the appropriate UCM type is not listed, select New UCM Type. The Select New UCM Type dialog box displays, listing UCM types that have not yet been defined in the site (see Figure 175). Click the appropriate UCM type, then click OK.

Figure 175. Select New UCM Type Dialog Box

Select New UCM Type	×
Absorption Chiller (UCP2) CenT raVac Chiller (UCP1) Commercial Self Contained (CSC) Helical Rotary Chiller (UCP2) Horizon Absorption Chiller Scroll Chiller (CGA/CGW) Series R Chiller (RTA/RTW) Terminal Unit Controller (TUC) Tracer Remote Station (TRS) Trane Europe Chiller VariT rac II Central Control Panel (CCP) VariT rane UCM I VariT rane UCM I	
OK Cancel	Help

For both options, the New UCM Name/Address dialog box displays (see Figure 176 on page 192).



Using UCM Editors

New UCM Name/Ad	ldress X
UCM Name:	
UCM Type:	Voyager
- Address Informatio	n
BCU:	Manufacturing BCU
Comm. Link:	Link 2 Non Isolated Comm 4
Address:	50
	OK Cancel Help

Figure 176. New UCM Name/Address Dialog Box

3. In the UCM Name field, enter a unique name for the UCM. Make the name as informative as possible. Use a maximum of 32 characters.

You must enter a name before you can save the new UCM. You can modify the name at any time from the Setup screen of the UCM editor.

- 4. In the BCU field, select a BCU. Only BCUs with compatible links are listed.
- 5. In the Comm. Link field, select a communication link. Only compatible links are listed.
- 6. In the Address field, select an address for this UCM. Only valid, unused addresses are listed.
- 7. Click OK. The UCM editor specific to the UCM type you have selected displays.
- 8. Set up the new UCM (see "Setting Up a UCM" on page 193).

Note:

You can not create a UCM in excess of the links capacity.


Setting Up a UCM

The tasks for setting up a UCM vary depending upon the UCM type. In general, you can:

- Change the name of the UCM
- Control UCM setpoints
- Change the UCM link and address
- Select or change other setup information

You can make these changes from the UCM editor's Setup screen. This screen contains the fields necessary for Tracer Summit to control the UCM. Depending on the type of UCM, there may be other dedicated Setup tabs for specific UCM functions. For detailed information on the fields of the Setup screen, click the Help button.

To set up a UCM:

1. From the UCM editor, click the Setup tab. Figure 177 shows an example Setup screen. The fields vary depending upon the UCM type.

Figure 177. Example Setup Screen

Status Setup Configuration Overrides	Classes
Voyager Name: Auditorium Rooftop 01	A
Control Source Unit Control Source: C Local C Tracer Heat/Cool Mode: C Local C Tracer Tracer Heat/Cool Mode: Cooling V	Address BCU: ICS University Link: 2 Address: 58 Change Address
On/Off Times Minimum On Time: 10 Minutes Minimum Off Time: 10 Minutes	Control Offset Control Offset: Control Offset Value: 3.0 Degrees
Occupied Setpoints Cooling:	Constant Volume Occupied Fan Mode
Apply Differential 2.0 Degrees	-
Close	e Save Open Another Help

- 2. Edit the setup information as necessary.
- 3. To change the UCM link or address, click the Change Address button. Make your changes and click OK.



Configuring a UCM

Most UCM editors have a Configuration screen where you can set UCM configuration information. Because this information is stored locally in the UCM, you cannot edit the information on the Configuration screen when the UCM is offline. For detailed information on the fields of the Configuration screen, click the Help button.

To configure a UCM:

1. From the UCM editor, click the Configuration tab. Figure 178 shows an example Configuration screen. The fields vary depending upon the UCM type.

Figure 178. Example Configuration Screen

Status	Setup	Configuration	Overrides	Classes			
-Сс Г	ompressor (Enable I	Control					
- Si	ipply Air Co	ontrol					
	Enable S	upply Air Tempering					
			Cl	ose	Save	Open Another	Help

2. Edit the configuration information as necessary.



Setting the Overrides for a UCM

When you override a UCM from the Overrides tab of a UCM editor, you perform the override using the advanced Override dialog box. However, Trane encourages you to define your default priority level in Site Security and override from graphics by using the simplified overrides dialog box (see "Setting Up the Simplified Override Dialog Box" on page 172). From the advanced override dialog box you can:

- Release control at the specific priority
- Change the present value at a specific priority

Note:

You will need access to change the priority level. Priority control ranges from 1 (highest) to 16 (lowest). The command with the highest priority controls the object. To take control off, you must select the Release Control option button. Then the next highest priority commands the object.

Overriding the Present Value of a UCM

1. From the UCM editor, click the Override tab. Figure 179 shows an example Overrides screen. All UCM editors have an Override button. The remaining fields vary depending upon the UCM type.

Figure 17	9. Exam	ple Overri	des Screen
-----------	---------	------------	------------

Status Setup Configuration	Overrides	Classes
Operating Mode Present Value: Occupied		Override
Compressors		Heating Control
Compressor Control:	-	Heating Control: 🔁 Auto 💌
Cooling Stages Enabled: 😰 3	-	Enable Emergency Heat Mode
Ventilation Override		Disable Auxillary Heat
Pressurization Mode: 🖉 Auto	-	Service Test
Exhaust Mode:	~	Test Mode: Unit Off
Purge Mode:	•	Status: No test in progress
Air Dampers		
Outside Air Dampers: 🛃 Auto	Y	Start
	Clo	ose Save Open Another Help



2. Click the Override button. The Override dialog box displays with Change Value To selected (see Figure 180 on page 196).

Note:

If you need help with overrides, click the Tutorial button (see Figure 180 on page 196) to open the Tracer Summit Daily Operations Tutorial.

Figure 180. Override Dialog Box

Override "Horizon Absorption Chiller"	×
Request To	Priority Array 10 - Chiller Plant Control xx - Relinquish Default
	Request of: Unoccupied By: Chiller Plant A
At Priority 12: User - Low	Present Value Last Control: 10/3/00 5:25:25 PM
Tutorial	OK Cancel Apply Help

- 3. In the Change Value To list box, select the desired value. For a UCM, the available values are: Unoccupied, Optimal Stop, Occupied, Optimal Start, Demand Limit, Duty Cycle, Priority Shutdown, Night Economize, and Night Heat/Cool.
- 4. Click the At Priority list box to select a priority.
- 5. Click Apply to perform the override. The Priority Array list updates.
- 6. Click OK to close the Override dialog box.

Releasing Control of a UCM

- 1. From the UCM editor, click the Override tab.
- 2. Click the Override button. The Override dialog box displays.
- 3. Click the Release Control button. The Change Value To button becomes inactive and the system selects the highest priority from the At Priority list box.
- 4. Click Apply to release control at the selected priority level. The Priority Array list updates, or click OK to apply the changes and close the dialog box.



Overriding Other Values in a UCM

- 1. From the UCM editor, click the Override tab.
- 2. Edit the override fields as necessary.
- 3. Click Apply to release control at the selected priority level. The Priority Array list updates, or click OK to apply the changes and close the dialog box.

Routing Alarms and Events and Setting Security Access

All UCM editors have a Classes screen where you can assign alarm and event routing and set security access for a UCM.

Defining Alarm and Event Routing

1. From the UCM editor, click the Classes tab. Figure 181 shows an example Classes screen.

Figure 181. Example Classes Screen

Status	Setup	Configu	ration	Overrides	Classes]		
Control C Alarm Cl Manua Auto F	ilass: asses al Reset Di Reset Diagr	agnostics: nostics:	2 - Syste 4 - Syste 3 - Syste	m Log m Critical Alarm m Alarm	· · ·	 		
Security	ational Wa	rnings:	2 · Syste	m Log				
				CI	ose	Save	Open Another	Help

- 2. In the Control Class field, select a control class. The control class defines the event class that will receive an event message when the present value of the UCM changes.
- 3. In each diagnostic field in the Alarm Classes group, select an appropriate event class for routing alarms.





Setting Security Access

- 1. From the UCM editor, click the Classes tab.
- 2. Click the Security Classes button. The Change Security Classes dialog box displays (see Figure 182).

Figure 182. Change Security Classes Dialog Box

lass	Class Name	Access
1	System Operator	
2	Day Operator	
3	Night Operator	
4	Security	
5	Chiller Plant	
6	Administration	
7	Manufacturing	
8	ICS University	
9	Engineering	
10	Applications	
11	Marketing	
12	Finance	
13	Training	
14	Product Commun.	
15	Human Resources	
16	Production	

- 3. Click on the Access field next to each class to grant or deny access to the security class. A check in the field grants access. If unchecked, permission to the security class is denied.
- 4. Click OK to close the Change Security Classes dialog box.

Deleting a UCM

You cannot delete a UCM from a UCM editor. Use the Delete Object function from the Tools menu to delete a UCM (see Chapter 39, "Deleting Objects and Sites").



Chapter 13 Creating Groups of Sites

Grouping sites allow you to quickly and easily service and monitor large numbers of sites. Creating groups is a feature that comes with the Enterprise Management package.

With grouping capabilities, you can group sites together and edit schedules or change setpoints once for the group. This saves time because you do not have to make the same edit for each site. In addition, with Tracer Summit grouping functions, you can:

- Put a site in multiple groups.
- Perform global changes to the groups. These changes can affect all sites in the group.
- Use Task Manager to schedule a scan of groups of sites rather than scheduling individual site scans.
- Use message forwarding and call centers to organize message forwarding by site groups rather than individual sites.

Note:

Group configuration does not appear as a selection on the Setup menu unless you have both site security and group security access. For more information about group security, see "Setting Up Group Security" on page 144.





Creating a Group

Use Group Configuration to put sites into groups. You can also include groups of sites within groups.

Note:

You must create sites before you can add or create groups (see "Creating a Site" on page 34).

To create a group:

1. From the Setup menu, select Group Configuration. The Select Group dialog box displays (see Figure 183).

Figure 183. Select Group Dialog Box

S	elect Group	×
	Name group1	
	group2	
	OK <u>N</u> ew Cancel <u>H</u> elp	

2. Click New. The Group Configuration dialog box displays (see Figure 184).

Figure 184. Group Configuration Dialog Box

Group Configuration	×
Group name: region3	
Available Site(s)	Selected Site(s)
bax102 Powers	Add>> < <remove add="" all="">> </remove>
Close Save	Open Another Help

3. In the Group name field, type the group name.



4. In the Available Site(s) list, select the desired sites.

Note:

Groups of sites display in the Available site(s) list with a "(g)" prefix.

- 5. Click Add to add the sites to the Current Member(s) list.
- 6. Click Save to save the new group to the database.
- 7. Click Close.

Modifying Groups

After you create a group, any changes that you make to this group are made to all of the site(s) or group(s) of sites in the group.

To modify groups:

- 1. From the Group Configuration dialog box:
 - $\bullet \quad Click \ Add \ to \ add \ selected \ members \ to \ the \ Selected \ Site(s) \ list$
 - Click Remove to remove selected members from the Selected Site(s) list
- 2. Click Save to save the new group to the database.
- 3. Click Close.

Using Groups to Make Global Changes

Through a global change you can edit or modify the setup of many objects of the same type in one action. This means that you do not have to open the editor for every object to make a change. For more information about making global changes using groups, see "Applying Global Changes to Multiple Sites" on page 205.

Sample Scenarios

The following scenarios show how you might use groups to make global changes.

Scenario 1

As a building manager for a school district you have to override all of the schedules for 15 schools because of weather. To do this, you access the Time of Day application and click the Group Select button. You specify the "All Buildings" group and select all of the affected schedules. After you click OK, the global changes editor for time of day appears.



In the editor, you remove all of the start events for the day and click the Save As Exception button. When the Download Scheduler dialog box appears, you download the changes to the sites immediately. The workstation scans all of the sites in the database to download the schedule exceptions for that day.

Scenario 2

As a manager of several stores you need to change the cooling setpoint for the offices in all your stores. You select Area from the Setup menu, then click Group Select on the Select Area dialog box. You select the All Stores group and select all the office areas. After you click OK, the global changes editor for Area appears. On the Setup screen you change the occupied cooling setpoint and save your changes. In the Download Scheduler dialog box you schedule the changes to download that night at 2:00 a.m. Later the next morning, the workstation begins a scan task at 2:00 a.m., scanning all of the sites to download the area setpoint change.

Creating Scan Tasks for Groups

The Task Manager application scans groups that contain BCU sites, Tracer 100, or Tracker sites. For details about scanning groups with the Task Manager, see "Creating a Task for Groups of Sites" on page 226.

Creating Call Centers for Groups of Sites

Call centers allow you to e-mail and send cell phone pager messages for alarms and event occurrences to selected recipients. These recipients can receive these alarms for groups of sites that you specify in Message Forwarding. For information about sending alarm e-mails for groups of sites, see "Selecting a Site/Group from Which Alarms Are Sent" on page 245.

Deleting Groups

Use the Delete Objects utility to delete a group or groups. For more information on using the utility, see "Deleting a Site" on page 658.



Chapter 14 Making Global Changes

To make global changes, you select multiple objects of the same type and edit them simultaneously with the editor for that object type. For example, you can select specific schedules in groups of sites and edit all the schedules in the schedule editor.

Making changes to single sites is part of the Tracer Summit standard software. Making global changes to groups of sites is part of the Enterprise Management package.

Using the global change function editor of the object editor, you can quickly and simply change many objects in a single site or across numerous sites that are part of groups. The following types of objects allow global changes:

- Area
- Binary inputs/outputs
- Analog inputs/outputs
- Time of Day schedules (BCU and Tracer 100)
- Calculated binaries (type 08 points), see "Viewing and Modifying BCU Objects" on page 207
- Calculated analogs (type 11 points), see "Viewing and Modifying BCU Objects" on page 207
- Thermostat control modules
- Voyager rooftops
- VAV II/III/IV



Applying Global Changes to a Single Site

Use the following procedure to make global changes (such as changing all binary outputs) in a single site.

To make global changes to a single site:

- 1. Log on to the desired site.
- 2. From the Setup menu, select an object. For example, from the Inputs/ Outputs submenu, select Binary Outputs. The Select Object dialog box displays (see Figure 185).
- 3. Select the objects you want to change at this site.

Figure 185. Select Object Dialog Box: Select Binary Output

Select Binary Output		×
Name	Object ID	Device ID
Office VOM	2	2
Dutput 2	3 4	2
Parking Lot Lights	1	1
Note: To select multiple items in the edit window, hold want to select. To select a column of items, hold item within select on the column of items and to select a column of items and the select more selected as the selected selected as the selected selected as the selected selected selected as the selected	down the CTRL key, and d down the SHIFT key an	then click each item you d click on the first and last
Kein within the country of items you want to selec	<i>.</i>	
New Select All Group Select	ок с	Cancel Help

- 4. Click OK. The editor of the object type you selected displays.
- 5. In the editor, change the desired properties of the object.

For example, from the Binary Output editor, click the Setup tab and change the On State Label from On to Enable.

- 6. Click Save. The editor saves the changes to the objects you selected in step 3. The Save Successful dialog box displays.
- 7. Click OK in the Save Successful to return to the editor.



Applying Global Changes to Multiple Sites

To make global changes to groups of sites, you must have the proper security access and groups must already exist (see "Creating a Group" on page 200).

To globally change multiple sites:

- 1. Log on to a site.
- 2. Select an object type to modify.

For example, from the Setup menu, select Unit Controllers, then select Voyager Rooftops. The Select Object dialog box displays.

3. Click the Group Select button. The group-level Select Object dialog box displays (see Figure 186).

Figure 186. Select Object for Global Edit Dialog Box

Select Voyager Rooftop object/s for global edit Available Groups Region2	X
Available Objects in the group Site Object Add > Add All >> < Remove	All Site Object Objects selected for editing Site Object Powers Voyager Rooftop-1-50 Powers Voyager Rooftop-1-51 Powers Voyager Rooftop-1-53 Powers Voyager RooftopCom3-1-54 Powers Voyager RooftopCom3-1-55 SI Voyager Rooftop

4. In the Available Groups field, select the desired group. The Available Objects list displays all the Voyager rooftops that are in the sites which are members of the specified group.

Note:

To sort the object list alphanumerically by object name, click the Object header.



- 5. In the Available Objects in the Group list, select the desired object(s).
- $6. \quad Click \ Add \ to \ add \ the \ object(s) \ to \ the \ Objects \ selected \ for \ editing \ list.$
- 7. Click OK. The editor for the object type displays.
- 8. Click the Setup tab.
- 9. Change any available attribute of the object.
- 10. Click Save. The Global Changes Schedule Download dialog box displays (see Figure 187).

Figure 187. Global Changes - Schedule a Download Dialog Box

Global Changes - Schedule	e a Do w nload	×		
To schedule a time to download the global changes to the affected sites, select one of the following and click [OK]. If you don't want to schedule a download, click [Cancel].				
Download immedi	ately			
O Download on	03-Aug-01 at 09:15 AM			
	OK <u>C</u> ancel <u>H</u> elp			

11. Select a time to download the changes.

- Click the Download Immediately button to download the changes right away.
- Click the Download on button to schedule a date and time to download the changes.

Note:

When you define a download time, it does not simply download the most recent changes. It also downloads any other changes that you made to the database.

12. Click OK. The changes will be sent to the database at the time you designated. The Save Successful dialog box displays.

Note:

To verify that the changes downloaded successfully, check the error log.

13. Click OK on the Save Successful dialog box to return to the editor.

Viewing and Modifying BCU Objects



Viewing and Modifying BCU Objects

You can upload, download, view, and modify BCU objects. You can globally change these objects across single sites or across multiple sites containing BCU panels.

Note:

To change objects across multiple sites, you must have installed the Enterprise Management package.

You can view these objects online or offline in the editors. You can modify them online or upload them to your workstation and then modify them through the appropriate editor.

Uploading and Downloading BCU Objects

When you are connected to a BCU site, Tracer Summit downloads any changes you make immediately to the BCU. When you change objects offline, Tracer Summit downloads the change to the BCU the next time that you connect to the site.

If you have installed the Building Management or Enterprise Management package, you can schedule the Task Manager to connect to the site. See Chapter 15, "Using the Task Manager" for more information.

Note:

Task Manager schedules scans, and during this process uploads and downloads the correct items.

Accessing the Analog or Binary Editor

1. From the Setup menu, select Inputs/Outputs. Then, select either Analog Output or Binary Output. Figure 188 on page 208 shows an example of the Select Analog Object dialog box.



Making Global Changes

Name					
Inside Air Temp					
Outside Air Tem	ηp				
Supply Air Temp	P .				
I racer control p	point				
lote Toselect want tos	t multiple items in th elect. To select a	e edit window, holo column of items, ho	d down the CTRL k	ey, and then click key and click on 1	each item you the first and last
lote Toselect want tos item withi	t multiple items in th select. To select a in the column of iter	e edit window, holo column of items, ho ms you want to sele	d down the CTRL k Id down the SHIFT sot.	ey, and then click key and click on t	each item you the first and last

Figure 188. Select Analog Object Dialog Box

- 2. Select the desired object.
- 3. Click OK. The Analog Output/Binary Output object editor appears, with the object name displayed (see Figure 189).

Figure 189. Analog Output Object Editor

Status	Setup	Ovenides	Classes	
		o		-
	Analog	Uutput Name	: Inside Al	ir Lemp
	Present	:Value:	???	
	_ BCU -			I
	Nan	ne:	Ьси	



Modifying the Present Value for Analog or Binary Objects

The following procedures describe how to override or release analog or binary output objects while performing:

- Offline single object overrides
- Offline or online global overrides within a single site
- Offline or online global overrides across multiple sites

Note:

When performing a global change across multiple sites you can override an object at the priority level selected in the At Priority drop-down list, even if your site level security does not allow access to priority level.

Changing the present value of an Analog or Binary Object

- 1. From the Setup menu, highlight Input/Output. Then select either the Analog Output or Binary Output editor. The dialog box for the object displays.
- 2. Select the object(s) that you want to override.
- 3. Click OK to display the editor.
- 4. Click the Overrides tab. The Overrides screen displays (see Figure 190).

Figure 190. Overrides Screen

Status	Setup	Overrides	Classes
_ 0	perating	Mode	
F	Present \	/alue: ???	Override

5. Click the Override button. The Override Object dialog box appears (see Figure 191 on page 210).



Making Global Changes

Override "Inside Air Temp"	×	Override "North Lobby Lights"
Request To		Request To
C Release Control		C Belease Control
Change Value to	.00	Change Value to:
		h
At Priority		- At Priority
12: User - Low	I	12: User - Low
ОКСа	ncel Help	OK Cancel Help
Dialog displayed for analog	Dialog disp binary outr	Diayed for Duts

Figure 191. Override Object Dialog Box

- 6. Click the Change Value to option.
- 7. For analog output objects, type the desired value in the field. For binary output objects, select one of the states listed in the drop-down list.
- 8. To apply the change, select one of the priority levels in the At Priority drop-down list. Priority 1 is the highest, priority 16 is the lowest.

Note:

The analog or binary output objects may not control to your modification if the object is being controlled at a higher priority than the one you select.

- 9. Click OK to make the change and close the dialog box.
 - If you make the change while connected to the site, the change is immediately sent to the panel.
 - If you make the change offline, you must connect to the BCU panel for the modification to take effect.





Releasing the present value of an Analog or Binary Object

- 1. From the Setup menu, highlight Input/Output. Then select Analog or Binary Output. The dialog box for the object displays.
- $2. \quad Select \ the \ object(s) \ that \ you \ want \ to \ release.$
- 3. Click OK to display the editor.
- 4. Click the Overrides tab. The Overrides screen displays (see Figure 190 on page 209).
- 5. Click the Override button. The Override Object dialog box displays (see Figure 191).
- 6. Click the Release Control option. The requested value field (no label) is disabled.
- 7. Select the priority level in the At Priority drop-down box to be released. The object will not longer control to the value applied to this priority level. Priority 1 is the highest, priority 16 is the lowest.
- 8. Click OK.

Note:

If you make the change offline, you must connect to the BCU panel for the modification to take effect.

Globally Changing Analog or Binary Output Objects

Modifying the present value of a analog/binary output is the most important feature of these editors. There are two likely types of global changes that you might make using analog/binary output objects:

- Change the multiple analog/binary output points (turn the lights on in all areas, for example) within a single site or across multiple sites.
- Change an analog/binary output object that is in each of several identical or very closely matched sites and all programmed in the same manner. You can change a calculated analog/binary point that is in each site using the global change functions.

To globally change objects:

• Follow the procedure in "Applying Global Changes to a Single Site" on page 204 or "Applying Global Changes to Multiple Sites" on page 205.



Viewing and Modifying Calculated Analog and Binary Objects

You can upload, download, view, and modify calculated analog and binary objects if you have installed the Tracer 100/Tracker Communication package. You can globally change these objects across single sites or across multiple sites containing Tracer 100 panels.

Note:

To change objects across multiple sites, you must have installed the Enterprise Management package.

You can view these objects online or offline in the editors with the terminal emulation screen (see the section on terminal emulation in the *Daily Operations* guide). You can modify them online or upload them to your workstation and then modify them through the appropriate editor.

Calculated binary and analog objects are only used by Tracer 100 series panels. Calculated binaries (point type 08) and calculated analogs (point type 11) are similar to binary and analog inputs/outputs, but they are not associated with hardware. See *Tracer 100 Series Programming Guide* (EMTB-PG-11) for more information about calculated binaries and analogs.

Uploading and Downloading Calculated Binary/Analog Objects

To view calculated binary/analog objects with their editors, you must first upload them from the Tracer 100 panel. Uploading occurs as part of normal processing when you connect to a Tracer 100 site.

When you are connected to a Tracer 100 panel, Tracer Summit downloads any changes you make immediately to the panel. When you change objects offline, Tracer Summit downloads the change to the panel the next time that you connect to the site.

If you have installed the Building Management or Enterprise Management package, you can schedule the Task Manager to connect to the site. See Chapter 15, "Using the Task Manager" for more information.

Note:

Task Manager schedules scans, and during this process uploads downloads the correct items.



Viewing and Modifying Calculated Analog and Binary Objects

Accessing the Calculated Binary or Analog Editor

1. From the Setup menu, select Calculated Binary or Calculated Analog. The select object dialog box appears (see Figure 192).

Figure 19	92. 3	Select	Calculated	Object	Dialog	Box
-----------	-------	--------	------------	--------	--------	-----

Select Calculated Analog			×
Name	Object ID	Device ID	
A	11-04	1	
BMN CONTROL POINT	11-05	1	
INSIDE TEMPERATURE	11-01	1	
	11-02	1	
SUPPLY AIR TEMP	11-03	I	
1			
Note: To select multiple items in the edit window, hold dow want to select. To select a column of items, hold do item within the column of items you want to select.	vn the CTRL key, and wwn the SHIFT key and	then click each item you d click on the first and las	st
Select All Group Select	OK C	ancel Help	

- 2. Select which object you want to check.
- 3. Click OK. The calculated object editor appears, with the object displayed (see Figure 193).

Figure 193. Calculated Object Editor

Status	Overrides
	08-05 Name is: BOOLEAN CONTROL PT
	Present Value: On
ſ	Remote Unit
	Name: SUMMIT1
	Communications: Remote Unit Online



Modifying Calculated Binary or Analog Objects

Use the following procedures to override or release calculated binary or analog objects. When you are connected to the Tracer 100, access the calculated analog or binary object through terminal emulation or through the Tracer Summit editors. Any changes you make to the object are sent immediately to the Tracer 100 panel.

When you are offline, you can access calculated analog or binary object status only through the editors. Since Tracer Summit is not connected to the Tracer 100, the editor does not display the alarm condition of the point, but it does display the last-known values. To have your changes take effect, you must connect to the panel (see "Uploading and Downloading BCU Objects" on page 207).

Modifying the Calculated Binary or Analog Object through Terminal Emulation

- 1. Connect to the Tracer 100 site using the procedure for terminal emulation described in the *Daily Operations* guide.
- 2. Modify the object.

If you want to use the terminal emulation menus to change the object, follow the procedures described in the Tracer 100 Series *Operator's Guide* (EMTB-OG-15).

Overriding the Calculated Binary or Analog Object through the Editor

- 1. From the Setup menu, select Calculated Binary or Calculated Analog. The object dialog box appears.
- 2. Select the object that you want to override.
- 3. Click OK.
- 4. Click the Overrides tab. The Overrides screen displays (see Figure 194).

Figure 194. Overrides Screen

Status	Overrides		
	– Operating Mode –		
	Present Value:	725.0 DEG, by Operator Override - No changes	Override

5. Click the Override button. The Override Object dialog box displays (see Figure 191 on page 210).



Viewing and Modifying Calculated Analog and Binary Objects

Override "BMN CONTROL POINT"	×
Request to Release Control Change Value to: 76	Priority Array 02 - Building Management System Request of: 76 DEG
 ОК	Cancel Apply Help

Figure 195. Override Object Dialog Box

- 6. Click the Change Value to button.
- 7. Position the cursor in the field (the unlabeled field next to the Change Value to button. Type the desired value.
- 8. Click OK to make the change and close the dialog box or click Apply to make the change but keep the dialog box open.
 - If you make the change while connected to the Tracer 100, the change is immediately sent to the panel.
 - If you make the change offline, you must connect to the panel for the modification to take effect, (see "Uploading and Downloading BCU Objects" on page 207).

Releasing a Calculated Binary or Analog Object through the Editor

- 1. From the Setup menu, select Calculated Binary or Calculated Analog. The select object dialog box appears.
- 2. Select the object that you want to release.
- 3. Click OK.
- 4. Click the Overrides tab. The Overrides screen displays (see Figure 190 on page 209).
- 5. Click the Override button. The Override Object dialog box appears (see Figure 191).
- 6. Click the Release Control button The requested value field (no label) is disabled.
- 7. Click OK or Apply.



- If you make the change while connected to the Tracer 100, the change is immediately sent to the panel.
- If you make the change offline, you must connect to the panel for the modification to take effect, (see "Uploading and Downloading BCU Objects" on page 207).

Globally Changing Calculated Binary or Analog Objects

Modifying the present value of a calculated analog/binary is the most important feature of these editors. There are two likely types of global changes that you might make using calculated analog/binary objects:

- Change multiple calculated analog/binary points (turn the lights on in all areas, for example) within a single site or across multiple sites.
- Change a calculated object that is in each of several identical or very closely matched sites and all programmed in the same manner. You can change a calculated analog/binary point that is in each site using the global change functions.

To globally change calculated objects:

Follow the procedure in "Applying Global Changes to a Single Site" on page 204 or "Applying Global Changes to Multiple Sites" on page 205.



Chapter 15 Using the Task Manager

Task Manager helps you automate tasks to reduce the time it takes to maintain a site or groups of sites. Task Manager lets you schedule BCU, Tracer 100, or Tracker site backups, archive the event log, or scan sites to occur whenever your workstation is on.

With Task Manager, you can change site information offline and schedule these changes to download to specific sites or groups at night, when telephone rates are low. If you have a large number of sites that require extensive changes, you can schedule these for non-work hours, saving this time for other duties.

The Task Manager is part of the Building Management and Enterprise Management packages. These add-ons to Tracer Summit enable you to create tasks for hundreds or even thousands of separate sites from a central location.

The Task Manager lets you:

- Download during a scan the offline global changes that you made to any of the site types
- Schedule automatic scans for BCU sites, as well as Tracer 100 and Tracker sites (if you have the Tracer 100/Tracker Communication package).
- Schedule site backups that you can use to restore sites at a later date
- Schedule regular archives of the workstation event log
- Edit existing tasks to modify schedules, actions, or site members
- Schedule one-time events or repeating tasks
- Initiate manual scans on the site you are connected to
- Log scan errors in Task Log. (For more information, see the sections on the event log in the *Daily Operations* guide)
- Perform operations on the workstation while scans and other tasks are being run



Defining the Four Tasks

Task Manager can perform a task for a site at a time that you schedule or perform the task immediately. The four tasks that Task Manager can perform include:

- Archiving the event log
- Backing up sites
- Scanning sites
- Panel backups

Archiving the Event Log

With Task Manager you can schedule the automatic archiving of the event log as it exists for each site in your workstation database. The information is stored as a Microsoft Excel-compatible file format. You can import this file into Microsoft Excel to view it.

With Task Manager you can also archive the event log as a text file, as well as specify where the archive is stored in the Tracer Summit backup folder.

Backing Up Sites

Task Manager performs immediate or scheduled backups of BCU and Tracer 100. This function makes a copy of the information from your workstation database for BCU or Tracer 100 sites. A BDB file is created for each of the selected sites.

The backup files can be saved to any location that you specify.

Scanning Sites

During a site scan, Tracer Summit connects to a site and downloads changes to the site and collects information from the site.

Note:

The Tracer Summit site scan is similar to the scan function of Building Management Network (BMN) software. Task Manager, however, does not perform the reporting functions during scans that BMN software does.

Task Manager can scan Tracer Summit BCU sites, as well as Tracer 100 and Tracker sites (if you have the Tracer 100/Tracker Communication package).

During a site scan, Tracer Summit uploads or downloads site information. For BCU sites, Task Manager uploads all object types. For Tracer 100 or Tracker sites, Task Manager uploads schedules, alarms, holidays, and calculated binary/analog objects.

During a site scan, Task Manager also determines whether you have made offline changes to the site. If you have changed a site's information at the workstation, Task Manager downloads this information to the



panel first. If you have not made offline changes, Task Manager uploads the panel information.

Panel Backups

During a panel backup, Tracer Summit connects to Tracer 100 sites and creates a backup file of the panel's database. If a Tracer 100 site has multiple panels linked to it, Tracer Summit creates separate .SAV files for each panel.

Note:

If you want to back up individual panels of a site, use the Backup a Remote selection from the Setup menu. For more information, see "Creating .SAV files for Tracer 100 Panels" on page 412.

This backup creates a .SAV file, which you can use to restore the panel (see "Restoring a Tracer 100 Panel" on page 668). You cannot, however, use this file to restore the panel information to your workstation database. You can only use .BDB files to restore site information to the workstation database.



Accessing the Task Manager Schedule Screen

• From the Setup Menu, select Task Manager. The Task Manager Schedule screen appears (see Figure 196).

Figure 196. Task Manager Schedule Screen

Time		08/09/01			1			0.04		
8 AM	30			•		Aug	just 2	2001		Ľ
9 AM)0 30			<u>Sun</u> 29	<u>Mon</u> 30	Tue 31	Wed	Thu 2	Fri 3	<u>S</u> a
10 AN)0 30			5 12 19	6 13 20	14 21	8 15 22	16 23	10 17 24	1 1 2
11 AN)0 30			26 2	27 3	28 4	29 5	30 6	31 7	1
12 PN)0 30			Ne	ew Ta	sk		Run	Imme	dia
13 PN)0 30									
14 PN)0 30	scan site								
15 PN)0 30	scan site2								
16 PN)0 30									
17 PN)0		•							



Run Immediate Scan on a Single Site

Run an immediate scan on a single connected site when you need to upload or download site information right away. For example, a facility manager for a school building may need to run an immediate scan to download a schedule for a change due to weather. You might also run an immediate scan to back up a site before performing global changes.

If you have installed the Building Management or Enterprise Management package, you can run immediate scans on BCU sites. You can scan Tracer 100 or Tracker sites if you have installed the Tracer 100/Tracker Communication package and either Building Management or Enterprise Management.

Note:

For more information about running an immediate scan on groups of sites after making global changes, see "Applying Global Changes to Multiple Sites" on page 205.

To run an immediate scan on a single site:

1. From the Task Manager Schedule screen, click the Run Immediate button. The Select Task dialog box displays (see Figure 197).

Figure 197. Select Task Dialog Box

Select Task	×
Archive Event Log Site Backup Site Scan Tracer 100 Backup Par	nel
OK Ca	ncel Help

- 2. Select the desired task:
 - Select Archive Event Log to create a backup of the workstation's alarms and events as they exist in the database
 - Select Site Backup to create a .BDB file for the site
 - Select Site Scan to upload information from the site or download changes made to the site offline in Tracer Summit
 - Select Tracer 100 panel backup to create a .SAV file for a Tracer 100 site and all of its linked panels
- 3. Click OK to run the task. The word "Scan" appears in a blue box in the lower right-hand corner of the screen.

When the task ends, the scan indicator on the status bar disappears.



To access the Scan Status dialog box, double-click the blue box on the status bar. The Scan Progress dialog box appears.

Note:

To verify that the changes downloaded successfully, check the error log.

Creating a Task for a Single Site

Use the following procedure to schedule a task for a single site. Tasks you can schedule include archiving the workstation event log, backing up sites of panels, and scanning Tracer 100, Tracker, or BCU sites (see "Defining the Four Tasks" on page 218).

With the Task Schedule Wizard, you can specify the start time and date of these tasks. You can schedule a task as a once-only task, or schedule it to occur on a daily, weekly, monthly, or other specified time interval.

To create a task for a single site:

- 1. From the Task Manager Schedule, click the New Task button. The Welcome dialog box of the Task Schedule Wizard (1 of 4) appears.
- 2. Click Next. The Recurring Type screen (2 of 4) of the Task Schedule Wizard displays.
- 3. Select the interval at which the task should occur:
 - Click the Once button if the task will occur just once
 - Click the Daily button if the task will occur every day, beginning with the start date
 - Click the Weekly button, if the task will occur at weekly intervals
 - Click the Monthly button if the task will occur at specific times in a month
 - Click Specified Time Interval if the task must occur intermittently
- 4. Click Next. Screen 3 of 4 of the Task Schedule Wizard appears (see Figure 198 on page 223).
- 5. On Screen 3 of 4, select the appropriate data:
 - On the once screen, select the start time and schedule start
 - On the daily screen, select the start time, how often to perform the task, and the effective period
 - On the weekly schedule, select the start time, the days of the week, how often, and the effective period
 - On the monthly schedule, select the start time, the days of the month, how often, and the effective period



• On the time interval screen, select the start time, time interval, and effective period

Note:

"Every 1 weeks" means every week. "Every 2 weeks" means every other week, and so on.

Figure 198. Task Schedule Wizard: Weekly (3 of 4)

Task Schedule Wizard - Weekly [3 of 4]	<u>×</u>
Select the starting time and date for your event/task	
Start time : 3:47 PM	
Select the days of the week you want your event/ta Sunday IThursday Monday IThursday Tuesday Saturday Wednesday	sk to occur.
Select how often you would like your event/task to Every 1 week(s)	occur.
Specifiy the period in which the schedule will be in e Schedule Start: 8/ 9/01	ffect. Schedule End: No End Date 8/30/01
< <u>B</u> a	ck <u>N</u> ext > Cancel Help

- 6. Click Next. The Task Schedule Wizard Summary screen (4 of 4) appears. Confirm that the task schedule is correct.
- 7. Click Finish. The Task Setup dialog box displays (see Figure 199 on page 224). Summary information from the Task Schedule Wizard appears in the Schedule field and the cursor is blinking in the Description field.



Using the Task Manager

Task Setup		x
Description: Schedule:	<u>∧</u> E	dit Schedule
Tasks O Workstation Tasks		
Actions Archive Event Log		
Site Tasks Actions Tasks		
Site Scan		
Available Site(s) Add All >> Add > Add > Kemove Kemove All		
	Cancel	Help

Figure 199. Single Site User Task Setup Dialog Box

8. In the Description field, type a task description.

The description that you type appears in the Task Manager Schedule field after you save the task.

- 9. Select the type of task you want to perform:
 - Click the Workstation Tasks button to perform a workstation task.
 - Click the Site Tasks button if you want to perform a site task.
- 10. Select the specific task you want to perform:
 - Click the Archive Event Log check box to archive the event log. To save the archive as a text file, perform the procedure in "Saving the Event Log Archive File" on page 228.
 - Click the Tracer 100 panel backup check box if you want to create a .SAV file for a Tracer 100 site. If you want to save the file in a specific location, perform the procedure in "Specifying Where to Save a Backup File" on page 229.
 - Click the Site Backup check box if you want to create a .BDB file for a site. If you want to save the file in a specific location, perform



the procedure in "Specifying Where to Save a Backup File" on page 229.

- Click the Site Scan check box if you want to scan the site to upload data from the site or download changes you have made offline.
- If you desire, click both the Site Backup and Site Scan check boxes. Note, however, that if you have made offline changes to the site, these will download first. Beyond this, there is no order in which the task runs. If you require, for example, that the site be scanned first and then backed up, schedule these items as separate tasks in the order you want them to run.
- 11. If you are backing up a site or scanning a site, in the Available Site(s) list, select the site that you want create the task for.
- 12. Click Add to add the site to the Selected Site(s) list.
- 13. Click OK. The Task Setup dialog box closes and the Task Manager Schedule displays.
- 14. Click Save. The new task is saved to the workstation database and displays in the Task Manager Schedule (see Figure 200).

The task runs at the time you schedule.

Note:

The task does not appear in the Task Manager Schedule until you click Save. To verify that the changes downloaded successfully, check the error log.

Figure 200.	Task Manager	Schedule Screen	with a	Task
-------------	--------------	------------------------	--------	------

Task Manager Schedule			
Time	08/19/01		
5 AM)0 30		
6 AM	10 30		
7 AM	10 30		
8 AM	30 30		
9 AM	30 30		
10 AN	30 30		
11 AN	10 30 Perform Sunday Eventlog Archive		
12 PN	30 30		
13 PN)0 30	•	



Creating a Task for Groups of Sites

Task Manager makes maintaining groups of sites easier, more effective, and more efficient. You can back up groups of sites and scan them to upload information or download changes that you made to them offline. You can also create .SAV files for an entire site or groups of sites, including all the panels linked to them.

Note:

See Chapter 14, "Making Global Changes" for procedures for global changes and scheduling them to be downloaded to groups of sites.

With the Task Schedule Wizard, you specify the start time and date of the task. You can schedule a task as a once-only task, or schedule it to occur on a daily, weekly, monthly, or other specified time interval.

To create a scan task for groups of sites:

- 1. Repeat steps 1 through 10 in "Creating a Task for a Single Site" on page 222.
- $\label{eq:steps} 2. \ \ In the Available Site(s) list, select the sites and/or groups that you are creating the task for.$

Note:

When you assign a group to a scheduled task, all sites that are members of the group when the task runs are included in the task. Use the Group Configuration dialog box to add or remove sites from the group after you have created the task (see "Creating a Group" on page 200). In this way, sites that are added to a group after you schedule the group for a task are included when the task runs.

- 3. Click Add to add the sites and/or groups to the Selected Site(s) list.
- 4. Click OK. The Task Setup dialog box closes and the Task Manager Schedule displays.
- 5. Click Save. The new task is saved to the workstation database and displays in the Task Manager Schedule.

At the scheduled time, the task runs.

Note:

The task does not appear in the task manager schedule until you click Save. To verify that the changes downloaded successfully, check the error log.

Modifying Tasks



Modifying Tasks

Use the following procedures to modify Tracer Summit tasks created with Task Manager.

Editing a Task

- 1. From the Task Manager Schedule, double-click the task you want to edit in the Task Manager Schedule. The Task Setup dialog box displays the description, schedule, task actions and site assignments for the edited task.
- 2. From this screen, you can perform the following:
 - Change the description for the task
 - Click Edit Schedule to modify the timing of the task
 - Select different tasks and/or task options
 - Add and/or remove sites from the scheduled task
- 3. After you edit the task, click OK to display the Task Manager Schedule.
- 4. Click Save. The edited task is saved to the workstation database and displays in the Task Manager Schedule.

Deleting a Task

- 1. From the Task Manager Schedule, click the task you want to delete in the Task Manager Schedule view. The selected task is highlighted.
- 2. Press the Delete key.
- 3. Click Save. The task you selected and all further occurrences of it are removed from the system.



Saving the Event Log Archive File

Use the following procedure to save the event log archive as a text $\left(.TXT\right)$ file or Microsoft Excel file.

To save the eventlog archive file in a specific format:

1. After selecting the archive event log option, click in the Archive Eventlog cell. A button with three dots (ellipsis) displays (see Figure 201).

Figure 201. Archive Event Log Button with Three Dots

• Workstation Tasks		
Actions		
Archive Eventlog		
·		

2. Click the button with three dots. The Archive Options dialog box appears (see Figure 202).

Figure 202. Archive Options Dialog Box

Archive Options	×
File Type	
Excel Format	
O Text Format	
Path	
C:\Program Files\Tracer Summit\bac	Browse
OK Cancel	Help

- 3. Select the file format to save the file in:
 - Click the Excel Format button to save the archive as a Microsoft Excel file
 - Click the Text Format button to save the archive as a text file
- 4. In the Path field, specify the folder on your hard drive where you want to save the file.

Click the Browse button to select a path using the Microsoft Browse for Folder dialog box.

- 5. Click OK to save your selection. The Archive Options dialog box disappears and the Task Manager Schedule becomes available again.
- 6. Continue programming the task.


Specifying Where to Save a Backup File

Use the following procedure to select where the site backup is saved.

To save the site backup file in a specific folder:

1. After selecting the Site Backup or Tracer 100 panel backup option, click in the cell. A button with three dots (ellipsis) displays (see Figure 203).

Figure 203. Site Backup Button with Three Dots

Actions	
Tracer 100 Backup Panel	
Site Backup	
Site Scan	

2. Click the button with three dots. The Site Backup Options dialog box appears.

Note:

When changing Panel Backup options, the Site Backup Options dialog box appears (see Figure 204).

Figure 204. Site Backup Options Dialog Box

Site Backup Options	×	l
Path		
C:\Program Files\Tracer Summit\backup	Browse	
OK Cancel	Help	

3. In the Path field, specify the folder on your hard drive where you want to save the file.

Click the Browse button to select a path using the Microsoft Browse for Folder dialog box.

- 4. Click OK to save your changes.
- 5. Continue programming the task.

Note:

The default save location for backup files is the \Tracer Summit\Backup directory.

Using the Task Manager





Chapter 16 Message Forwarding and Call Centers

Message forwarding enables a Tracer Summit workstation to forward alarms at scheduled times to a group of e-mail addresses or to individuals. Recipients who are on-call can receive the e-mails on their PCs or on e-mail enabled pagers and cell phones.

The basic features of message forwarding are set up in System Options (see "Setting Up the Events Printer, Message Forwarding, and Event Log Settings" on page 569). More advanced features are set up in the Message Forwarding editor. These advanced features are only available in the Building Management and Enterprise Management packages. This chapter only discusses these advanced features

Note:

Tracer 100 and Tracker sites are available when you have the Tracer 100/Tracker Communications package installed, as well as either the Building Management or Enterprise Management packages.

Note:

Once set up, message forwarding and call centers work in the background. Message forwarding will send out alarm messages even when you are not logged onto a site, but, Tracer Summit must be running, and your PC must be logged in to your company's mail server or your PC modem line must not be busy.



What is a Call Center

A call center is a group of e-mail recipients. To better visualize how a call center works, think of a call center as a control room with Tracer Summit workstations, an operator, and one or more BAS recipients who are on- or off-site.

When working with call centers and message forwarding, remember the following:

- Message forwarding works with valid e-mail programs that support Messaging Application Programming Interface (MAPI) profiles. For example, a valid e-mail program is Microsoft Outlook but not Microsoft Outlook Express.
- The Tracer Summit workstation program communicates with a mail server. This server can be a LAN server or a modem-based, dial-in Internet service provider (ISP) server. If the mail server is a dial-up service, the Tracer Summit workstation dials up, sends the e-mail, and then closes the connection.

Background Considerations

Important issues you should remember when setting up message forwarding and call centers for Tracer Summit BCU, Tracer 100, and Tracker sites are the setup processes for message forwarding and call centers, as well as preliminary setup issues.

Previewing the Message Forwarding Setup Process

There are two main stages to setting up the forwarding of alarms by means of e-mail. Figure 205 on page 234 provides an overview of the message-forwarding setup process.

• Set up e-mail services—This is the responsibility of your information services (IS) department. The IS person sets up a mailbox on a mail server used by the Tracer Summit software. The mailbox resides on the server.

Every valid user of the Tracer Summit message forwarding application must have access to this mailbox. Also, the IS person must set up client-side access to this mailbox e-mail account profile in the Tracer Summit workstation.

A user profile is a group of settings that define how a mailbox is set up for a particular user. For example, a profile may include access to a mailbox on Microsoft Exchange Server and specify that the Outlook Address Book appear in the Address Book dialog box. A profile can contain any number of information services.

Generally, you only need one user profile. If you sometimes need to work with a different set of information services, it may be helpful to create an additional profile to use those services. If more than one person uses the same computer, each person should have a separate

Background Considerations



profile to keep personal items secure. Tracer Summit uses the profile to send alarms to the mail server.

- Set up e-mail message forwarding—This includes setting up the call center and recipient in the Tracer Summit software. While the facility is unattended, you can send cell phone pager alarms that originate from sites as e-mails to on-call recipients.
 - The call center forwarding schedule displays the times when the call center forwards alarms to various recipients by means of their e-mail addresses. A typical schedule for alarm forwarding is between 5 p.m. to 8 a.m., Monday to Friday, and all day on weekends and holidays.
 - The recipient on-call schedule is the time when an on-call recipient receives the e-mails. In a typical work situation, recipients are on-call on a rotating basis. When setting up a call center, make sure that the unattended hours of the facilities are covered.
 - In Figure 205 on page 234, the Select Sites/Groups and Event Classes/Priorities boxes represent steps in which you specify which sites or groups and what alarms need to be forwarded. Besides sites and groups, you can schedule alarms for BCU event classes and alarm priorities for Tracer 100 or Tracker panels.

IMPORTANT

Your workstation must be set up as an event receiver in BCU sites, with a telephone number defined in Tracer 100 and Tracker sites, and other requirements for alarms must be satisfied, as described in Chapter 6, "Configuring Tracer Summit BCU Sites."



Message Forwarding and Call Centers



Figure 205. Setting Up Message Forwarding Flowchart

Preliminary Issues to Consider before Creating a Call Center

Before creating message-forwarding call centers, review the following information:

- Each call center has its own forwarding schedule. Therefore, you must create multiple call centers when the same recipient needs to receive alarms from specific event classes or priorities on different schedules.
- When you route e-mails to a pager service, the length of the message might be truncated to meet the specifications of the cell phone pager. The Tracer Summit software sends the message in such a way that the most important information is carried in the first part of the message. How the message is truncated depends on the pager company and its policies.

For example, the following message: "TRANEBAS: 12/31/01 11:59AM, 1234567890, Ack Reqd, UCM Diagnostic, Ipak-1"

Background Considerations



might be truncated to: "TRANEBAS: 12/31/01 11:59AM, 1234567890."

- Message forwarding information is stored only in the workstation where you create it. This information never goes to the BCU or to other workstations on the site. Therefore, configure each workstation with its own alarm forwarding schedules.
- Some mail servers require that you be logged in to the client workstation operating system to communicate with the server. If your mail server requires this, then you must meet this requirement before and after setting up the message forwarding application.

To access message forwarding and call center features, your security settings must include the following:

- You have security access to the System Options editor to select an email profile.
- In client and server side e-mail services you have an e-mail profile set up. This profile is related to the address that appears in the From field in your e-mails.
- You have security access to the Message Forwarding editor (see "Assigning Access to Applications" on page 141).

Call Centers and Groups

You cannot create or edit groups from within the Message Forwarding editor. If you need to forward alarms from groups, then you must have the Enterprise Management package installed and defined groups along with their site members in Group Configuration. For more information about group configuration, see Chapter 13, "Creating Groups of Sites".



Accessing the Message Forwarding Editor

1. From the Setup menu, select Message Forwarding. The Select Call Center dialog box displays (see Figure 206).

Figure 206. Select Call Center Dialog Box

Select Call Center	1
BAX101 BAX102 BAX103 BAX104	
OK New Cancel Help	

- 2. Select the desired call center.
- 3. Click OK. The Message Forwarding editor displays (see Figure 207).

Figure 207. Message Forwarding Editor Screen Recipient Schedule Screen

Recipient Schedule	Forward Schedule Sites	Event Class	es]		
Call Center: BAX106					
Recipient	Address	9	Start Date	Scheduled Days	
Zeke Doe	Internal Address[Ze	eke Doe) 🛛 5	5/27/2003	Every 2 week(s) on Tuesday	
Jane Doe	Internal Address(Ja	ine Doe) 🛛 5	5/27/2003	Every 1 month(s) on the : 1st, and 15th	
Amanda Doe	Internal Address(Ar	manda 5	5/28/2003	This event occurs once.	
<u>A</u> dd <u>R</u> e	move <u>S</u> chedule	Test Ema	ail	5/27/2003 Check Schedule	



Setting Up Call Centers and Message Forwarding

If you have the Building Management or Enterprise Management package installed, you can set up call centers and advanced message forwarding for selected users, as well as to schedule when e-mails are sent and the types of alarms for which e-mails are sent.

To create a call center you:

- Add recipients and schedule when they should receive e-mails on the Recipient Schedule screen
- Schedule the on-call hours of the facility on the Forward Schedule screen
- Define the sites and/or groups for which the e-mails should be sent on the Sites screen
- Define the alarm classes for which you want e-mails sent to recipients on the Event Classes screen

Registering E-Mail Profiles

When you first access message forwarding, you must register your user profile. A user profile is a group of settings that define how the mail server is set up for a particular user. For example, a profile may include access to a mailbox on Microsoft Exchange Server and specify that the Outlook Address Book appears in the Address Book dialog box.

To register e-mail profiles:

1. From the Setup menu, select Message Forwarding. The Select Profile dialog box appears. One or more user profiles display in the Profile list box.

If the Tracer Summit software does not detect an already existing user profile, an error dialog box appears. If a profile is loaded but no profile is registered, the software prompts you to select a profile.

- 2. Select a profile.
- 3. Click OK. The Select Call Center dialog box appears.





Creating a Call Center

When you create a call center you add recipients who will receive alarm e-mails during on-call hours. On the Recipient Schedule screen you specify the days and dates when each recipient should receive e-mails from Tracer Summit.

Note:

To save a call center you must first add recipients and schedule when they should receive e-mails.

To create a call center:

- 1. From the Setup menu, select Message Forwarding. The Select Call Center dialog box displays.
- 2. Click New.
- 3. Type the call center name in the Select Call Center dialog box.
- 4. Click OK. The Message Forwarding editor launches. The name of the call center displays at the top of the screen.
- 5. To add recipient(s), click the Recipient Schedule tab. The Recipient Schedule screen appears (see Figure 208).
- 6. Click Add. The address book of the e-mail program, such as an Outlook Address Book, displays.
- 7. Select one or more e-mail addresses to which to send alarms.
- 8. Click OK. The names of the recipients display in the list on the Recipient Schedule screen (see Figure 208).

Figure 208. Recipient Schedule Screen

Recipient Schedule Forwa	rd Schedule Sites Event Cla	isses	
Call Center: BAX106			
Recipient	Address	Start Date	Scheduled Days
Zeke Doe	Internal Address(Zeke Doe)	5/27/2003	Every 2 week(s) on Tuesday
Jane Doe	Internal Address(Jane Doe)	5/27/2003	Every 1 month(s) on the : 1st, and 15th
Amanda Doe	Internal Address(Amanda	5/28/2003	This event occurs once.
Add Remove	Schodula Tost 5	mail	5/27/2003
Add <u>R</u> emove	<u>S</u> chedule Test E	mail	5/2//2003 Check Schedule



Scheduling When Recipients Receive E-mails

Next, schedule when recipients receive e-mails. Each recipient can have a different schedule when they are on-call.

To schedule when recipients receive e-mails:

- 1. From the Message Forwarding editor, click the Recipient Schedule tab.
- 2. Select the name of a recipient in the list.
- 3. Click the Schedule button. The Recipient Schedule dialog box displays (see Figure 209).
- 4. Select the schedule start date, how often the e-mail should be sent (once or daily), and how often the schedule should occur (weekly, daily or monthly).

For example, in Figure 209 the recipient schedule is set up to: specify May 27, 2003 as the Start Date; indicate the day of the week the e-mail is sent; repeat every two weeks.

Figure 209. Recipient Schedule

	×
Select days on which to forward e-mail to	b this recipient:
Start Date: 8/19/2003 💌	
C Every Day	C Daily
C Start Date Only	Every 2 👘 days
• Weekly	C Monthly
Sunday	Specific Days
Tuesday	
🔲 Wednesday 🔲 Thursday	Example: 1, 15, 30
Friday	O The First 🔽 Sunday
Every 2 week(s)	Every 1 in month(s)
ОК	Cancel Help

- 5. Click OK to save the schedule. The recipient's name, e-mail address, start date, and schedule display in the recipients Schedule screen.
- 6. Click Save to store the recipients and their e-mail schedules to the database.





Testing E-mail Forwarding

Use this procedure to verify that Tracer Summit can send an e-mail to the recipients selected in the list of the current call center.

To send the e-mail, the Tracer Summit software:

- Uses the profile that is registered with Tracer Summit
- Uses the mailbox that is set up on the mail server. IS sets up the profile to access this mailbox

To test e-mail forwarding:

- 1. From the Message Forwarding editor, click the Recipient Schedule tab.
- 2. Select the recipient(s) that you want to receive the test e-mail.
- 3. Click the Test Email button. The Tracer Summit software sends the test e-mail.

The e-mail contains the following message: "This is a test of the Test Email button."

4. Verify with the recipients that they received an e-mail message from Tracer Summit.

Checking the Schedule of Existing Recipients

Use this procedure to check the e-mail forwarding schedules of recipients. You can also use it to make sure that a date for receiving e-mails is covered by one or more recipients.

To check the schedule for existing recipients:

- 1. From the Message Forwarding editor, click the Recipient Schedule tab.
- 2. Select one or more recipients in the grid whose message forwarding schedules you want to check.
- 3. Click the Check Schedule arrow next to the Check Schedule button and select the date you want from the calendar (see Figure 210).

Figure 210. Check Schedule Calendar

		8/	16/01				Check Schedule
•		Aug	just 2	2001		Ţ	
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
29	30	31	1	2	3	4	
5	6	7	8	9	10	11	
12	13	14	15	()	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30	31	1	
2	3	4	5	6	7	8	
Ð) Tod	ay: 7	7/9/0	1			

4. Click the Check Schedule button. A dialog box displays indicating if the selected recipient receives e-mail on the date you specified in step 3.



5. Click OK.

Creating a Message Forwarding Schedule

You can regard the Forward Schedule as representing the times when a facility is open and not open. When the facility is not open, you want to forward alarm messages to on-call recipients.

On the Forward Schedule screen, specify the operating hours of the call center. Define the start time when e-mails should be sent and the end time.

For example, a normal work day is from 8 a.m. to 5 p.m. These are the times when people are on-site. After-hours is from 5 p.m. to 8 a.m. During after-hours, the individuals designated to receive e-mails on the Recipient Schedule screen will receive any alarm messages generated.

To schedule when e-mails are sent:

- 1. From the Message Forwarding Editor, click the Forward Schedule tab.
- 2. In the schedule, click the cell that corresponds to the time and day you want the e-mail forwarding schedule to start. Select Set Start from the pop-up menu.
- 3. Click in the cell when you want the schedule to end and select Set End (see Figure 211 on page 242).

The cell set as Set Start is bright green and is labeled Start. The cell set as Set End is red and is labeled End. The cells in between these two cells are blue.



Message Forwarding and Call Centers

Recipient Sch	edule	Forward	Schedule	Sites	Event Gl	asses		
Forward At All Times								
Time	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	ŀ
05:30 AM								
06:00 AM								
06:30 AM								
07:00 AM								
07:30 AM								
08:00 AM			End					
08:30 AM								
09:00 AM								
09:30 AM								
10:00 AM								
10:30 AM								
11:00 AM								
11:30 AM								
12:00 PM								
12:30 PM								
01:00 PM								
01:30 PM								
02:00 PM								
02:30 PM								
03:00 PM								
03:30 PM								
04:00 PM								
04:30 PM								
05:00 PM		Start		с., с. <u>.</u>				
05:30 PM				Set Start				
06:00 PM				Set <u>E</u> nd				
06:30 PM								

Figure 211. Forward Schedule Screen

- 4. Repeat steps 2 and 3 to complete the schedule for any remaining weekdays and weekends.
- 5. Click Save.

Setting a Holiday Schedule

Setting up a holiday schedule is a two-step process. First, add holiday dates to the Selected Dates list box. Then, go into each call center and check the Send e-mail checkbox (see Figure 212 on page 243).

To add holidays:

- 1. Click the Edit button to display the Select Dates dialog box.
- 2. Select the holiday date from the calendar.
- 3. Click the Add Date button to add the date to Selected Dates list.
- 4. Click Save to save the holiday date to the list.
- 5. Click Okay to return to the editor.

Note:

It doesn't matter which call center you are in when you add dates to the list, the date will become a holiday for all call centers. However, each call center can decide whether to observe the holiday dates or not, depending on whether the Send e-mail checkbox is checked or unchecked.



	🔽 Se	nd e-ma	ail all d	lay on	holida	ys				
Send e-mail checkbox 🧹	- Call C	enter H 19 2003	loliday	2U			Edit]		
	SHEC	. Date	5						Selected Dates	
			M	au 20	10.3			ľ	56/29/2003	
	5ur 27 4 11 18 25 1	Mon 28 5 12 19 26 2	Tue 29 6 13 20 27 3	Wed 30 7 14 21 28 4	1 1 8 15 22 29 5	Fri 2 9 16 23 30 6	5at 3 10 17 24 31 7			Save Cancel Help
				Add D	ate				Remove Date	

Figure 212. Holiday Calendar

To remove holidays

- 1. Click the Edit button to display the Select Dates dialog box.
- 2. From the Selected Dates list, select the holiday you want to remove.
- 3. Click the Remove Date button to delete the date.
- 4. Click Save to save your changes.
- 5. Click Okay to return to the editor.

Note:

The holiday date is removed from all call centers.

To send e-mail on holidays:

• To have e-mail automatically sent on holidays, check the send e-mail check box (See Figure 212).

Note:

If you check this box, the call center will send e-mail on all holidays displayed in the list box. If you leave this box unchecked, no e-mail will be sent on any of the holidays.

To disable sending e-mail on holidays:

• Clear the send e-mail checkbox. The holiday schedule is disabled.

Note:

Disabling the holidays only applies to the currently open call center. To disable holidays for other call centers, open each one individually and repeat step 1 above.





Forwarding Alarms at All Times

You can have e-mails for alarm events sent at all hours of the day. This may prove useful when you need to override the call center schedule.

To forward alarms at all times:

- 1. From the Message Forwarding editor, click the Forward Schedule tab.
- 2. Click the Forward At All Times check box (see Figure 213).

Figure 213. Forward at All Times Check Box

Recipient Schedule	Forward Schedule	Sites	Event Classes	
Forward At All Tim	ies			

When alarms are forwarded at all times:

- Any previously specified forwarding schedule is overridden and e-mails are sent 24 hours a day, seven days a week.
- The schedule grid is unavailable.
- The Call Center Holiday list box is unavailable.



Selecting a Site/Group from Which Alarms Are Sent

If you have the Tracer 100/Tracker Communication, Building Management, or Enterprise Management package installed, after you define recipients and set up schedules, you need to select the sites or groups from which e-mails for alarms will be sent. You can only select alarms for groups of sites when you have installed the Enterprise Management package (see Chapter 13, "Creating Groups of Sites").

To select sites or groups that forward messages:

- 1. From the Message Forwarding editor, click the Sites tab (see Figure 214).
- 2. Select the site in the Available list that you want to add to the Selected list.

These are the sites for which alarm messages will be sent as e-mails to recipients.

- For consecutive groups or sites, click on the first group or site, then hold down the Shift key and click on the next one.
- Otherwise, click on the first group or site, then hold down the Ctrl key and click on each additional one.
- 3. Click Add.

Figure 214. Message Forwarding – Sites Screen



4. Click Save.





Selecting Alarm Event Classes

Use this procedure to select the alarm event classes for which you want e-mails sent to recipients.

To select alarm event classes:

- 1. From the Message Forwarding Editor, click the Event Classes tab (see Figure 215).
- 2. Click the alarm class check boxes for which you want Tracer Summit to send an e-mail to recipients.

IMPORTANT

The event class names in the Event Classes screen do not update to match the event class names that you might have entered in site configuration (see "Example of User-Defined Event Classes" on page 82).

- 3. If you have Tracer sites selected, click the Tracer Priority alarms.
- 4. If you have Tracker sites selected, click the Tracker Priority alarms.

Figure 215. Event Classes Screen

Recipient Schedule	Forward Schedule	Sites	Event Classes	
Event classes and prio	ities apply to all sele	cted site	s.	
BCU Event Classes System Print System Log System Alarm System Critical A Event Class 5 Event Class 6 Event Class 7 Event Class 8 Event Class 9 Event Class 10	Event Ck Event Ck	ass 11 ass 12 ass 13 ass 14 ass 15 ass 16 ass 16 ass 17 ass 18 ass 19 ass 20	Tracer Priority Priority 1 Priority 2 Tracker Priority Priority 1	



Modifying Call Centers

Use the following procedures to modify call centers and their schedules.

Deleting a Call Center

- 1. From the Setup menu, select Message Forwarding. The Select Call Center dialog box displays.
- 2. Select a call center. The Message Forwarding editor displays.
- 3. From the File menu, select Delete Call Center. The Select Call Center dialog box displays.
- 4. Select the call center you want to delete.

Note:

If you try to delete a call center that is currently open, a warning message displays. It explains that the editor will shut down if you delete the call center.

- 5. Click OK. The call center is deleted from the database.
- 6. Click Save.
- 7. Click Save.

Registering with a Different E-mail Profile

• For more information on how to register a different e-mail profile, see "Selecting an E-mail Profile for Message Forwarding" on page 579.



Message Forwarding and Call Centers



Chapter 17 Creating Input/Output Objects

Input objects are used to generate alarms. Output objects are used to control devices and maintain calculated values for CPL routines. There are four types of input/output (I/O) objects:

- Analog input
- Binary input
- Analog output
- Binary output

The Tracer Summit system can simultaneously monitor hundreds of analog and binary inputs and outputs from every part of a facility.

Note:

Properties of objects can be viewed and controlled directly from a graphic or other application without the use of an I/O object. I/O objects are value for:

- Alarming
- Tracking changes in the Event Log
- Sharing data with other BACnet devices.



Creating an Analog Input

An analog input is a value such as a room temperature or an airflow pressure generated by a sensor or device on the Tracer Summit system.

Naming an Input and Defining the Referencer

- 1. From the Setup menu, select Inputs/Outputs. The list of inputs and outputs displays.
- 2. Select Analog Input. The Select Analog Input dialog box displays (see Figure 216).

Figure 216. Select Analog Input Dialog Box

Name		
3IR Humidity		
BIR Temp.		
CT A Temp.		
CT B Temp.		
Elevator Curre	nt Floor	
Elevator Oil P	essure	
Elevator Oil T	emp.	
levator Regu	lested Floor	
low Sensor		
lot Water Re	turn Temp.	
lot Water Su	poly Temp.	
E Air Pressure	1	
E Air Pump S	peed	
ote: To sele	ct multiple items in the edit window, hold do select. To select a column of items, hold d bin the column of items you want to select	own the CTRL key, and then click each item you down the SHIFT key and click on the first and last
item wit	and the column of items you want to select.	
item wit	and the column of Kenns you want to select.	

3. Click New. The New Analog Input Name dialog box displays (see Figure 217).



New Analog Input N	ame		X
Analog Input Name:			
	OK	Cancel	Help

- 4. Enter a name for the input. Make the name as informative as possible. Use a maximum of 32 characters.
- 5. Click OK. The Analog Input editor displays (see Figure 218 on page 251).



Figure 218.	Analog	Input	Editor
-------------	--------	-------	--------

Status	Setup Alarming Classes	
	Angleg Input Margary - Outdays Air Targa	
	Analog input Name. Outdoor Ali Temp	
	Current Status	
	Present Value: 85.90 Degrees Fahrenheit	
	Alarm Status: Normal	
	F BCU	
	Name: Administration BCU	
	Communications: BCU Online	

6. Click the Setup tab to display the Setup screen (see Figure 219).

Figure 219. Analog Input Editor Setup Screen

Status Setup Alarming	Classes	
Analog Input Name:	501 input percent	
Property Reference:		MP.501 / N.V. #40
Scaling Multiplier: Offset:	1.00000000 0.000	
Units: Percent	×	

- 7. Select a property reference for the input. For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls."
- 8. Enter values for these Scaling fields:
 - Multiplier
 - Offset
- 9. Select a unit designator from the Units list.
- 10. Continue using the editor to set up alarming (see the section "Setting Up Alarming" below) and to route alarms and to set security classes (see the section "Routing an Alarm or Warning and Selecting an Alarm Message" on page 253).



Setting Up Alarming

You can set up four types of alarm scenarios for an analog input:

- Off Alarm Limits. The analog input causes an alarm based on the Off Alarm Limits you enter. This is the default setting.
- On Alarm Limits. The analog input causes an alarm based on the On Alarm Limits you enter.
- Referencer control of On or Off Alarm Limits. A referencer controls the use of on or off limits.
- Disabled for no alarming.

The present value of an analog input is either inside or outside a range of normal values that you define. If the present value is outside the range of normal values, the analog input is either in a warning or alarm state. To direct the system to ignore a warning or alarm state, disable the alarm.

The alarming limit setup can be based on a binary property status. For example, you may want to allow a static pressure sensor input to alarm only when the associated fan is running. In this case, you would set up the fan status as the referencer for on/off alarm limits and set limits for on and off conditions appropriately.

To prevent nuisance alarms on start up of equipment, use the On Delay for Referencer field to set up a delay time before issuing an alarm on a change in status from off to on.

To set up an alarm:

1. Click the Alarming tab from the Analog Input editor to display the Alarming screen (see Figure 220).

Figure 220. Analog Input Editor Alarming Screen

tatus	Setup	Alarming	Classes					
•	Enable	Alarming						
(On or Off	Alarm Limi	ts: 🔁 🖓	n		-		
٦S	etup —							
	– Off Li High Low	nits Alarm: Alarm:	80.000 64.000	On Limits High Alarm: Low Alarm:	90.000 H	ligh Warning: ow Warning:	80.000	
	On Del	ay for Refe	rencer:	0 Minutes				
Ret	urn to No	ormal Dead	band:		0.00			
Mini	imum Tin	ne in Alarm	Before Notifica	ation:	0 Minutes			
CPL	. Progran	n to Run:			-	Delete	CPL Ref	

2. Click Enable Alarming to make the rest of the fields on the screen available for editing.



- 3. Select On or Off from the On or Off Alarm Limits list, or select a property reference (for detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls").
- 4. If you selected On or Off Alarm Limits:

On Alarm Limits: Enter High Alarm, Low Alarm, High Warning, Low Warning values in the On Alarm Limits Setup fields.

Off Alarm Limits: Enter High Alarm and Low Alarm values in the Off Alarm Limits Setup fields.

- 5. If you referenced a property, enter values in these fields:
 - High Alarm and Low Alarm (off limits)
 - High Alarm and Low Alarm, High Warning and Low Warning (on limits)
 - On Delay for Referencer
- 6. Enter a Return to Normal Deadband value.
- 7. Enter a Minimum Time in Alarm Before Notification value.
- 8. Select a CPL Program to run from the program list (optional).

Note:

A CPL routine is called by an entry into alarm and a return out of alarm.

Routing an Alarm or Warning and Selecting an Alarm Message

To select where alarms and warnings are routed, set the entry/exit classes using the Classes screen. You can also select an expanded message to display when an input enters an alarm state. (For information on expanded messages, see Chapter 30, "Using the Graphics Editor.")

To route an alarm or warning and select an alarm message:

1. Click the Classes tab from the Analog Input editor to display the Classes screen (see Figure 221 on page 254).

The fields available on the classes screen depend upon your selection in the On or Off Alarm Limits field on the Alarming screen. If you use a referencer to determine the input state, both the Off Alarm Limits and the On Alarm Limits fields are available.



Creating Input/Output Objects

Off Alarm Lim	ite					
on Alann Lin	Entry Class	:		Entry Message:		Exit Class:
High Alarm:	3 - System	Alarm	•		-	1 - System Print 💌
Low Alarm:	No Notifica 1 - System 2 - System 3 - System	ation Print Log Alarm			•	1 - System Print
On Alarm Lim	its					
	Entry Class	:		Entry Message:		Exit Class:
High Alarm:	3 - System	Alarm	•		•	1 - System Print 📃
High Warning	: 2 - System	Log	-		-	1 - System Print
Low Warning:	2 - System	Log	•		•	1 - System Print
Low Alarm:	3 - System	Alarm	•		•	1 - System Print 💌
	, .			,		

Figure 221. Analog Input Editor Classes Screen

- 2. Select an entry routing class for each type of alarm or warning.
- 3. Select an expanded message for each type of alarm or warning (optional). (See Chapter 30, "Using the Graphics Editor", for details on creating expanded messages.)

Note:

The expanded message assigned in the Analog Input editor has priority over the expanded message assigned on the Event Classes tab in the Site Configuration editor. If the Entry Message field for the Analog Input or Binary Input is set to None then the Expanded Message field in Site Configuration will be used.

- 4. Select an exit routing class for each type of alarm or warning.
- 5. Click the Security Classes button if you want to limit access to this object using security classes. (See "Setting Security Classes" on page 274.)



Creating a Binary Input

Binary inputs are two-state inputs, such as on/off or alarm/normal. The inputs are generated by momentary switches or standard (maintained) switching devices.

Naming an Input and Defining the Reference

- 1. From the Setup menu, select Inputs/Outputs. The list of inputs and outputs displays.
- 2. Select Binary Input. The Select Binary Input dialog box displays (see Figure 222).



Name IR Derator Safety Switch IR Operator Safety Switch IW Pump A Status IW Pump B Status IW Pump D Status IW Pump D Status IW Pump D Status IW Pump D Status IW Pump C Status IV Pump C Status I	1111111111111					
III Uperator Safety Switch CHW Pump A Status CHW Pump C Status CHW Pump D Status CHW Pump D Status CHW Pump D Status CHW Pump B Status CHW Pump C Status CHW	Name					
HW Pump A Status HW Pump D Status HW Pump D Status W Pump D Status W Pump A Status W Pump C Status I W Pump	IR Uperato	Safety Switch				
HW Pump B Status HW Pump D Status HW Pump D Status W Pump A Status W Pump B Status W Pump C Status W P	HW Pump	A Status				
HW Pump C Status HW Pump D Status W Pump B Status W Pump B Status W Pump C Status ity Filter evator Door Status evator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	HW Pump	B Status				
HW Pump D Status W Pump B Status W Pump C Status W Pump C Status inty Filter levator Door Status levator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	HW Pump	C Status				
W Pump & Status W Pump B Status W Pump C Status ity Filter levator Door Status levator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	HW Pump	D Status				
W Pump B Status W Pump C Status ity Filter levator Door Status evator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	W Pump A	Status				
W Pump C Status ity Filter levator Door Status levator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	W Pump B	Status				
ity Filter levator Door Status levator Status an Status of Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	W Pump C	Status				
levator Door Status levator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item you want to select. To select a column of items, hold down the SHIFT key and click on the first and la item within the column of items you want to select.	irty Filter					
evator Status an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	evator Doc	or Status				
an Status ot Water Flow te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	evator Stal	us				
te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and li item within the column of items you want to select.	an Status					
te: To select multiple items in the edit window, hold down the CTRL key, and then click each item yo want to select. To select a column of items, hold down the SHIFT key and click on the first and k item within the column of items you want to select.	ot Water Fl	ow				
						762 - 591
	ote: Tosel want t item w	ect multiple items in th o select. To select a c ithin the column of iten	edit window, holi olumn of items, ho is you want to sele	d down the CTRL ke old down the SHIFT ect.	y, and then click e key and click on t	each item you he first and las

3. Click New. The New Binary Input Name dialog box displays (see Figure 223).



		×
Cano	cel	Help
	Can	Cancel

- 4. Enter a name for the input. Make the name as informative as possible. Use a maximum of 32 characters.
- 5. Click OK to display the Binary Input editor (see Figure 224 on page 256).



Creating Input/Output Objects

Status Setup Alarming Classes	
Binam Input Manage East Status	
binaiy input ivane. Tran Status	
Current Status	
Present Value: Off	
Alarm Status: Normal	
BCU	
Name: Administration BCU	
Communications: BCI Unline	

Figure 224. Binary Input Editor

6. Click the Setup tab to display the Setup screen (see Figure 225).

Figure 225. Binary Input Editor Setup Screen

	Status	Setup	Alarm	ning	Classes						
Γ	Bin	ary Input Na	ame:	Fan S	tatus						
	Pro	perty Refere	ence:	Admin	Air Handle	r / B	inary In[3]]	 	 	
	On	State Label	:I:	On		Ī					
	Off	State Label	:l:	Off							
	_ P	olarity ——									
	Ģ	Normal									
	0	Reversed	d								

- 7. Select a property reference for the input. For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls".
- 8. Enter text in the On State Label field. Use up to eight characters.
- 9. Enter text in the Off State Label field (close contact = On). Use up to eight characters.
- 10. Click on Normal or Reversed to select the polarity for the input (close contact = Off).
- 11. Continue using the editor to set up alarming (see the section "Setting Up Alarming" below), to route alarms and warnings, and to set secu-



rity classes, if desired (see the section "Routing an Alarm or Warning and Selecting an Alarm Message" on page 253).

Setting Up Alarming

You can set up three types of alarm scenarios for a binary input:

- Alarming always enabled
- Enable/disable via referencer
- Feedback referencing

Binary inputs have two states. They can either be active (on) or inactive (off). You define which of these states is the alarm state. You can also choose to disable the alarm state. If you only want to process alarms under certain conditions, select a binary referencer to determine whether alarms are enabled or disabled.

If you want alarm processing to occur and the normal state of the binary input can change dynamically (sometimes active is normal, sometimes inactive is normal), specify a feedback reference to determine if the binary input is in alarm. A feedback reference is a binary property in the system that mirrors the state of the referenced property of the binary input. If the present value of the binary input and the current value of the feedback reference do not match, the binary input is in alarm.

For example, choose the binary output command for fan start/stop as a feedback referencer for the fan status. If the two states do not match, an alarm is generated.

To set up an alarm:

1. Click the Alarming tab from the Binary Input editor to display the Alarming screen (see Figure 226).

Status	Setup	Alarming	Classes]
I⊽ Ena −Alari	ble Alarmir ning Type O Alarn O Enab O Feed	ning Always Ena Ile/Disable Follo Iback Referenci	bled ws Reference ng	er
- Setu	Input A	larm State	Ala	arm whenever the binary input state matches the Input arm State.
	Enable/I Delay for)isable Referen Enable/Disable	cer:	0 Minutes
Minim CPL F	um Time ir Irogram to	Alarm Before N Run:	otification:	0 Minutes

Figure 226. Binary Input Editor Alarming Screen



- 2. Click Enable Alarming to make the rest of the fields on the screen available for editing.
- 3. Select Alarming Always Enabled, Enable/Disable Follows Referencer, or Feedback Referencing.
 - If you selected Alarming Always Enabled, select On or Off in the Input Alarm State.
 - If you selected Enable/Disable Follows Referencer or Feedback Referencing, select a property reference. For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls".
 - If you selected Enable/Disable Follows Referencer, enter the number of minutes to delay in the Delay for Enable/Disable Referencer field.
- 4. Enter a Minimum Time in Alarm Before Notification value.
- 5. Select a CPL Program to run from the program list (optional).

Note:

A CPL routine runs whenever the state changes. The routing must determine the state in order to provide the necessary control.

Routing an Alarm or Warning and Selecting an Alarm Message

To select where alarms and warnings are routed, set the entry/exit routing classes using the Classes screen in the Binary Input editor. You can also select an expanded message to display when an input enters an alarm state.

To route an alarm or warning:

1. Click the Classes tab from the Binary Input editor to display the Classes screen (see Figure 227).

Figure 227. Binary Input Editor Classes Screen

Status	Setup	Alarming	Classes]
	– Alarm C	lasses —		
	Entr	y Class:	3 - System	n Alarm
	Entr	y Message:		<u> </u>
	Exit	Class:	1 - System	n Print
	Se	curity Classe	es	



- 2. Select a routing class in the Entry Class field.
- 3. Select an expanded message in the Entry Message field (optional). (See Chapter 30, "Using the Graphics Editor", for details on creating expanded messages.)

Note:

The expanded message assigned in the Binary Input editor has priority over the expanded message assigned on the Event Classes tab in the Site Configuration editor. If the Entry Message field for the Analog Input or Binary Input is set to None then the Expanded Message field in Site Configuration will be used.

- 4. Select a routing class in the Exit Class field.
- 5. Click the Security Classes button if you want to limit access to this object using security classes. (See "Setting Security Classes" on page 274.)

Creating an Analog Output

Analog outputs control devices on the Tracer Summit system, such as a damper actuator or a water valve. The most common use of analog outputs is to provide setpoints for control of end devices. For example you can send the same setpoint to all air handling units (AHUs) using a global reference of the analog output object value.

Analog output values are generated either by application programs or are entered manually.

Naming the Output and Defining the Reference

- 1. From the Setup menu, select Inputs/Outputs. The list of inputs and outputs displays.
- 2. Select Analog Output. The Select Analog Output dialog box displays (see Figure 228 on page 260).



Creating Input/Output Objects

ixame				
1234567890				
A DOGUS MEG AUP Regue ICSU New AOD				
Sogus ICSU humiditu AOP				
Sogus ICSU pressure AOP				
Rogus ICSU temp AOP				
Boaus ICSU time AOP				
CHW Add Deadband				
CT A Bypass				
CT B Bypass				
Chiller Add Time				
Chiller Subtract Time				
ote: To select multiple items in the en want to select. To select a colu	it window, hold down th nn of items, hold down l	ne CTRL key, and the SHIFT key ar	l then click each i nd click on the firs	tem you t and last

Figure 228. Select Analog Output Dialog Box

3. Click New. The New Analog Output Name dialog box displays (see Figure 229).

Figure 229. New Analog Output Name Dialog Box

New Analog Output Name		×
Analog Output Name:		
OK	Cancel	Help

- 4. Enter a name for the output. Make the name as informative as possible. Use a maximum of 32 characters.
- 5. Click OK to display the Analog Output editor (see Figure 230).

Figure 230. Analog Output Editor

Status	Setup	Overrides	Classes			
,	Analog Outp	out Name: Cool	ing Coil Valve			
	Present Valu	ie: 50	00 Pa	rcent		
	r reserie v die	. JU.	00 10	iooni i		
	-BCU					
	Name	e: Adı	ministration BC	U		
	Comm	nunications: BCI	J Online			



6. Click the Setup tab to display the Setup screen (see Figure 231).

Figure 231. Analog Output Editor Setup Screen

Status	Setup	Overrides	Classes	
Ai Pi	nalog Ou roperty F	itput Name: leference:	AMS Area Override Time	
D	efault Va	alue:	60.00	
Г	Scaling		Output Range	
		Multiplier:	0.50000000 Minimum: 0.000 +	
		Offset:	0.000 × Maximum: 720.000 ×	
L.				
U	nits:	Minute	Global Referencers	
	🗌 Mult	i-State Analo	Output	

- 7. Select a property reference for the output (using a referencer is optional). For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls."
- 8. Enter values for these Scaling fields:
 - Multiplier
 - Offset
- 9. Enter values for these Output Range fields (the Minimum and Maximum values are interactive):
 - Minimum
 - Maximum
- 10. Select a unit designator from the Units list.
- 11. Click Save. If you use a referencer, the analog output is automatically saved to the BCU where the referencer resides. If not, the Save dialog box displays. Click the name of a BCU to save the output to.

After saving the analog output, you can save global references (see "Setting Up Global References for Analog or Binary Outputs" on page 268).

12. Continue using the editor to enter overrides, to enter a control class, or to set security classes, if desired (see the section "Entering a Control Class" on page 263).



Setting Up Multi-State Values and Assigning Labels

Use the multi-state screen to define labels for the present values of a multi-state object. The labels provide a textual description of the state of the object on the simplified overrides screen (see Figure 232).



Override "Electric Heat" Override Details:	+Off	×	
Auto	→1st Stage On		
	* 2nd Stage On		for the state of the present value
	* 3rd Stage On		
Present Value Value is controlled to 1st Stage On by TR	ACER since 1/6/2006 9:38:50 AM		
OK Cancel Apply	Help More >>		

To define labels for the present values of multi-state objects:

1. Click the Multi-State Analog Output check box. The Setup Mult-State tab appears (see Figure 233).

Figure 233. Setup Multi-State Tab

	Status Setup Multi-State Overrides Classes	
	Analog Dutput Name: AMS Area Override Time	
Multi-State tab	Property Reference:	
	Default Value: 60.00	
	Scaling Output Range	
	Multiplier: 0.5000000 Minimum: 0.000 +	
	Offset: 0.000 - Maximum: 720.000 -	
Multi-State Analog Dutput check box	Units: Minute Global Referencers	
	Multi-State Analog Output	

2. Click the Setup Multi-State tab to display the screen (see Figure 234 on page 263).



Status	Setup	Setup Multi-State	Overrides	Classes		
_ Multi-9	State La	bels & Values:				
Label '	l: Off				Value 1:	0.00
Label	2: 1st S	tage On			Value 2:	1.00
Label	3: 2nd 9	Stage On			Value 3:	2.00
Label	4: 3rd S	itage On			Value 4:	3.00
Label !	5:				Value 5:	0.00
Label	6:				Value 6:	0.00

Figure 234. Setup Multi-State Screen

- 3. In the Label fields, type a description of the state of the object based on its present value (for example, Label 1 = Off).
- 4. In the corresponding value fields, type the present value for that state (for example, Value 1 = 0.00).

Note:

All of the fields do not have to be used. However, Label 1 must be used before Label 2, Label 2 must be used before Label 3. Unused blank fields should have blank label fields and 0.00 in the value fields.

5. Click Save to save your changes.

Entering a Control Class

To specify where change of state control notification is routed, set the control class in the Classes screen of the Analog Output editor.

To enter a new control class:

1. Click the Classes tab from the Analog Output editor to display the Classes screen (see Figure 235 on page 264).



Creating Input/Output Objects

Status	Setup	Overrides	Classes
	Control Cla	ss: No N	lotification
	Sec	urity Classes	

Figure 235. Analog Output Editor Classes Screen

- 2. Select a routing class in the Control Class field.
- 3. To set security access for this object and define class access, click the Security Classes button. (See "Setting Security Classes" on page 274.)


Creating a Binary Output

Tracer Summit uses binary outputs to turn devices on and off or to send a calculated binary output. Typically, a binary output is used as an interlock on enable/disable. Follow the steps in this section to control UCM outputs or to maintain calculated output values within the system.

Naming the Output and Defining the Reference

- 1. From the Setup menu, select Inputs/Outputs. The list of inputs and outputs displays.
- 2. Select Binary Output. The Select Binary Output dialog box displays (see Figure 236).

Figure 236. Select Binary Output Dialog Box

Se	elect Binary Output
	Name
	A bogus BOP Alara Risau Output
	BIB Heater 1
	BIR Heater 2
	BIR Lights
	Boiler Start/Stop
	CHW Pump A Start/Stop
	CHW Pump B Start/Stop
	CHW Pump C Start/Stop
	CHW Pump D Start/Stop
	CT D Velve
	Ci / Burgo & Shart/Shap
1	Lote: To select multiple items in the edit window, hold down the CTRL key, and then click each item you want to select. To select a column of items, hold down the SHIFT key and click on the first and last item within the column of items you want to select.
[New Select All OK Cancel Help

3. Click New to display the New Binary Output Name dialog box (see Figure 237).

Figure 237. New Binary Output Name Dialog Box

New Binary Output Name		×
Binary Output Name:		
OK	Cancel	Help

- 4. Enter a name for the output. Make the name as informative as possible. Use a maximum of 32 characters.
- 5. Click OK to display the Binary Output editor (see Figure 238 on page 266).



Creating Input/Output Objects

Status Setup Overrides Classes
Discus Output Marcel Fas Stat/Stan
Binary Output Name. Fan Statiostop
Present Value: On
BCU
Name: Administration BCU
Communications: BCU Online

Figure 238. Binary Output Editor

6. Click the Setup tab to display the Setup screen (see Figure 239).

Figure 239. Binary Output Editor Setup Screen

Status Setup Overrie	des Classes
Binary Output Name: Property Reference: On State Label: Off State Label: Default Value © On © Off	Fan Start/Stop Admin Air Handler / Desired Binary Out[1] On Off Off On / Off Times Minimum On Time: O Minimum Off Times Minimum Off Time:
Polarity	Global References

- 7. Select a property reference for the output (optional). For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls".
- 8. Enter text in the On State Label field. Use up to eight characters.
- 9. Enter text in the Off State Label field. Use up to eight characters.
- 10. Select On or Off in the Default Value field.
- 11. Click Normal or Reversed to select the polarity for the output.
- 12. Enter number of minutes in these On/Off Time fields to avoid excessive cycling of equipment:



- Minimum On Time
- Minimum Off Time
- 13. Click Save. If you used a referencer, the binary output is automatically saved to the BCU where the referencer resides. If not, the Save dialog box displays. Click on the name of a BCU to save the output to.

After saving the binary output, you can save global references (see "Setting Up Global References for Analog or Binary Outputs" on page 268).

14. Continue using the editor to enter overrides, to enter a control class, or to set security classes, if desired (see the section "Entering a Control Class" on page 267).

Entering a Control Class

To specify where change of state control notification is routed, set the control class in the Classes screen of the Binary Output editor.

To enter a new control class:

1. Click the Classes tab from the Binary Output editor to display the Classes screen (see Figure 240).

Figure 240. Binary Output Editor Classes Screen

Statu	s 🛛 Setup	Overrides	Classes]
	Control C	ass: No N	lotification	
	Control C		rouncadori	
	Se	curity Classes	1	

- 2. Select a routing class in the Control Class field.
- 3. To set security access for this object and define class access, click the Security Classes button. (See "Setting Security Classes" on page 274.)



Setting Up Global References for Analog or Binary Outputs

Use global references to assign an analog or binary output to multiple objects on the system at one time. For example, you can send the same occupied setpoint to all air handlers in the system or enable/disable the economizer for the units.

To set up global references:

1. Click the Setup tab from the Analog or Binary Output editor to display the Setup screen (see Figure 241).

Figure 241. Analog Output Editor Setup Screen

Status Setup Overrides	Classes
Analog Output Name: Property Reference:	AMS Area Dverride Time
Default Value:	60.00
Scaling	Output Range
Multiplier:	0.50000000 Minimum: 0.000 ×
Offset:	0.000 × Maximum: 720.000 ×
Units: Minute	Global Referencers
Multi-State Ana	og Output

Note:

The Global Referencers button is not available until the analog or binary output has been saved (click the Save button).

2. Click Global References to display the Global Referencers dialog box (see Figure 242 on page 269).



bsorption Chiller (UCP2)		
bsorption Chiller (UCP2)		
nalog Input		
inalog Uutput Inalog Value		
vialog value		
iinary Input	•	
roperty:		
Absorber Water Flow Bate		
Absorber Water Flow Status		
Absorber Water Press: Delta		
Absorber Water Press: Entering		
Absorber Water Pump Output		
Absorber Water Temp: Delta	-1	
Absorber Water Temp: Entering		
vailable Names:		
Chiller B		
		Save Selections

Figure 242. Global Referencers Dialog Box

G

- 3. In the Object Type field, select the type of object. Select only one object type.
- 4. In the Property field, select the property you want this object to control.
- 5. In the Available Names field, select the name(s) of specific object(s).
- 6. Click Save Selections. The Global References dialog box closes and the Setup screen displays.

Note:

Once a global reference has been set up it can not be deleted from this editor. In order to delete the reference you must go the the editor for each object that has been referenced to this point.



Modifying an Input/Output

You can modify any parameter of an input or output at any time.

To modify an input/output:

- 1. From the Setup menu, select Inputs/Outputs. The list of inputs and outputs displays.
- 2. Select the type of input or output you wish to modify. The Select Input dialog box (specific to the item you chose) displays.
- 3. Click the name of the input or output you want to modify.
- 4. Click OK. The editor for the selected input or output displays.
- 5. Click the appropriate tab at the top of the editor to display the screen that you want to modify.

Note:

Be careful when changing the name of an input or output. A name change will affect any CPL routine that uses the input or output. (See Chapter 25, "Custom Programming Language".)



Overriding an Analog or Binary Output

When you override analog and binary values from the Overrides tab of a UCM editor, you perform the override using the advanced Override dialog box. However, Trane encourages you to define your default priority level in Site Security and override from graphics by using the simplified overrides dialog box (see "Setting Up the Simplified Override Dialog Box" on page 172).

From the advanced override dialog box you can:

- Release control at the specific priority
- Change the present value at a specific priority

Note:

You will need access to change the priority level. Priority control ranges from 1 (highest) to 16 (lowest). The command with the highest priority controls the object. To take control off, you must select the Release Control option button. Then the next highest priority commands the object.



Releasing Control to Another Object

1. Click the Overrides tab from the Analog or Binary Output editor (see Figure 243).

Figure 243. Binary Output Editor Overrides Screen

Status S	Setup Overrides	Classes
Operati	ing Mode	
Prese	nt Value: On	Override

2. Click the Override button to display the advanced Overrides dialog box (see Figure 244).

Figure 244. Override Dialog Box

Override "M1 Exhaust Fan"	×
Request To Release Control C Change Value to: Off	Priority Array 9 - VAV Air Systems xx - Relinquish Default
	Request of: On By: Administration Air System
At Priority 9: VAV Air Systems	Present Value Last Control: 12/18/98 7:03:58 AM
	OK Cancel Apply Help

- 3. Click the Release Control option button.
- 4. In the At Priority field, select the priority level that you want to release control to.

Note:

Control priorities identify the levels at which Tracer Summit applications control an object. Normally, control priorities are set to the Tracer Summit defaults. For information on setting up control priorities for non-Trane BACnet devices, see Chapter 37, "Using BACnet for Non-Trane Devices."



5. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

Changing the Present Value

- 1. Click the Overrides tab from the Analog or Binary Output editor
- 2. Click the Override button to display the Overrides dialog box (see Figure 245).

Figure 245. Override Dialog Box

Override "M1 Exhaust Fan"	×
Request To <u>Release Control</u> Change Value to: Dff	Priority Array 9 - VAV Air Systems xx - Relinquish Default
	, Request of: On By: Administration Air System
At Priority 12: User - Low	Present Value Last Control: 12/18/98 7:03:58 AM
	Cancel Apply Help

- 3. Click the Change Value To option button.
- 4. For an analog output, enter a new value in the Change Value To field. For a binary output, select a new value from the list provided.
- 5. In the At Priority field, select the priority level that you want to give control to.
- 6. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

Note:

The Priority Array list shows all the applications and priorities that are currently commanding the object. The Priority Array and the Present Value fields show what the object is controlled to, when it was controlled last, and what application or user is controlling it.



Setting Security Classes

Tracer Summit has 20 security classes you can set up to segment a site, based on whatever parameters you want. For example, a class might define a building, a floor, a chiller plant, inside, or outside. The class designations are used to group objects for security control. (See Chapter 9, "Setting Up Security—Tracer Summit System"). The Security Classes button on the Classes screen in the input/output editors allows you to control which classes have access to the input or output you are creating or modifying.

To set security classes:

1. Click the Classes tab from the input or output editor to display the Classes screen (see Figure 246).

Figure 246.	Binary	Output	Editor	Classes	Screen
-------------	--------	--------	--------	---------	--------

Sta	atus	Setup	Overrides	Classes	
		Control Cla:	ss: No N	otification	
					_
		Sec	urity Classes		

2. Click Security Classes to display the Change Security Classes dialog box (see Figure 247 on page 275).



lass	Class Name	Access	
1	System Operator		
2	Day Operator		
3	Night Operator		
4	Security		
5	Chiller Plant		
6	Administration		
7	Manufacturing		
8	ICS University		
9	Engineering		
10	Applications		
11	Marketing		
12	Finance		
13	Training		
14	Product Commun.		
15	Human Resources		
16	Production		

Figure 247. Security Classes Dialog Box

- 3. Click on the Access field next to each class to allow or deny access. A check in the field allows access. No check denies access.
- 4. Click OK to display the Classes screen.

Deleting an Input/Output

To delete an input or output, use the Delete Object utility in the Tools menu (see Chapter 39, "Deleting Objects and Sites").



Creating Input/Output Objects



Chapter 18 BCU Inputs and Outputs

This chapter describes input and output options available for the model BMTX and the model BMTW BCUs.

BMTX Binary Inputs

The BMTX BCU has two binary inputs hardwired onto the main board. You can use these inputs for:

- Timed override inputs
- Failure inputs
- Latching inputs
- Pulse meter inputs.

These properties can be referenced from the Select Properties dialog box by selecting Type, Name, and Property (see Figure 248).

Figure 248. Select Property dialog box

Status Se	tup	Alarming	Classes	
Binar	y Inpu	t Name:	BMTX Bin	ary test
Prop	erty Re	eference:		BMTX1 / Binary Input 2[2]
On S	tate La	abel:	On	
Off S	tate La	abel:	Off	
refere	Norm Reve	al rsed	erty -	Select Property Reference X Type: Device Name: BMTX1 Property: Binary Input 2[02] OK Cancel



Each of the two binary inputs has four properties with different functions:

- Binary Input [01] —Timed override (TOV). You can use this property as a TOV trigger for the TOV Application or a TOV CPL routine. This property is on if the Binary Input has been closed at any time in the last two minutes.
- Binary Input [02]—Fail. You can use this property to monitor status for alarms. This property is on if the Binary Input has not been closed at any time the last two minutes.
- Binary Input [03]—Latch. This property will be on if the Binary Input has been closed any time in the last two minutes. You can monitor momentary inputs with this property.
- Binary Input [04]—Status. This property shows the current state of the Binary input point. The input must remain continuously on or off for at least two seconds before the property will change.

Pulse Meter Input

You can use the BMTX binary input for a pulse meter input. The inputs have analog properties even though they are binary inputs. These analog properties, typically used in calculation objects for Energy Management, can be referenced by choosing Type, Name, and Property (see Figure 249).

Figure 249. Referencing Analog Properties

Calculation Name: BMTX input Rate					
Property Reference: BMTX1 / Analog Input 2[1]					
- Enable					
Cn Delay for Referencer:					
Reset at End of Billing Period	_				
C Last Day of Month Select Property Reference	×				
C Define Day of Month					
C End of Billing Period					
Name: BMTX1					
Units: BTU					
Propert Analog Input 2[01]					
referenced property OK Cancel Help					

Each input has four analog properties with different functions:

• Analog Input [01]—Rate. This is the rate of pulses per minute. The BCU calculates the rate by looking at the last ten pulses and averaging the time between pulses for all the pulses that occurred within the last minute. Pulses older than one minute are ignored.



- Analog Input [02]—Pulse count since last read. Note that each time you read this property from the Tracer Summit Workstation the BCU resets it to zero.
- Analog Input [03]—Pulse Total. This is the number of pulses since the last power reset on the BMTX. This property has a maximum value of 999,999,999, if it exceeds this number it reverts to 0.
- Analog Iput [04]—Not Used. This property has a value of 0.

BMTW I/O Module

The BMTW BCU uses the input/output (I/O) module which is an optional board on the BCU that facilitates connection of common points by adding five universal inputs (UIPs) and one binary output (BOP) to the BMTW BCU.

The I/O module's inputs are referenced by analog input (AIP) and binary input (BIP) objects for alarm processing and limit checking. The one binary output can be used to control equipment or provide status information, such as an alarm condition.

The I/O module is supported by a BCU I/O module object that you create in Tracer Summit. Each I/O module object has an editor that allows you to configure the UIP type to match the hardware jumper selection. Both hardware jumper selection and software configuration set the UIP type.

This section covers the following tasks:

- Creating a BCU I/O module object
- Configuring UIPs
- Setting up alarm and security classes
- Creating analog and binary input/output objects

These tasks must be performed in order to create and set up the necessary objects that will provide units, calculation, and alarming to the desired input.



Creating the BCU I/O Module Object

The following steps show you how to create a BCU I/O module object from the Setup menu's Site Configuration option. You can create a BCU I/O module object while configuring a site, or you can add it to a specified BCU.

Note:

The BCU I/O module buttons are only selectable for standard and high capacity BCUs.

- 1. From the Setup menu, select Site Configuration (see Chapter 6, "Configuring Tracer Summit BCU Sites").
- 2. From the Site Configuration editor, click the Devices tab to display the Devices screen (see Figure 250):

Figure 250. Site Configuration Editor Devices Screen

Setup Devices Event Classes	Event Receivers	Control Priorities	Units	Date/Time	Communications	
Devices	Workstations		Non-Trane	BACnet devic	e	
BCU 1 - Training Lobby BCU 2 - Engineering BCU 3 - Manufacturing	AHU Mezzanine Wo Bill's workstation - 18 JIM W Joe's Workstation - 1	rrkstation - 1 ▲ 33 187 ▼	BACnet D	evice 11		
Create Device	Create Works	station	Create Nor	Create Non-Trane BACnet device		
Edit Device	Edit Worksta	ation	Edit Non-	Trane BACnet	device	
Delete Device	Delete Work	station	Delete No	on-Trane BACr	tet device	
UCMs in Selected Device		Link	Address	Neuron		
AMS) (ireless Reseiver	Utirologe Receiver	<u> LIFIK </u> 1	2	Neuronn		
Central Area I CP	Lighting Control Panel		2			
CUH-1 Southwest Entrance	Terminal Unit Controll	1	38			
CUH-2 Southeast Entrance	Terminal Unit Controll	1	39			
CULLAND T F 1						
UUH-3 Main Entrance	Terminal Unit Controll	1	36			
CUH-3 Main Entrance CUH-4 Main Training Entrance	Terminal Unit Controll Space Comfort Contro	1 2	36	000411804	500	
CUH-3 Main Entrance CUH-4 Main Training Entrance CUH-5 Training Entrance	Terminal Unit Controll Space Comfort Contro Terminal Unit Controll	1 2 1	36 37	000411804	.500	
CUH-3 Main Entrance CUH-4 Main Training Entrance CUH-5 Training Entrance FP VAV 1-01 Visitor Room	Terminal Unit Controll Space Comfort Control Terminal Unit Controll VariTrane UCM 11/111/IV	1 2 1 1	36 37 85	000411804	1500	
CUH-3 Main Entrance CUH-4 Main Training Entrance CUH-5 Training Entrance FP VAV 1-01 Visitor Room FP VAV 1-02 Tang	Terminal Unit Controll Space Comfort Control Terminal Unit Controll VariTrane UCM 11/11/1V VariTrane UCM 11/11/1V	1 2 1 1	36 37 85 86	000411804	1500	
CUH-3 Main Entrance CUH-4 Main Training Entrance CUH-5 Training Entrance FP VAV 1-01 Visitor Room FP VAV 1-02 Tang FP VAV 1-03	Terminal Unit Controll Space Comfort Control Terminal Unit Controll VariTrane UCM II/III/IV VariTrane UCM II/III/IV VariTrane UCM II/III/IV	1 2 1 1 1 1 1	36 37 85 86 87	000411804	1500	
CUH-3 Main Entrance CUH-4 Main Training Entrance CH-5 Training Entrance FP VAV 1-01 Visitor Room FP VAV 1-02 Tang FP VAV 1-03 Create UC <u>M</u>	Terminal Unit Controll Space Comfort Control Terminal Unit Controll VariTrane UCM 11/11/IV VariTrane UCM 11/11/IV VariTrane UCM 11/11/IV	1 2 1 1 1	36 37 85 86 87	000411804	1500	
CUH-3 Main Entrance CUH-4 Main Training Entrance CUH-5 Training Entrance FP VAV 1-01 Visitor Room FP VAV 1-02 Tang FP VAV 1-03 Create UCM Assign Neuron ID	Terminal Unit Controll Space Comfort Control Terminal Unit Controll VariTrane UCM II/II/IV VariTrane UCM II/II/IV VariTrane UCM II/II/IV	1 2 1 1 1	36 36 37 85 86 87	000411804	1500 T	

- If the appropriate BCU is listed, select it. Then click the Edit Device button. The Edit Device dialog box displays (see Figure 251 on page 281).
- If the appropriate BCU is not listed, click the Create Device button. The Create New Device dialog box displays (see "Configuring Tracer Summit BCU Sites" on page 33).





Edit Device			×
Device Name:	bcu device1		
Device ID:	1		
Network Number	1		
Panel Type:	Modular BCU (BMTW)	Capacity Cards: 1	
Communication	Links	Modem	Operator Display
Link 1: No	n-Isolated Comm 4	Add	Add
		Edit	Edit
Link 2: Iso	lated Comm 3 💌	Delete	
Link 3: Cor	nm 5 💌	BCU I/O Module	BCU Event Log
Link 4: Un	defined 💌	Edit	Edit
Comm5 Mode-			
Install a	new link		
C Add to o	or discover existing link		
Security Classes.	OK.	Cancel Help	

Figure 251. Edit Device Dialog Box

3. Click the BCU I/O module Add button to display the Create New BCU I/O module dialog box (see Figure 252).

Figure 252. Create New BCU I/O Module Dialog Box

Create New BCU	170 Module		×
Name:			
Security Classes	OK	Cancel	Help

4. In the Name field, enter a name for the BCU I/O module. Use a maximum of 32 characters.

You must enter a name before you can save the new BCU I/O module object. You can modify the name at any time from the Edit BCU I/O module dialog box. You can access the dialog box from the BCU I/O module Edit button. Click OK to return to the main screen.

- 5. To define security access, click the Security Classes button to display the Security Classes dialog box (see "Setting Security Access for the BCU I/O Module" on page 286).
- 6. Click OK to return to the dialog box.



7. Click OK to the Devices screen, then click Save.

Setting Up Universal Inputs

After creating the BCU I/O module object in Site Configuration, set up the universal inputs (UIPs). The UIPs are set up in two places: on the BCU I/O module board on the BCU and in the Tracer Summit software. Both hardware jumper selection and software configuration selection set the UIP function type.

Accessing the BCU I/O Module Editor

1. From the Setup menu select Unit Controllers, then select BCU I/O Module. The BCU I/O module editor displays (see Figure 253).

Figure 253. BCU I/O Module Editor

Status Setup	Classes		
BCU I/O Mod	Graphic		
BCU Name:	Manufactu	uring BCU	
Communicatio	ns: BCU Onlin	e	
Binary Output:	Off		
- Inputs	Туре	Value/State	Analog Failure
Input 1:	Binary	Off	
Input 2:	Thermistor	77.91406	Normal 040
Input 3:	Binary	On	
Input 4:	Voltage	0.15210	Normal
Input 5:	Current	0.00000	Failed



Setting Up the BCU I/O Module UIPs

Note:

After setup is complete, it is necessary to create and set up system objects to reference the inputs, see "Setting Up System Objects" on page 284.

1. From the BCU I/O Module editor, click the Setup tab to display the Setup tab screen (see Figure 254).

Status	Setup	Classes		
		1 1		
BCU I/	'O Modul	e Name: 10module		
– Inpu	uts			
		Туре	Pulse Multiplier	Disable Analog Failure
Inț	put 1:	Voltage 💌	1.0000	V
In	nut 2 [.]	Pulse 💌	1.0000	Г
,				_
Inp	put 3:	Thermistor 🗾	1.0000	
Inț	put 4:	Current	1.0000	
In	nut 5:	No Calibration	1.0000	Г

Figure 254. BCU I/O Module Editor Setup Screen

2. Configure the input Type fields (1-5) to match the BCU I/O module board UIP jumper settings.

If the device is a pulse meter, enter the correction factor in the Pulse Multiplier field (see "Calculating the Pulse Multiplier" on page 284). This field is unavailable for other input types.

If the device is an analog type (voltage, current, or thermistor), the Disable Analog Failure check box is available:

- Check this box to disable the alarm within 2% of the range end points.
- Leave this box unchecked to alarm on endpoint conditions.

Note:

Verify input type settings with the BCU I/O module UIP jumpers.

3. See "Setting Up System Objects" on page 284 for creating and setting up system objects to reference the inputs.



Calculating the Pulse Multiplier

The pulse multiplier value is the desired consumption amount per contact closure. This value is a constant scaling factor that is applied to both the accumulator count and rate calculation. The multiplier is used only in constant consumption applications, such as, water and electricity. Under constant pressure and temperature conditions, a constant pulse multiplier value may be used for gas consumption. Refer to the manufacturer's equipment specification for the proper value on consumption amount per pulse. The desired consumption amount is the consumption amount per pulse multiplied by a conversion factor (desire units/manufacturer's equipment units).

Setting Up System Objects

After setting up the UIPs in the BCU I/O Module editor, create analog input (AIP) and binary input (BIP) objects that reference the BCU I/O module's input object properties. The AIP and BIP objects read and manipulate raw data from the BCU I/O module, providing real values that are used in alarm processing and other applications (for example, CPL programming, graphics, reports, and calculations).

Note:

The AIP and BIP objects must be saved in the same BCU as the BCU I/O module object.

Setting Up Analog Inputs

Creating an analog input object is the only way to handle conversions, alarms, and CPL triggers for analog and pulse accumulator values.

To create an analog input object, see "Creating Input/Output Objects" on page 249. Also refer to the steps below.

On the Analog Input editor Setup screen:

- 1. Select a property reference for the input.
- 2. Enter the multiplier and offset scaling values (for thermistor type inputs, use the default value).
- 3. Select the correct unit designator.

On the Analog Input editor Alarming screen:

• Set up alarm limits.

Setting Up Pulse Metered Inputs

Setting up pulse metering inputs involve creating a Meter Totalization calculation object and alarm limits that reference the BCU I/O module's pulse accumulator input.



Creating a Calculation Object

In order to create a calculation object, you must first define the calculation type. Select Meter Totalization for the calculation type.

To create a new calculation object, see Chapter 31, "Using the Calculations Editor." Also, refer to the steps below.

On the Calculation editor Setup screen:

- 1. Set the Property Reference field to: BCU I/O module/Pulse Accumulator, Since Last[x], where x is the input number for the UIP.
- 2. Set the Conversion Factor field to 1.

Alarming on Metered Inputs

Alarming on metered inputs is accomplished by creating an analog input object. (See Chapter 17, "Creating Input/Output Objects.") Also, refer to the steps below.

On the Analog Input editor Setup screen:

- 1. Set the Property Reference field to: BCU I/O module/Pulse Accumrate[x], where x is the input number for the UIP.
- 2. Select the correct unit designator.

On the Analog Input Alarming tab:

• Set the On Delay For Referencer field to more than one minute.

Setting Up Binary Inputs

Binary input objects are used for polarity, units, and alarming assignment for UIPs. To create a binary input object, see Chapter 17, "Creating Input/Output Objects." Also, refer to the steps below.

On the Binary Input editor Setup screen:

- 1. Set the Property Reference field to: BCU I/O module/Binary In[x] or Momentary Binary In[x], where x is the input number for the UIP.
- 2. Enter the Polarity.
- 3. Select the correct unit designator.
- On the Binary Input editor Alarming tab:
- Set up the alarm limits.

Setting Up a Binary Output

Creating a binary output object (BOP) is the only way to control the BCU I/O module's binary output. To create a binary output object, see Chapter 17, "Creating Input/Output Objects". Also, refer to the steps below.

On the Binary Output editor screen:

- 1. Set the Property Reference field to: BCU I/O module/Binary Output.
- 2. Enter the Polarity.



3. Select the correct unit designator.

Setting Security Access for the BCU I/O Module

To specify where the BCU I/O module's alarm messages are routed, set the Alarm Class in the Classes screen.

To enter a new alarm class:

- 1. Click the Classes tab from the BCU I/O module editor to display the Classes screen (see Figure 255).
- 2. Select an event class in the Alarm Class field.

Figure 255. BCU I/O Module Editor Classes Screen

Status	Setup	Classes				
Alarm	Class:	Event 4	Alarm Class 5	×		
Secu	rity Clas:	ses				

3. To set security access for this object and define class access, click the Security Classes button to display the Change Security Classes dialog box (See Figure 256).

Figure 256. Change Security Classes Dialog Box

Class	Class Name	Access
1	System Operator	
2	Day Operator	V
3	Night Operator	V
4	Security	
5	Chiller Plant	
6	Administration	
7	Manufacturing	
8	ICS University	
9	Engineering	
10	Applications	
11	Marketing	
12	Finance	
13	Training	
14	Product Commun.	
15	Human Resources	
16	Production	



- 4. Click on the Access field next to each class to grant or deny access. A check in the field grants access. No check denies access.
- 5. Click OK to display the Classes screen.

BCU Inputs and Outputs





Chapter 19 Chiller Plant Control

Chiller Plant Control is used to coordinate chillers and provide system chilled water control. The program performs four main functions:

- It controls leaving water temperature by adding chillers as the building cooling load increases. It also calculates the chilled water setpoint for each chiller.
- It recovers from failures by starting the next chiller in the sequence immediately after a chiller is marked failed.
- It optimizes energy use by subtracting chillers when the cooling load does not require them to be enabled. It also matches chillers to the load.
- It equalizes runtime and wear on each chiller by using different rotation schemes. It also provides a more reliable chiller plant by periodically exercising all of its components.

You can use the Chiller Plant editor or the Chiller Plant Control Status displays to perform these functions. For information on the Chiller Plant Control Status displays, refer to the *Tracer Summit Daily Operations* guide and the *Tracer Summit Chiller Plant Control Application Program*, BAS-APG004-EN.



Accessing the Chiller Plant Editor

1. From the Setup menu, select Click Chiller Plant Control. The Select Chiller Plant dialog box displays (see Figure 257).

Figure 257. Select Chiller Plant Dialog Box

Select Chiller Plant			×
Name			
south wing chiller Pi	anc		
OK	New	Cancel	Help

- 2. Select a chiller plant.
- 3. Click OK. The Chiller Plant editor displays (see Figure 258).

Figure 258. Chiller Plant Editor

tatus System	Startup Add Subtract	Sequence Chillers	s Classes
Chiller Plant Narr	e: South Wing Chiller Plant		
Operating Mo Failure Exists:	de: Shutdown in Progress Yes		Display Status Report
BCU Name:	Administration BCU		
Communicatio	ns: BCU Online		



Creating a New Chiller Plant

To create a new chiller plant, you follow these steps:

- Create chiller objects in the Site Configuration editor (for more information, refer to Chapter 6, "Configuring Tracer Summit BCU Sites")
- Open and name a new chiller plant (as described in this section)
- Set up the chiller plant system (see "Setting Up the Chiller Plant System" on page 292)
- Modify startup settings (see "Modifying Startup Settings" on page 293)
- Modify subtract settings (see "Modifying Subtract Settings" on page 294)
- Add and set up chiller objects (see "Adding Chiller Objects to the Chiller Plant" on page 295 and "Setting Up Individual Chiller Objects" on page 297)
- Set up the chiller UCM objects (see "Chiller UCM Setup" on page 298)
- Set up security for the chiller plant (see "Routing Alarms and Events and Setting Security Access" on page 298)

Note:

The settings described for the Chiller Plant editor screens are required entries. (For more information, refer to Tracer Summit online help.) Verify that default entries on all screens of the editor are correct for the chiller plant.

To create a new chiller plant:

- 1. From the Setup menu, select Chiller Plant Control. The Select Chiller Plant dialog box displays.
- 2. Click New. The New Chiller Plant Name dialog box displays (see Figure 259).

Figure 259. New Chiller Plant Name Dialog Box

New Chiller Plant I	lame		×
Chiller Plant Name:			
-			
	OK	Cancel	Help

- 3. Enter the name of the Chiller Plant. Make the name as informative as possible. Use a maximum of 32 characters. You must enter a name before you can save the new chiller plant. You can modify the name at any time from the System screen of the Chiller Plant editor.
- 4. Click OK. The Chiller Plant editor displays.



Setting Up the Chiller Plant System

1. From the Chiller Plant editor, click the System tab (see Figure 260).

Figure 260. Chiller Plant Editor System Screen

Chiller Plant Name:	South Wing Chiller Plant
Chiller Plant Enable:	₽ Off
System Chilled Water	
Setpoint:	≉ 42.0
Supply Temperature:	≠ 44.8
Return Temperature:	₽ 53.1
Pump Output:	₽ Not Used
Flow Status:	¢ Not Used
Start Interval:	20 Minutes
Flow Type:	• Variable C Constant
Powerfail Recovery Mode:	Normal C Rapid

- 2. Reference the system Enable binary output object (refer to Chapter 17, "Creating Input/Output Objects"), or set the Chiller Plant Enable referencer to On for continuous Chiller Plant operation.
- 3. Use the Supply Temperature referencer edit control to reference the property for the system chilled water supply temperature.
- 4. Use the Return Temperature referencer edit control to reference the property for the system chilled water return temperature.



Modifying Startup Settings

The Startup screen of the Chiller Plant editor allows you to enable Ambient Temperature Lockout.

To modify startup settings:

1. From the Chiller Plant editor, click the Startup tab (see Figure 261).

Figure 261.	Chiller	Plant I	Editor	Startup	Screen
-------------	---------	---------	--------	---------	--------

۲	Ambient Temperature Lockout
	C Disable C Enable
	Sensor: 😰 85.9
	Setpoint: 50.0
	Deadband: 2.0
\$	Soft Start
	🗘 Disable 💿 Enable
	Deadband: 20.0
1	Start Interval: 10 Minutes
	Minimum Cooldown Rate: 0.5

- 2. Click Enable to select Ambient Temperature Lockout.
- 3. Use the Sensor referencer edit control to reference the property for the outside air temperature.



Modifying Subtract Settings

1. From the Chiller Plant editor, click the Subtract tab (see Figure 262). The temperature-based subtract method is the default selection.

Figure 262. Chiller Plant Editor Subtract Screen – Temperature Method

Status	System	Startup	Add	Subtract	Sequence	Chillers	Classes
Sub	tract Delay T	ime: 🔟	Minute	38			
Su	ibtract Metho	d					
	Temperatu	re OF	low				
D	esign Delta 1	emperature:		10.0			
S	ubtract Temp	perature Dea	dband:	0.5			
Sub	tract Input:	🕫 Not Use	d				

- 2. Make a selection:
 - To use the temperature-based subtract method, verify that the Design Delta Temperature is correct for the Chiller Plant (the system default is 10.0°F).
 - To use the flow-based subtract method, click Flow (see Figure 263). Then use the Bypass Pipe Flow referencer edit control to reference the property for the Bypass Pipe Flow.

Figure 263. Chiller Plant Editor Subtract Screen-Flow Method

Status	System	Startup	Add	Subtract	Sequence	Chillers	Classes]
Si	ubtract Dela	ay Time: [20	Minutes				
Г	Subtract M	ethod						
	O Tempe	ature	۰F	low				
	Bypass Pip	e Flow:		₽74.0				
	Excess Flo	w Percen	tage:	20				
S	ubtract Inpu	t: <mark>⊉</mark> N	ot Use	d				



Adding Chiller Objects to the Chiller Plant

1. From the Chiller Plant editor, click the Chillers tab (see Figure 264).

Figure 264. Chiller Plant Editor Chillers Screen

Status	System	Startup	Add	Subtract	s	equence	Chillers	Classe	3
Chiller Type	э:								
Helical Ro	otary Chiller (L	JCP2) 💌		Γ	ndex	Ch	niller Name	S	equence Type
				1		Chiller B		В	ase
Chiller Nam	ie:			2		Chiller E		N	ormal
FMF-Helic	al Chiller-UC	P2	Add	>> 3		Chiller D		N	ormal
Helical Ro	tary Chiller								
			<< Rer	nove					
			-						
			< <rem< td=""><td>ove All</td><td></td><td></td><td></td><td></td><td></td></rem<>	ove All					
I		_							
									Chiller Setup
									- man - e orașe

- 2. In the Chiller Type list box, select the type of chiller to be added.
- 3. In the Chiller Name list, select the chiller name to be added.
- 4. Click Add to add the chiller object to the Chiller Plant Control member's list. The Add Chiller dialog box displays (see Figure 265).

Figure 265. Add Chiller Dialog Box

Add Chiller 🔰 👂	5
Chiller Name:	
Helical Rotary Chiller	
Index: Sequence Type:	
Normal 🔽	
OK Cancel Help	



- 5. In the Index field, select the array index used to display individual chillers. Use the default index number for the Chiller object.
- 6. In the Sequence Type field, select the chiller sequence type: Normal, Base, Peak, or Swing.

Normal chillers rotate in a round-robin fashion (the last on is the first off). A base chiller is always the first chiller on and the last chiller off. A peak chiller is always the last chiller to run and the first chiller off. A swing chiller is the first on and then alternates after that (see Table 6 on page 296 for an example of how a system having chillers of each type are stepped on and off).

Note:

The PC Workstation validates these settings to eliminate duplicate types for base, peak, or swing. One of each may be defined. After a base, peak or swing chiller has been chosen, it is removed from the drop-down list of member choices. There is no limit to the number of normal chillers allowed.

Table 6. Chiller Sequence Type

Step	Chiller 1 (Base)	Chiller 3 (Swing)	Chiller 4 (#1)	Chiller 5 (#2)	Chiller 2 (Peak)
1	ON	OFF	OFF	OFF	OFF
2	ON	ON	OFF	OFF	OFF
3	ON	OFF	ON	OFF	OFF
4	ON	ON	ON	OFF	OFF
5	ON	OFF	ON	ON	OFF
6	ON	ON	ON	ON	OFF
7	ON	ON	ON	ON	ON

7. Click OK to save the entry and to return to the Chillers screen.



Setting Up Individual Chiller Objects

1. From the Chiller Plant editor, click the Chillers tab (see Figure 266).

Figure 266. Chiller Plant Editor Chillers Screen

Chiller Type: Index Chiller Name Sequence Type Chiller Name: Add >> MF-Helical Chiller-UCP2 Add >> Helical Rotary Chiller Add >> < Remove < Remove All < Remove All Chiller Sector	Status	System	Startup	Add	Subtract	Sequence	Chillers	Classes]
Index Chiller Name Sequence Type Chiller Name: Add>> E Index Chiller Name Base FMF-Helical Chiller-UCP2 Add >> Add >> Index Chiller D Normal Chiller Remove Image: Chiller Chiller Chiller Image: Chiller D Normal Image: Chiller D Normal Chiller Remove Image: Chiller Chiller Image: Chiller D Normal Image: Chiller D Normal Chiller Remove Image: Chiller Chiller Image: Chiller D Normal Image: Chiller D Normal	Chiller Type	e:							
Chiller Name: FMF-Helical Chiller-UCP2 Add >> Helical Rotary Chiller Image: Chiller B Base Image: Chiller Comparison of	Helical Ro	tary Chiller (L	JCP2) -		Inde	ex C	hiller Name	Sequ	Jence Type
Chiller Name: FMF-Helical Chiller-UCP2 Helical Rotary Chiller					1	Chiller B		Base	
FMF-Helical Chiller-UCP2 Add >> 3 Chiller D Normal K Remove K Remove All Normal K K Remove All K Remove All Normal K	Chiller Nam	ie:			2	Chiller E		Norm	al
Helical Hotary Chiller	FMF-Helic	al Chiller-UCI	P2	Add	>> 3	Chiller D		Norm	al
< <remove all="" chiller="" setup<="" td=""><td>Helical Ro</td><td>itary Chiller</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></remove>	Helical Ro	itary Chiller							
< <remove all="" chiller="" setup<="" td=""><td></td><td></td><td></td><td><< Rer</td><td>nove</td><td></td><td></td><td></td><td></td></remove>				<< Rer	nove				
< <remove all="" chiller="" setup<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></remove>									
< <remove all="" chiller="" setup<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></remove>									
< <remove all<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></remove>									
Chiller Setup									
Chiller Setup				//Pom					
Chiller Setuo				< <nemi< td=""><td></td><td></td><td></td><td></td><td></td></nemi<>					
Chiller Setup									
Chiller Setup									
Chiller Setup									
Chiller Setup									
Chiller Setup	1								
									Chiller Setup

- 2. In the member's list, click the Index number of the chiller you want to set up.
- 3. Click the Chiller Setup button to display the Chiller Setup dialog box (see Figure 267).

Figure 267. Chiller Setup Dialog Box

Chiller Name: Chiller B	Chiller Setup	x
Chiller Available Chiller Available Chiller Chilled Water Flow Chiller Chilled Water Flow Chiller Chilled Water Stpt: Min Chiller Design Flow Chiller Design Flow Chiller Failure Input 1 Chiller Failure Input 2 Chiller Status Chiller Status Chiller Unload at Start Chiller Unload Current Limit	Chiller Name: Chiller B Property: Chiller Available Chiller Available Chiller Chilled Water Flow Chiller Chilled Water Flow Chiller Chilled Water Stpt: Min Chiller Chilled Water Stpt: Min Chiller Design Capacity Chiller Failure Input 1 Chiller Failure Input 2 Chiller Failure Input 2 Chiller Status Chiller Unload at Start Chiller Unload Current Limit	Value:
OK Cancel Help	[OK Cancel Help



- 4. If the temperature-based subtract method was selected on the Subtract screen, highlight Chiller Design Capacity. If the Flow-based subtract method was selected on the Subtract screen, highlight the Chiller Design Flow.
- 5. Type a valid value in the Value field.
- 6. Click OK to save the entry and return to the Chillers screen.

Note:

Be sure all chillers in this Chiller Plant use the same units for capacity (for example, tons, KWH, etc.), or flow (for example, gpm, l/s, etc.).

Chiller UCM Setup

After the Chiller Plant Control application is set up, go to the UCM editor for each of the chillers that were selected to be part of the chiller plant. (From the Setup menu, select Unit Controllers.) For more information on UCM editors, refer to Chapter 12, "Using UCM Editors".

To set up a chiller UCM from the UCM editor:

- 1. Make sure the chilled water setpoint for each chiller references the chiller chilled water setpoint property in the Chiller Plant Control object. By editing the chilled water setpoint appropriately, you ensure that each chiller is getting its chilled water setpoint from the Chiller Plant Control object.
- 2. Make sure the current limit setpoint for each chiller references the chiller current limit setpoint property in the Chiller Plant Control object. By editing the current limit setpoint appropriately, you ensure that each chiller is getting its current limit setpoint from the Chiller Plant Control object.
- 3. Make sure the minimum On and Off time of each chiller is less than the control feed back delay time. Under certain circumstances, minimum On and Off times longer than the control feedback delay time can cause the chiller to be needlessly marked as failed.

Routing Alarms and Events and Setting Security Access

At the Chiller Plant editor's Classes screen, you can assign alarm and event routing and set security access for a chiller plant.

Defining Alarm and Event Routing

1. From the Chiller Plant editor, click the Classes tab (see Figure 268 on page 299).



Routing Alarms and Events and Setting Security Access

Status	System	Startup	Add	Subtract	Sequence	Chillers	Classes	
E vent Cl	ass: 🚺	lo Notification	۱		•			
	_							
Alarm Cla	A ::228	lo Notification	า		•			
Security	Classes							

Figure 268. Chiller Plant Editor Classes Screen

- 2. In the Event Class field, select an appropriate class for routing events.
- 3. In the Alarm Class field, select an appropriate class for routing alarms.

Setting Security Access

- 1. From the Chiller Plant editor, click the Classes tab.
- 2. Click the Security Classes button. The Change Security Classes dialog box displays (see Figure 269).

Figure 269.	Change	Security	Classes	Dialog	Box
-------------	--------	----------	---------	--------	-----

ass	Class Name	Access
1	System Operator	
2	Day Operator	V
3	Night Operator	
4	Security	
5	Chiller Plant	
6	Administration	
7	Manufacturing	
3	ICS University	
)	Engineering	
D	Applications	
1	Marketing	
2	Finance	
3	Training	
4	Product Commun.	
5	Human Resources	
6	Production	



- 3. Click on the Access field next to each class to grant or deny access to the security class. A check in the field grants access. If unchecked, permission to the security class is denied.
- 4. Click OK to close the Change Security Classes dialog box.

Deleting a Chiller Plant

To delete a chiller plant, use the Delete Objects utility from the Tools menu. For more information, see Chapter 39, "Deleting Objects and Sites".


Chapter 20 Area Control Application

Area control allows you to define the components and parameters of an area so that the same comfort level can be maintained throughout the defined space. An area may consist of a single office, a group of offices, a large open warehouse, a manufacturing space, or any grouping you wish to define.

Using Area Control

Use area control to perform these functions:

- Coordinate equipment operations, such as heating, cooling, ventilation, and lighting within an area
- Integrate into time of day scheduling to allow for optimal start/stop, night economizing, and lighting events
- Facilitate night heating and cooling operations
- Give a common look and feel to all parts of a defined area, regardless of the equipment that serves it

Area control works in combination with the time of day scheduling, VAV air systems, custom programming language applications, and timed override to perform the following functions:

- **Optimal Start/Stop**: Area Control calculates optimal start/stop values that control the startup and shutdown times of heating and cooling devices so they run only as long as necessary to meet the required temperature setpoints for the intended occupancy. You set the target start/stop times in Time of Day Scheduling. Area Control calculates the actual start/stop times required to meet the set targets.
- **Night Heat/Cool**: Area Control monitors the temperature of an area when it is unoccupied and starts or stops heating or cooling to keep the space within a pre-defined temperature range.
- **Night Economizing**: Area Control works with Time of Day Scheduling to initiate the Night Economizing operation. Night Economizing brings cool nighttime air inside the building to pre-cool the area before occupancy starts. Using cool outside air to help cool a building can reduce the load on the mechanical cooling equipment. Time of Day Scheduling provides the window of opportunity in which Area Control can use the night economizing mode. Area Control then determines if the outside air is cool enough to provide effective cooling.
- **Ventilation Coordination**: Area Control coordinates ventilation with heating and cooling functions during hours of occupancy.



- **Lighting Control**: Area Control works with Time of Day Scheduling to control lighting on and lighting off times to minimize operating costs.
- **Custom Programming Language**: You can create Custom Programming Language (CPL) routines that work with Area Control to control such system activities as Priority Shutdowns and Demand Limiting.
- **Timed Override (TOV)**: Area control monitors the status of the On and Cancel thermostat buttons of Trane SCC, VAV, and Voyager equipment. Upon seeing a timed override request from a Trane zone temperature sensor, Tracer Summit PC Workstation, or BCU operator display the area will change from its current state to occupied.

Area Mode/Member Modes

Table 7 on page 303 shows the standard operating behavior for binary output members and UCM members for each area control operating mode. For numeric entries (1, 2, 3, or 4), refer to the corresponding note.



Using Area Control

Binary Output Members					UCM	/CPL Mem	bers				
Area Mo	ode	Cool Only	Heat Only	H/C	Vent	Light	Cool Only	Heat Only	H/C	Vent	Light
Occupy	Heat	Off	1	1	On	3	Occupy	Occupy	Occupy	Occupy	3,5
	Cool	1	Off	1	On	3					
Unoccupy	Heat	Off	Off	Off	Off	3	Unoc- cupy	Unoc- cupy	Unoc- cupy	Unoc- cupy	3,5
	Cool	Off	Off	Off	Off	3					
*Night H/C	Heat	Off	On	On	Off	3	Unoc- cupy	Night H/C	Night H/C	Unoc- cupy	3,5
	Cool	On	Off	On	Off	3	Night H/C	Unoc- cupy			
*Night Economize		2	Off	2	Off	3	4	Unoc- cupy	4	Unoc- cupy	3,5
Optimal Start	Heat	Off	1	1	Off	3	Opti- mal	Opti- mal	Opti- mal	Opti- mal	3,5
	Cool	1	Off	1	Off	3	Start	Start	Start	Start	
Optimal Stop	Heat	Off	Off	Off	On	3	Opti- mal	Opti- mal	Opti- mal	Opti- mal	3,5
	Cool	Off	Off	Off	On	3	Stop	Stop	Stop	Stop	
Priority Shu	tdown	Off	Off	Off	Off	3	Priority Shut- down	Priority Shut- down	Priority Shut- down	Priority Shut- down	3,5

Table 7. Area Mode/Member Mode Chart

Notes:

1 On if the occupied temperature control is disabled, otherwise follows the occupied temperature control logic.

2 On if checked for night economizing.

3 Lighting members are controlled based on lighting control events in the Time of Day Scheduling application Binary output members will be *on* for lighting start events and *off* for lighting stop events. UCM/CPL lighting members will be *occupied* for lighting start events and *unoccupied* for lighting stop events.

4 Night economize if checked for night economizer. Night economize events must be scheduled in the Time of Day Scheduling application.

5 A timed override initiated by a UCM area member, the Area Editor Overrides tab, or the timed override toolbar button will override the present value of the area to occupied and the lighting value to On. The priority level will be Timed Override.

* Night Heat/Cool and Night Economizing are sub-modes of the area's unoccupied present value. The area itself remains unoccupied while its members are placed in these modes.





Timed Override Control

Table 7 on page 303 does not show a timed override mode because timed override only affects the present value of the area. When timed override is in control, the present value shows "Occupied" at a priority level of timed override.

Accessing the Area Control Editor

1. From the Setup menu, select Area. The Select Area dialog box displays (see Figure 270).

Figure 270. Select Area Dialog Box

Select Area
New
Administration 1st Main Lobby
Note To select multiple items in the edit window, hold down the CTRL key, and then click each item you want to select. To select a column of items, hold down the SHIFT key and click on the first and last item within the column of items you want to select.
New Select All Group Select OK Cancel Help

- 2. Select an existing area you wish to edit.
- 3. Click OK to display the Area Control editor (see Figure 271).

Figure 271: Area Control Editor

Į	Status	Setup	Members	OSS - Night Econ.	Overrides	Classes	
	Area Na	ame:	Administ	ration 1st Main Lobby			Dista
Operating Mode: Occupied - Heating						Graphic	
	Active	Setpoint	: 71.0				Report
	-BCU-						
	Name:		BMTWI	bcu			
	Commu	nication	s: BCU On	line			
	- Timed	Override	e (TOV)				
	Status:		Not Act	ive - Not In Control			
	Time R	emainin	g: 0 Minut	es			



Creating an Area

To create an area, you perform these tasks:

- Open and name the area (as described in this section)
- Assign members to the area (see "Assigning Members" on page 306)
- Define referencers for the indoor and outdoor air temperature sensor fields (see "Setting Air Temperature Sensors" on page 308)
- Define parameters for night economizing (see "Setting Up Timed Override" on page 310)
- Establish heating and cooling setpoints for the occupied and unoccupied modes and occupied and unoccupied differentials (see "Setting Setpoints and Differentials" on page 309)
- Assign event classes (see "Assigning Event Classes" on page 312)
- Define security access (see "Setting Security Access for the Area" on page 313)
- If necessary, enable and set duration for timed override members (see "Setting Up Timed Override" on page 310).

After you create an area, you should assign the Area object to a time of day schedule (see Chapter 24, "Time of Day Scheduling"). In the time of day schedule, you must include a night economizing value and a lighting value in addition to the present value if you intend to use those functions in area control.

To create an area:

1. From the Setup menu, select Area. The Select Area dialog box displays (see Figure 272).

Figure 272. Select Area Dialog Box

Select Area					×
Name Administration	n 1st Main Lobby				
Note To sela want to item wi	ect multiple items in o select. To select thin the column of	the edit window, hold a column of items, ho items you want to sele	d down the CTRL ke old down the SHIFT i ect.	y, and then click (key and click on t	each item you he first and last
New	Select All	Group Select	OK	Cancel	Help

2. Click New. The New Area Name dialog box displays (see Figure 273 on page 306).



Area Control Application

New Area Name			×
Area Name:			
	OK	Cancel	Help

- 3. Enter a name in the Area Name field. Make the name as informative as possible. Use a maximum of 32 characters. You must enter a name before you can save the new area. You can modify the name at any time from the Setup screen of the Area Control editor.
- 4. Click OK. The Area Control editor displays.
- 5. Click Save. The first time you save a new area, the Save Area dialog box displays (see Figure 274).

Figure 274. Save Area Dialog Box

Save Area				×
Area Name:	Marketing			
BCU Name:	Administration BCU			ľ
		<u> </u>	Cancel	Help

- 6. Click the name of the BCU in which you want the area to reside.
- 7. Click OK.

Assigning Members

1. From the Area Control editor, click the Members tab (see Figure 275).

Figure 275. Area Control Editor Members Screen

Status Setup Members	OSS - Night Econ.	Overrides	Classes				
Туре				Area Membe	rs		
Absorption Chiller (UCP2)		•		#	Member Type	Night Econ.	Initate TOV
Name							
Name			Add>>				
Absorption chiller (OCF2)			< <remove< td=""><td>1</td><td></td><td></td><td></td></remove<>	1			
				1			
			< <remove all<="" td=""><td>1</td><td></td><td></td><td></td></remove>	1			
		-		1			



- 2. Select the member type from the Type list.
- 3. In the Name list, click on the member names that you want to add to the area.
- 4. Click Add. The Select Area Member Type dialog box displays (see Figure 276). The dialog box displays for each member you have selected.

Figure 276. Select Area Member Type

Select Area Member Type	X
New Member	
Jscc	
MemberType Heating/Cooling	mize
Timed Overri	ide (TOV) Initiator
OK Cancel	Help

Note:

You can assign a member to only one area. If you try to add a member that is already assigned to another area, a message indicates that the member is currently assigned to another area. Do not assign a member to an area that also is an AHU or vent only member of a VAV Air System.

- 5. Click on the arrow to select the member type from the list in the Member Type field. Member types include Heating, Cooling, Heating/ Cooling, Lighting, and Ventilation.
- 6. Click the Night Economize check box if you want to use this member for night economizing. The only member types that you can check for night economizing are Cooling Only and Heating/Cooling.
- 7. Click the Timed Override (TOV) initiator checkbox to allow timed override requests to be initiated from Trane SCC (except for very early versions of the ZN510/511), VAV and Voyager members. Timed override requests for these members can be generated from a Trane zone sensor, a Tracer Summit PC Workstation, or a BCU operator display.

Note:

The Enable Timed Override checkbox on the Setup tab also has to be checked in order for the area to process requests and cancels from TOV members (see "Setting Up Timed Override" on page 310).

8. Click OK to add the member to the Area Members list (see Figure 277 on page 308).



Figure 277. Area Members List

Area Members

#	Member Type	Night Econ.	Initate TOV
01 - UCM	Heating/Cooling		

Setting Air Temperature Sensors

1. From the Area Control editor, click the Setup tab (see Figure 278).

Note:

The Heat/Cool Input field should generally be set to Auto. For details, see Tracer Summit online help.

Figure 278. Area Control Editor Setup Screen

Status Setup Members OSS - Night Econ. Oven	rides Classes
Status Setup Members OSS - Night Econ. Oven Area Name: Area Heat/Cool Input: Auto Image: Cooling Setpoint: Image: Cooling Setpoint:	rides Classes Differentials Occupied Differential: 1.0 Unoccupied Differential: 4.0 Sensors Space Temperature: ₹ 74.0 Outdoor Air Temp: ₹ 70.0
Duration: 120 Minutes Optional Request Source: 2 Not Used	

- 2. Enter a referencer in the Sensors Space Temperature field. Area Control uses the space temperature value, along with heating and cooling setpoints, to determine the heating/cooling mode (provided the Heat/ Cool Input field is set to Auto). For detailed information on using references, see Chapter 4, "Using Referencer Edit Controls."
- 3. Enter a referencer in the Sensors Outdoor Air Temperature field. Area Control uses the outdoor air temperature sensor for its Night Economizing and Optimal Start/Stop operations.



Setting Setpoints and Differentials

Area Control uses *occupied* setpoints to:

- Calculate optimal Start/Stop rates for Time of Day Scheduling
- Determine whether the area should be in heating or cooling mode
- Maintain occupied temperature control (Binary Output heating or cooling members only)

Area Control uses *unoccupied* setpoints to:

• Maintain unoccupied heating/cooling control

The differential values prevent equipment from cycling on and off too quickly. Occupied differentials affect only Binary Output members that are actively using the areas occupied heating/cooling setpoints. Unoccupied differentials affect both Binary Output and UCM members that are actively using the area's unoccupied heating/cooling setpoints.

To set setpoints and differentials:

1. From the Area Control editor, click the Setup tab (see Figure 279).

Figure 279. Area Control Editor Setup Screen

Status Setup Members OSS - Night Econ. Over	rides Classes
Area Name: Area	
Heat/Cool Input: Auto	Differentials
Unoccupied Cooling Setpoint: 2 85.0	Occupied Differential: 1.0
Occupied Cooling Setpoint: 274.0	Unoccupied Differential: 4.0
Occupied Heating Setpoint: 2 71.0	
Unoccupied Heating Setpoint: 🔁 60.0	Sensors
Enable Occupied Temperature Control	Space Temperature: 🔁 74.0
Enable Night Heating/Cooling	Outdoor Air Temp: 😰 70.0
Timed Override ✓ Enable Timed Ωverride	
Duration: 120 Minutes	
Optional Request Source: Rot Used	



- 2. To change the default setpoint values, enter referencers or new constants in the following fields:
 - Unoccupied Cooling Setpoint
 - Occupied Cooling Setpoint
 - Occupied Heating Setpoint
 - Unoccupied Heating Setpoint
- 3. To change the default differential values, enter new constants in the following fields:
 - Occupied Differential
 - Unoccupied Differential

Setting Up Timed Override

1. From the Area Control editor, click the Setup tab to display the Setup screen. (see Figure 280).

Figure 280: Area-Setup Screen

- 2. Make sure the Enable Timed Override checkbox is checked to enable timed override. The default setting for this checkbox is enabled.
- 3. In the Duration field, type the number of minutes you want timed override active after someone makes a timed override request. Timed override will remain active but not in control if:



- Another application controls the Area to occupied, such as a schedule.
- Another application at a higher priority level controls the Area to any mode.

Note:

You can edit this field when timed override is active, but the change will not take effect until the next timed override start request.

- 4. Use the Optional Request Source referencer to allow a timed override request from a binary property. (For an example of how to use this field, see the online help for the Area Editor–Setup tab.)
- 5. Click Save.

Note:

Area members in the member list on the Members tab must be set up for timed override in order for the area to process requests and cancels from TOV members (see, "Assigning Members" on page 306).

Setting Up Night Economizing

To set up night economizing use the Area Control and the Time of Day Scheduling (see Chapter 24, "Time of Day Scheduling").

To enable or disable Night Economizing in Area Control:

1. From the Area Control editor, click the OSS - Night Econ. tab (see Figure 281).

Figure 281. OSS - Night Economizing Screen

Status Set	up Members	OSS - Night Econ.	Overrides	Classes			
Optimal Start/Stop Rates Optimal Start (Min/Deg) Cooling: ??? Heating: ??? Heating: ???							
Enable Outdoor Air Temperature Compensation							
Night Economizing Input: Minimum Indoor/Outdoor Temperature Differential 15.0 Degrees							



- 2. Use the Night Economizing Input field to enable or disable Night Economizing manually, or select a referencer that will control the enabling and disabling of Night Economizing. For detailed information on referencing a property, see Chapter 4, "Using Referencer Edit Controls."
- 3. Enter a value in the Minimum Indoor/Outdoor Temperature Differential field. For Night Economizing to occur, the actual temperature differential between the indoor and outdoor temperatures must be greater than this number.

Assigning Event Classes

From the Classes screen, you can assign event classes for Control Class events and Timed Override Events (see Figure 282). An event class is an alarm category (system critical alarms, system log, no notification, etc.) that receives an event message.

For control class events, Tracer Summit will generate messages to notify the daily operator when the present value of the area changes state (for example, changes from unoccupied to occupied).

For timed override events, Tracer Summit will generate messages to notify the daily operator when a timed override has been requested, cancelled, or expired for the area.

Assigning an event class categorizes the type of event message that is routed to an event receiver (workstation, cell phone pager, BCU event log, etc.).

Note:

In the Site Configuration editor, you can choose which event receiver (workstation, cell phone pager, BCU event log, etc.) gets messages from an event class. For more information on choosing an event receiver, see "Setting Up Event Classes" on page 81.



To assign an event class:

1. From the Area Control editor, click the Classes tab.

Figure 282. Area Control Editor Classes Screen

Status Setup	Members OSS - N	light Econ.	Overrides	Classes	
Control Class:		No Notific	cation		•
Timed Override	(TOV) Class:				Y

- 2. Click the Control Class or Timed Override Class arrow to select an event class.
- 3. Click Save.

Setting Security Access for the Area

- 1. From the Area Control editor, click the Classes tab (see Figure 282 on page 313).
- 2. Click Security Classes to display the Change Security Classes dialog box (see Figure 283).

Figure 283. Change Security Classes Dialog Box

lass	Class Name	Access
1	System Operator	
2	Day Operator	v
3	Night Operator	
4	Security	
5	Chiller Plant	
6	Administration	
7	Manufacturing	
8	ICS University	
9	Engineering	
10	Applications	
11	Marketing	
12	Finance	
13	Training	
14	Product Commun.	
15	Human Resources	
16	Production	V



- 3. Click on the Access field next to each class to grant or deny access. A check in the field grants access. No check denies access.
- 4. Click OK to display the Classes screen.

Overriding an Area

When you override the present value and lighting value from the Overrides tab of a UCM editor, you perform the override using the advanced Override dialog box. However, we encourage you to define your default priority level in Site Security and override from graphics by using the simplifed overrides dialog box (see "Setting Up the Simplified Override Dialog Box" on page 172).

The Override function lets you manually override the present value and lighting value of an area. It also allows you to make a timed override request if timed override is enabled for the area.

Overriding the Present Value and Lighting Value

From the advanced override dialog box you can:

- Release control at the specific priority
- Change the present value at a specific priority

Note:

You will need access to change the priority level. Priority control ranges from 1 (highest) to 16 (lowest). The command with the highest priority controls the object. To take control off, you must select the Release Control option button. Then the next highest priority commands the object.



To access the Override dialog box:

1. From the Area Control editor, click the Overrides tab (see Figure 284).

Figure 284. Area Control Editor Overrides Screen

Status Setup Members	OSS - Night Econ.	Overrides	Classes	
Operating Mode				
Present Value: ???				Override
Lighting Value: ???				Override
Timed Override (TOV) State	us: ???			TOV

2. Click the Override button. The Override dialog box displays (see Figure 285).

Figure 285. Override Dialog Box

Override "The One and Only Area"	×
Request To	Priority Array
C <u>R</u> elease Control	15 - Time of Day Schedules xx - Relinquish Default
Change Value to:	
Occupied	
	Request of: Occupied
	By: Master Schedule
At Priority	Present Value
12: User, I ou	Last Control: 10/9/01 8:00:00 AM

Releasing Control to Another Priority

- 1. From the Override dialog box, click the Release Control option.
- 2. In the At Priority field, select the priority level that you want to release control to.

Note:

Control priorities identify the levels at which Tracer Summit applications control an object. Normally, control priorities are set to the Tracer Summit defaults. For information on setting up control priorities for non-Trane BACnet devices, see Chapter 37, "Using BACnet for Non-Trane Devices."



3. Click the Apply button to apply the override and view the results, or click OK to apply the changes and close the dialog box.

Changing the Present Value

- 1. Click the Overrides tab from the Area Control editor.
- 1. Click the Override button to display the advanced Overrides dialog box (see Figure 285 on page 315).
- 2. Select the new present value from the drop-down list.
- 3. Select the priority level to which you wish to give control in the At Priority field.

Note:

The Priority Array list shows all the applications and priorities that are currently commanding the object. The Priority Array and the Present Value fields show what the object is controlled to, when it was controlled last, and what application or user is controlling it.

- 4. Click Apply to perform the override.
- 5. Click OK to close the Overrides screen.

Making a Timed Override Request

After timed override is set up for an area, you can initiate or cancel a timed override request. (For setting up timed override for an area, see "Setting Up Timed Override" on page 310.) Timed override must be enabled in order for Area Control to process a request.

To start or cancel a timed override request:

- 1. From the Area Control editor, click the Overrides tab (see Figure 284 on page 315).
- 2. Click the TOV button to display the Timed Override dialog box (see Figure 286)

Figure 286. Timed Override Dialog Box

Timed Override Area Name:	Engineering Area	×
Timed Override Sta	tus Not Activo Not In Control	Timed Override Request
Time Remaining:	0 Minutes	C Cancel Timed Override
		OK Cancel Help



- 3. In the Timed Override Request box, click the desired option.
- 4. Click OK to close the Timed Override screen and begin the request.

Note:

You can also get to this dialog box by clicking on the TOV button on the toolbar.

Deleting an Area

An area cannot be deleted from the Area Control editor. Use the Delete Object function from the Tools menu to delete an Area object (see Chapter 39, "Deleting Objects and Sites"). Area Control Application





Chapter 21 Comm5 VAV Air Systems

The Tracer Summit Comm5 VAV air system (VAS) coordinates a collection of variable-air-volume (VAV) boxes and an air-handling unit (AHU) to create a coherent air system. VAS Comm5 provides the following capabilities:

- Manages common space VAVs to prevent over-pressurization of the ductwork.
- Controls the AHU to provide air when any VAV member is in the occupied mode.
- Provides built-in ventilation and pressure optimization features.
- Provides air and water balancing features.
- Automates the commissioning and calibration of VAVs.
- Reports status information on a standard graphic, a standard report, and the VAS Comm5 editor.

VAS Comm5 supports the following controllers:

- Tracer VV550/551 VAV controllers (recommended) and other controllers that support the VAV object of the LonMark® Space Comfort Controller (SCC) profile
- Tracer AH540/541 and MP580/581 controllers and other controllers that support the LonMark[®] Discharge Air Controller (DAC) profile

To create a VAV air system for Comm3 and Comm4 controllers, refer to Chapter 22, "Comm3/Comm4 VAV Air Systems."

Note:

The optimization features work only with Tracer VV550/551 controllers. If you use other controllers, additional features of VAS Comm5 may not be available depending on how the controllers implement the SCC profile.



Accessing the VAS Comm5 Editor

1. From the Setup menu, select VAV Air Systems, then select VAS Comm5. The Select VAS Comm5 dialog box displays (see Figure 287).

Figure 287. Select VAS Comm5 Dialog Box

Select VAS	Comm5				×
Name Comm5 VAS	3				
	_				
ОК	1	New	Cancel	Help	

2. Select an existing VAS object and click OK. The VAS Comm5 editor displays (see Figure 288).

Figure 288. VAS Comm5 Editor Status Screen

Status	Setup	Members	Overrides	Classes			
VAS Cou → Currer AHU M Commo VAV A System	nm5 Na t Opera lode Re on Spac uxiliary H Mode:	me: Comms ion quest: Occu e VAV Mode leat Control On	5 VAS upied a Request: O Request: Ar	ccupied uto	Display Graphic Report BCU Name: Rover Integration Communications: BCU Online		
Space	Tempe	rature Summ	hary				
Maxim	ım Spac	e Temperat	ure is 72.8 De	eg in VV550	_09		
Averag	e Spac	e Temperatu	ire is 72.8 De	g			
Minimum Space Temperature is 72.8 Deg in W550_09							
					Close Saye Open Another Help		



Creating a Comm5 VAV Air System

To create a Comm5 VAV air system, follow these steps:

- Create the object (see "Creating a VAS Comm5 Object" on page 321)
- Assign VAS members (see "Assigning VAS Members" on page 322)
- Assign common space VAVs (see "Assigning Common Space VAVs" on page 324)
- Set up the VAV air system, including using duct pressure optimization and ventilation optimization if necessary (see "Setting up a Comm5 VAV Air System" on page 326)
- Set up global references if necessary (see "Setting up Global References" on page 328)
- Change security classes if necessary (see "Setting Security Access" on page 329)

Creating a VAS Comm5 Object

- 1. From the Setup menu, select VAV Air Systems, then select VAS Comm5. The Select VAS Comm5 dialog box displays.
- 2. Click New. The New VAV Air Systems (VAS Comm5) Name dialog box displays (see Figure 289).

Figure 289. New VAV Air Systems (VAS Comm5) Name Dialog Box

New VAV Air Systems (VAS Comm5) Name					
VAV Air Systems (VAS Comm5) Name:					
	ОК	Cancel	Help		

- 3. Type a name in the VAV Air Systems (VAS Comm5) Name field. Make the name as informative as possible. Use a maximum of 32 characters. You can modify the name at any time from the Setup screen of the VAV Air System editor.
- 4. Click OK. The Status screen of the VAS Comm5 editor displays.
- 5. You will not be able to save the VAS until you add at least one VAV member (see "Assigning VAS Members" on page 322). After you have done so, click Save. The first time you save a new area, the Save VAV Air System dialog box displays (see Figure 290 on page 322).



Comm5 VAV Air Systems

Figure 290. Save VAV Air Systems (VAS Comm5) Dialog Box

Save VAV Air Systems	(VAS Comm5)	×
VAV Air Systems (VAS C	omm5) Name: West Wing Air System	
BCU Name:	WestWing	•
	OK Cancel	Help

- 6. Select the name of the BCU in which you want the VAV Air System to reside.
- 7. Click OK.

Note:

To delete a VAS object, use the Delete Objects utility from the Tools menu. Refer to Chapter 39, "Deleting Objects and Sites."

Assigning VAS Members

You can assign two types of VAS members:

- One air-handler member per VAS, which can be a Tracer AH540/541, a Tracer MP580/581, or other DAC device
- VAV members, usually Tracer VV550/551 VAV controllers (although you can use other SCC devices, some features of VAS Comm5 work only with Tracer VV550/551 controllers)

Note:

VAS Comm5 supports two types of air-handler objects: Tracer MP580/581 objects and DAC objects. The air-handler controller must be configured as a DAC device.

To assign members:

1. From the VAS Comm5 editor, click the Members tab (see Figure 291 on page 323).



Sta	tus	Setup	Members]ov	emides	Clas	sses			
-\	AV M	lembers								
	Nam	e			Common Space		Duct Pressure Optimization	Ventilation Optimization	Space Temperature Summary	Add Members
										Set VAV References
1) Men	mbers in	list							
- A	HU N	/lember								
I	Vame	¢								Add Member

Figure 291. VAS Comm5 Editor Members Screen

- 2. To add VAV Members, click the Add Members button in the VAV Members area. The VAV Members dialog box displays (see Figure 292).
- Figure 292. VAV Members Dialog Box

VAV Members	×
Available VAVs	Selected VAVs
Name CL10_R16 CL10_R24 CL10_R24 CL10_R28	Add >>
LCI-1_1.11 LCI-R_1.01 LCI-R_1.02 LCI-V_2.03 MP501 ZN510 B29	<< Remove
ZN510_B34 ZN517 ZN520_B21 ZN520_B22	Add All >>
	1 Members in list
	OK Cancel Help



3. Select the VAVs you want to add to the VAS. To add more than one VAV, hold down the Ctrl key and click each VAV you want to add.

All available Space Comfort Controllers (SCCs) display in the available VAVs list. Make sure that you select only SCCs configured as VAVs (VAS Comm5 does not check this for you).

- 4. Click the Add button. The VAVs you want to add display in the Selected VAVs list.
- 5. When you are done adding VAV Members, click OK.
- 6. To add the AHU member, click the Add Member button in the AHU Member area. The AHU Member dialog box displays (see Figure 293).

AHU Member	×
Туре:	
Name:	
AH540	•
OK Cancel Help]

Figure 293. AHU Member Dialog Box

- 7. In the Type list, select the type of air handler you want to add to the VAS.
- 8. In the Name list, select the air handler you want to add to the VAS.
- 9. Click OK.

Assigning Common Space VAVs

Common space VAVs act much like pressure relief valves—the VAS controls common space VAVs to make sure that there is always someplace for the air to escape when the AHU is on. Make sure that you assign enough common space VAVs to avoid over-pressurizing the ducts. If you have other ways to relieve duct pressure, you may not need to use common space VAVs.

Typically, common space VAVs should serve common areas, such as lobbies, hallways, and restrooms. You can, however, designate any VAV as a common space VAV.

Follow these guidelines when assigning common space VAVs:

- Because common space VAVs act as pressure relief valves, do not set their minimum flow setpoints to zero.
- A VAV cannot be a common space VAV if it is already a member of an Area object.



- You cannot schedule common space VAVs because only the VAS can control them. Common space VAVs still provide space temperature control of the zone like any other VAV.
- If you decide to change a common space VAV back to a normal VAV, you will have to manually release the priority level 9 control that VAS has over the VAV. If you do not release the priority control, Area will not be able control the VAV because it controls at a lower priority level.

To assign common space VAVs:

- 1. In the VAV Members table on the Members screen, select the Common Space check boxes for the VAV members that you want to serve as common space VAVs (see Figure 294).
- 2. Click Save to save your changes.

Figure 294. Assigning Common Space VAVs

[Stati	12	Setup	Members	Overrides	Classes				
[- 7/	AV M	lembers							
		Nam	e		Common Space	Duct Pressure Optimizatio	Ventilation Optimization	Space Temperature Summary		Add/Remove Members
		FP V.	AV 3-04	Bill Nesheim		Image: A state of the state	~	✓	1	Set VAV References
		FP V.	AV 3-05	5 Corridor -	 Image: A start of the start of	✓	~	✓		
		FP V.	AV 3-06	6 Corridor -	✓	✓	 Image: A start of the start of	✓		
	1	VAV	3-01 Br	ady Moroney		✓	 Image: A start of the start of	✓		
	VAV 3-02 South America				✓	✓				
	1	VAV	3-03 Pa	at Madigan		Image: A start of the start	✓	✓		
	1	VAV	3-04 Da	ave Molin		✓	✓	✓		
	Ľ	VAV	3-05 He	eather					-	
	20 Members in list									
	-Al	HU M	1ember							
	N	ame	: RTU	-3 Engineerin	g					Remove Member



Setting up a Comm5 VAV Air System

Use the Setup screen to configure your Comm5 VAV air system. Click the Help button or press F1 to access the online Help, which contains detailed descriptions of each field.

To set up a Comm5 VAV air system:

1. From the VAS Comm5 editor, click the Setup tab (see Figure 295).

Figure 295. VAS Comm5 Editor Setup Screen

Status Setup Members Overrides Classes	
VAS Comm5 Name: New VAV Air System Duct Pressure Optimization Default Duct Pressure Setpoint: 1.5 in W.C.	Ventilation Optimization Default Ventilation Setpoint: 0 CFM
✓ Enable Duct Pressure Optimization Duct Pressure Setpoint Maximum Value: 3.0 in W.C. Minimum Value: 1.0 Adjustment Increment: 0.1 in W.C.	Image: Second
VAV Air Valve Position High Limit: 95 % Low Limit: 85 % Allow Reset Every: 15 Minutes	AHU Startup Delay: 5 Minutes Common Space VAV Shutdown Delay: VAV Calibration: 2 Normal 2 Allow VAV Aux Heat at Night

2. In the AHU Startup Delay field, type the number of minutes for the VAS to wait before starting the AHU.

The AHU startup delay should be at least the amount of time it takes for the air valves in the common space VAVs to open to an acceptable position. The startup delay prevents the ductwork from overpressurizing.

3. In the Common Space VAV Shutdown Delay field, type the number of minutes for the VAS to wait before shutting down common space VAVs after the AHU enters the unoccupied mode.

The shutdown delay should be at least the amount of time it takes the AHU to go from full speed to a complete stop. To prevent the ductwork from over-pressurizing, VAS Comm5 prevents its common space VAVs from entering the unoccupied mode during the shutdown delay. Note that Tracer VV550/551 controllers have an automatic three-



minute shutdown delay, which begins after the VAS shutdown delay is over.

4. In the VAV Calibration field, select Recalibrate if you want to initiate a recalibration of VAV members. You can also set up a referencer to a binary output to trigger recalibration (for example, you can reference a binary output and assign a schedule to the output). The BCU staggers the calibration requests to prevent the ductwork from over-pressurizing.

Because Tracer VV550/551 calibrate automatically when they transition from occupied to unoccupied, use the VAV Calibration field only for VAVs that are continually occupied.

5. Select the Allow VAV Aux Heat at Night check box to allow VAV auxiliary heat at night.

If you want to disable auxiliary heat at night to reduce energy usage, clear this check box. For this feature to work, you must also reference the Auxiliary Heat Control property of all VAV members to the VAS Aux Heat Control Request property (you can do this globally by clicking the Set VAV References button on the Members screen as described in "Setting up Global References" on page 328).

6. Select the Enable Duct Pressure Optimization check box if you want to use duct pressure optimization. Type new setpoints if necessary. In most cases, use the default settings for best performance. (Press F1 for a description of each field.)

The duct pressure optimization feature determines the optimal duct pressure based on VAV air-valve positions. This optimization reduces energy costs by ensuring that the AHU is working just hard enough to satisfy the most-open VAV air valve. Duct pressure optimization works only with Tracer VV550/551 controllers.

7. Select the Enable Ventilation Optimization check box if you want to use ventilation optimization. Type new setpoints or set up referencers if necessary. In most cases, use the default setpoints for best performance. (Press F1 for a description of each field.)

The ventilation optimization feature manages the outdoor air intake system to meet *ANSI/ASHRAE* Standard 62-2001: Ventilation for *Acceptable Indoor Air Quality*. This standard specifies minimum ventilation rates and indoor air quality to minimize the potential for adverse health effects for occupants. Ventilation optimization works only with Tracer VV550/551 controllers.

8. Click Save to save your changes.



Setting up Global References

VAS Comm5 provides a way to set up references across the variable air system. After you create the global references, you cannot undo them in VAS Comm5. You can change the references only in the SCC editor for each device (or globally in the Analog Output object editor).

To set up global references:

- 1. From the VAS Comm5 editor, click the Members tab.
- 2. Click the Set VAV References button. The VAV References dialog box displays (see Figure 296).
- 3. Select the global references you want to set up, then click OK. Some options are not available until you assign an AHU member. (Click the Help button or press F1 for a description of each option.)

Figure 296. VAV References Dialog Box

VAV References X				
Reference all VAV Members' Source Temperature to AHU Discharge Air Temp				
Reference all VAV Members' VAV Drive Max Heat to AHU Max Heat: Active				
Reference all VAV Members' Auxiliary Heat Control to VAS Aux Heat Control Request				
Note: Deselecting a check box and clicking OK will not change or remove these references. Click Help for more information.				
OK Cancel Help				



Setting Security Access

Use the Classes screen to set security access for VAS Comm5.

To set security access:

- 1. From the VAS Comm5 editor, click the Classes tab.
- 2. Click the Security Classes button. The Change Security Classes dialog box displays (see Figure 297).

Figure 297. Change Security Classes Dialog Box

Class	Class Name	Access		
1	System Operator			
2	Day Operator			
3	Night Operator			
4	Security			
5	Chiller Plant			
6	Administration			
7	Manufacturing 🔽 🔽			
8	ICS University 🔽			
9	Engineering			
10	Applications			
11	Marketing 🔽			
12	Finance			
13	Training			
14	Product Commun.			
15	Human Resources			
16	Production			

- 3. Select the Access check box next to each class to grant or deny access to the security class. A check in the field grants access.
- 4. Click OK to close the Change Security Classes dialog box.
- 5. Click the Save button to save your changes.



Balancing Air and Water Flow

To assist with balancing air and water flow, use the system-wide overrides found on the Overrides tab (see Figure 298).

From the Overrides screen, you can apply the following overrides to the air valves of all VAV members:

- Drive to minimum cooling flow setpoint
- Drive to maximum cooling flow setpoint
- Drive to a percentage of the maximum cooling flow setpoint

You can apply the following overrides to the water valves of all VAV members:

- Drive open
- Drive closed

Figure 298. VAS Comm5 Editor Overrides Screen

Status Setup Members Overrides Classes	
VAV Air Valve O Drive to Min Cooling Flow Setpoint	VAV Autocommissioning Sequence
O Drive to Max Cooling Flow Setpoint	C Cancel
O Drive to Percent of Max Cooling Flow Setpoint 75 🛖 炎	Apply
C Release Override	
Apply	
VAV Water Valve	
O Drive Open	
O Drive Closed	
C Release Override	
Apply	

To perform an override:

- 1. Select the appropriate option.
- 2. Click the Apply button to perform a system-wide override.

Note:

Use the Rover Air and Water Balancing tool if you need additional balancing features.





To Release an override:

• Click the Release Override Option to release the system-wide override.

Note:

If you do not release overrides from the VAS Comm5 editor, they will release automatically in each VAV controller after a certain period of time (by default, overrides to Tracer VV550/ 551 controllers release automatically after 10 hours, though this time can be changed in Rover Comm5).



Autocommissioning VAVs

Autocommissioning is a special operating sequence that validates the proper operation of all inputs and outputs of VAV members. Because air valves are closed during parts of the autocommissioning test, the BCU commissions the VAVs in several groups to avoid over-pressurization. The BCU divides common space VAVs evenly among the groups.

Note:

Because the BCU staggers the VAVs being autocommissioned, starting another staggered sequence will interrupt the current sequence. For example, if a calibration sequence is initiated while autocommissioning is in progress, autocommissioning will stop and calibration will begin. Autocommissioning will not resume after the calibration sequence finishes.

To autocommission VAVs:

- 1. From the VAS Comm5 editor, click the Setup tab.
- 2. If duct pressure optimization is enabled, clear the Enable Duct Pressure Optimization check box, then click Save.
- 3. Click the Overrides tab.
- 4. In the VAV Autocommissioning Sequence area, select Start, then click the Apply button.
- 5. Click OK to acknowledge the message that displays.
- 6. To check the progress of the autocommissioning sequence, open the VAS graphic by double-clicking the VAS icon in the navigation tree. While autocommissioning is in effect, the Mode: Active property of each VAV member will report Test (see Figure 299). Autocommissioning should take no more than 90 minutes, regardless of the size of your VAS.

Figure 299. VAV Graphic

	VAV Members						
	Object Name	Mode: Occupancy	Mode: Active	Alarm Present	Space Temperature: Active	Space Temperature Setpoint: Active	Airflow: Active
l	√√550_09	Unoccupied	Test	No	72.9	98.0	11
L			\sim				

- 7. After the autocommissioning sequence is done, re-enable duct pressure optimization if you are using it in your VAS.
- 8. On the Status screen of the VAS Comm5 editor, click the Report button. The Select Standard Live Report dialog box displays.
- 9. Select VAS Comm5 Commissioning Report, then click OK. The VAV Commissioning Report displays.
- 10. Print or save the report as needed, then click Close.



Chapter 22 Comm3/Comm4 VAV Air Systems

The variable air volume air system (VAS), usually referred to as the VAV air system, is made up of variable air volume (VAV) boxes, the air-handling equipment that supplies hot and cold air to those boxes, and ventilation-only members. VAS works with Area Control and Time of Day Scheduling to manage the air handling unit and the associated VAV boxes.

Using the VAV air system, you can:

- Determine the heating or cooling control action of its VAV members
- Audit VAV member requests for Night Heat/Cool and Night Economize to verify that adequate demand exists before enabling the air handler
- Total the minimum cooling flow setpoints and present value votes of its VAV members to determine its own and the air handler's present value
- Control AHU startup and VAV shutdown delays during occupancy transitions
- Provide an offset control value for VAV I members

Depending on the member characteristics, you can use these options:

- Drive VAV boxes to maximum airflow position when the VAS heat/ cool mode is heating
- Provide VAV airflow overrides for all VAV members
- Specify supply air setpoints for air handler reference

These tasks are all accomplished through the VAV Air System editor, which is one of several editors in Tracer Summit that you use to set up, define, and modify elements in the system.

To create a VAV air system for Comm5 controllers, refer to Chapter 21, "Comm5 VAV Air Systems."



Accessing the VAV Air System Editor

1. From the Setup menu, select VAV Air System. The Select VAS dialog box displays (see Figure 300).

Figure 300. Select VAS Dialog Box

Select VAS						×
Name						T
Administra	tion Air Sysl	æm -				_
, OK		New	Can	cel	Help	

2. Select an existing VAS object and click OK. The VAV Air System editor displays (see Figure 301).

Figure 301. VAV Air System Editor Status Screen

VAS Name: Administration Air System	Status	Setup	Members	Setpoints	Overrides	Classes				
VAS Operating Mode: Occupied Cooling Supply Air Temperature: Not Used VAV / AHU Status Communications: AHU Fan Request: On AHU Flow Switch: Not Used Startup Delay Active: Member Status No VAV Shutdown Delay Active: No Vent Only Members: On	V S A A S I V V V V	AS Name AS Opera upply Air AV / AHU HU Fan R HU Flow S tartup Del ember Sta (AV Shutd 'ent Only 1	: Administra ating Mode: Temperature Status equest: Switch: ay Active: atus lown Delay A Members:	ation Air Syste Occupie Cooling : Not Use On Not No Active: N	em d d Used No Dn	- BCU - Name Comn	: unications:	Administration BC BCU Online Report	J	



Creating a VAV Air System Object

To create a VAV Air System object, you follow these steps:

- Open and name the object (as described in this section)
- Assign VAS members (see "Assigning VAS Members" on page 336)
- Set up the VAV Air System (see "Setting Up a VAV Air System" on page 338)
- Modify setpoints (see "Modifying Setpoints" on page 341)
- Modify overrides, if necessary (see "Modifying Overrides" on page 342)
- Change control and security classes (see "Routing Alarms and Events and Setting Security Access" on page 343)

To create the VAV Air System object:

- 1. From the Setup menu, select VAV Air System. The Select VAS dialog box displays.
- 2. Click New. The New VAV Air System Name dialog box displays (see Figure 302).

Figure 302. New VAV Air System Name Dialog Box

New VAV Air System	n Name		×
VAV Air System Name:			
	OK	Cancel	Help

- 3. Enter a name in the VAV Air System Name field. Make the name as informative as possible. Use a maximum of 32 characters. You must enter a name before you can save the new VAV Air System object. You can modify the name at any time from the Setup screen of the VAV Air System editor.
- 4. Click OK. The Status screen of the VAV Air System editor displays.
- 5. Click Save. The first time you save a new area, the Save VAV Air System dialog box displays (see Figure 303).

Figure 303. Save VAV Air System Dialog Box

Save VAV Air System		×
VAV Air System Name:	South Wing Air System	
BCU Name:	Administration BCU	_
	Cancel	Help





- 6. Select the name of the BCU in which you want the VAV Air System to reside.
- 7. Click OK.

Assigning VAS Members

Once the VAV Air System object is created, you must assign members. There are three different types of VAS members:

- Air handlers
- VAV boxes
- Ventilation-only devices

To assign members:

1. At the VAV Air System editor, click the Members tab to display the Members screen (see Figure 304).

Figure 304. VAV Air System Editor Members Screen

Status Setup Members Setpoints Overrides Cl	35262
Category Air Handler Type IntelliPak Name RTU-1 AMS RTU-2 Marketing-Applications RTU-3 Engineering RTU-4 Training	Air Handler Members List Current Members RTU-1 AMS << Remove << Remove All Reset Votes 1 members in list

- 2. From the Category list box, select the category of the VAS members you would like to add. There are three options:
 - Air handler
 - VAV
 - Vent only
- 3. In the Type list box, select the type of Air Handler, VAV, or Vent Only object from these options:
 - Air handler: Binary Output, CPL Program, CSC, DAC, Intellipak, PCM, TCM, UPCM, Voyager, Voyager (Comm3), MP580/581


- VAV: VAV I, VAV II/III/IV
- Vent only: Binary Output, CPL Program

The Name field now displays a list of all of the objects that are of the same object type selected in the Type list box.

- 4. Select the name of the object you want to add. You can select as many members as you want.
- 5. Click Add to add the Selected members to the Current Members list box.

To change the Current Members list, click Remove or Remove All until the list displays only those members you want to add.

Resetting the Votes List for VAV Membership

The VAV Air System votes list keeps track of all its VAV members' present values (for example, Occupied, Unoccupied, and Optimal Start) and minimum cooling flow setpoints. When VAVs are removed from the VAS membership list, the VAS retains votes from those VAVs that no longer belong to that VAS, until the votes list is reset. The Reset Votes button is used when VAV membership to the VAV Air System is altered.

To Reset the VAV Membership Votes List:

- 1. At the VAV Air System editor, click the Members tab to display the Members screen (see Figure 304 on page 336).
- 2. If VAV membership has changed (removed members), save the changes.
- 3. Click the Reset Votes button to remove votes no longer belonging to this VAS.

Note:

The BCU must be online in order for the reset to work. However, the Reset Votes button is always enabled.

Example:

The site called STARPORT has two VAV Air Systems in it (VAS#1 and VAS#2). Originally, each air system was set up with 20 VAV members each, which is a mistake. VAS#1 really has 18 VAVs connected to it while VAS#2 has 22 VAVs connected to it. To correct the situation, you must first remove the two extra VAVs from VAS#1. Then after saving the changes to VAS#1, you must click the Reset Votes button. The two extra VAVs are then added to VAS#2. Changes to VAS#2 are saved.

Note:

It is not necessary to reset votes when VAVs are added to a VAS, only when VAVs are removed.



Setting Up a VAV Air System

Once the VAV Air System object is created and members are assigned, you can set up the VAS to suit the individual needs of the system. You use the VAV Air System editor's Setup screen to enter or modify setup information.

To set up a VAV Air System:

1. From the VAV Air System editor, click the Setup tab (see Figure 305).

Figure 305. VAV Air System Editor Setup Screen

Status	Setup	Members	Setpoints	Overrides	Classes		
	an 🔽	AX / 10				-	
	S Name: V	AV III					
ГОр	erating Mode						
VA	S Minimum F	low:		0			
He	at/Cool Input	t	₽ MWU Settir	ngs 🔻	AHU Flow Sw	itch:	¢ Not Used
Su	pply Air Temp	perature:	⊉ Not Used		Occupy/Unoc	cupy Output:	¢ Not Used
VA	V Airflow Driv	ve Max:	⊉ ^{Auto}	•			
	rning Warmu	p					
Te	mperature:		4	70.0			
Se	tpoint:		\$	70.0			
Dif	ferential:			2.0			

- 2. To modify the VAS name, enter a new name in the VAS Name field.
- 3. To modify the VAS minimum flow value, enter the minimum amount of air that the air handler members can deliver when the supply fan is on in the VAS Minimum Flow field. You can obtain this number from the air handler manufacturer.
- 4. To modify the heat/cool input, select one of these choices in the required Heat/Cool Input field:
 - To allow the VAS to automatically determine its own heat/cool mode, select MWU Settings (morning warm up) from the list box. The heat/cool mode of the VAS will change between heating and cooling based on the values of the VAS morning warm up sensor, setpoint, and differential.
 - If the air handler is a heating only or a cooling only machine, select either Heating or Cooling from the list box. Do not use a referencer.



• Reference another heat/cool property in the Tracer Summit system (perhaps the heat/cool mode of the Air Handler itself), using a referencer edit control.

Although the Heat/Cool mode of the VAS can determine the heat/cool mode of its Air Handler members, it does not automatically do so. Typically, if the air handling unit is capable of making its own heat/ cool decision (as IntelliPak, Voyager, and CSC can), the air handling unit's mode will determine the heat/cool mode of the VAS.

5. If you want the VAS to use the supply air temperature, in the Supply Air Temperature field enter a constant or assign a reference.

Note:

Only VAV II/III/IV members can use the VAS supply air temperature. VAV I members do not use the VAS supply air temperature even if a sensor is assigned to the entry field. VAV I control action follows the heat/cool mode of the VAS.

The Supply Air Temperature specifies the active temperature of the supply air feeding the VAV boxes of this system. Assigning a supply air temperature allows VAV II/III/IV members to make their own decision for heat/cool control action based on a comparison of supply air temperature and zone temperature.

If you select Not Used for the Supply Air Temperature field, the heat/ cool control action VAV II/III/IV members follow the heat/cool mode of the VAS.

6. To use the VAV Airflow Drive Max field, select the desired setting.

Note:

During an Airflow Drive Max override, parallel fans, electric heat, and hot water heat are disabled for VAVs that have them.

The VAV Airflow Drive Max field appears twice in the editor; once on the Setup screen and once on the Overrides screen.

- If you select Auto, the UCM uses its local control algorithms to decide when to implement the Drive max function.
- If you use a referencer edit control, Auto displays in the entry field when the referencer is in the zero (0) state. In the zero state, the UCM can still locally decide to drive to maximum flow if it needs to. When the referencer is in the one (1) state, Drive Max appears in the entry field, and the Drive Max override is initiated from the Tracer Summit system.
- Some air handler units (such as IntelliPak, Voyager, and CSC) have properties that indicate when they are going into a constant volume heating mode, and thus require that all downstream VAV boxes open their air valves to maximum position. You must assign the property from the Air Handling Unit as the referencer. For the IntelliPak and Voyager, this property is called VAS Drive to Max.
- If your air handler does *not* have a predefined property for heating mode, click the Overrides tab. On the Overrides screen, check



the box for Drive VAVs to Max Flow if VAS is Heating. Click Save and return to the Setup screen.

Note:

If you selected MWU Settings in the Heat/Cool input field, the system uses the Morning Warmup fields to determine its heat/ cool mode. (These fields have no other bearing on control.)

7. To assign the morning warm up temperature, in the Temperature field select a referencer (which will typically be a zone temperature sensor in the system). Air handler members that are capable of a morning warm up cycle might want to reference the VAS Morning Warmup fields if they do not have their own. VAS does not automatically determine the morning warm up settings for the air handling unit members, but provides reference information.

Occupied mode: If the temperature reported from the morning warm up sensor is less than or equal to the morning warm up setpoint minus the differential, the VAS heat/cool mode is heating. If it is greater than the morning warm up setpoint, the VAS heat/cool mode is cooling.

Unoccupied mode: If the temperature falls below this setpoint, the VAS heat/cool mode is heating. If it rises above it, the VAS heat/cool mode is cooling. The differential is ignored when the VAS is unoccupied.

- 8. To assign the morning warm up setpoint, in the Setpoint field select a referencer (which will typically be a zone temperature setpoint in the system). If the VAS heat/cool input is left in MWU Settings, the morning warm up setpoint determines the cutoff point at which the VAS changes modes from heating to cooling or vice versa. (For a description of the occupied and unoccupied modes, see the previous step.)
- 9. To modify the morning warm up differential (the default is 2.0 degrees), enter a number in the Differential field. The morning warm up differential value is the deadband used to keep VAS heat/cool mode from cycling too quickly between occupied heating and occupied cooling. You can set a 0.0°F to 10.0°F buffer that the temperature must surpass before switching modes. The differential is ignored when the VAS is unoccupied.



Modifying Setpoints

The default values for the fields found on the VAV Air System editor's Setpoints screen are what you would expect to find on most job sites. Occasionally, however, you may need to change supply air setpoints, changeover delay times, changeover votes, and the VAV I control offset.

To change setpoints:

- 1. From the Setup menu, select VAV Air System to display the Select VAS dialog box. The dialog box lists all existing VAS objects.
- 2. From the list displayed in the Select VAS dialog box, select the one you want to modify.
- 3. Click OK to display the VAV Air System editor. The Status window becomes active and displays the settings and status of the object you selected.
- 4. Click the Setpoints tab to display the Setpoints screen (see Figure 306).

Status	Setup	Members	Setpoints	Overrides	Classes]
Г	Supply A	Air — — — — — — — — — — — — — — — — — — —				Changeover Votes
	Cooling	Setpoint:	4	55.0		VAV Night Heat/Cool
	Heating	Setpoint:	\$	140.0		Minimum On: 6
	Duct Pre	essure Setpo	int 😰	1.0		Minimum Off: 8
Г	Change	over Delay T	imes —			VAV Night Economize
	AHU Sta	artup:		5	Minutes	Minimum On: 4
	VAV Shi	utdown:		5	Minutes	Minimum Off: 4
	VAV1 C	ontrol Offset:		0	Degrees	

Figure 306. VAV Air System Editor Setpoints Screen

- 5. Change the desired values in the Supply Air group, Changeover Delay Times group or the VAV I Control Offset field.
- 6. To change the values in the Changeover Votes group, refer to the section "Modifying Changeover Vote Setpoints" on page 342.



Modifying Changeover Vote Setpoints

The Present Value of the VAS is determined from the Present Value voting of the VAVs. A VAV box votes its Present Value to the VAS each time the VAV's Present Value changes. The Minimum On and Minimum Off votes are the number of members required to vote for a change before the VAS considers the transition. You can redefine the number of VAV Present Value votes needed for Night Heat/Cool and Night Economize operations in these fields.

To change the value:

- 1. Click the text box of the value you want to change to Select the current value.
- 2. Enter a new value for the number of votes.
- 3. Click Save.

Modifying Overrides

The Overrides screen of the VAV Air System editor contains the fields that override normal VAV box operation. To override the VAV terminal units' flow control you can assign a binary reference to the appropriate flow override. You can also select the desired flow override from the list box.

You can override the VAV unit flow control either from the VAV object editor (individually) or from the VAS to which the VAV unit belongs. The VAV object editor source is the higher priority if there are overrides from both sources.

To modify overrides:

1. Click the Overrides tab in the VAS editor to display the Overrides screen (see Figure 307).

Figure 307. VAV Air System Editor Overrides Screen

Status Setup	Members Setpoints	Overrides	Classes	1
VAV Air Flow-				
Drive Open:	⊉ ^{Auto}	-		
Drive Closed:	¢ Auto	-		
Drive Min:	₽ ^{Auto}	-		
Drive Max:	\$ ^{Auto}	- I		
🗖 Drive VAVs	s to Max Flow if VAS is Heat	ing		

2. Change the values in the desired fields by choosing a constant value, or reference another property in the system to control the field.



3. To provide a VAV flow override to maximum if the VAS heat/cool mode is heating, click the check box next to the field Drive VAVs to Max Flow if VAS is Heating.

Routing Alarms and Events and Setting Security Access

At the VAV Air System editor's Classes screen, you can assign alarm and event routing and set security access for the VAV Air System.

Defining Alarm and Event Routing

1. From the VAV Air System editor, click the Classes tab (see Figure 308).

Figure 308. VAV Air System Classes Screen

Status	Setup	Members	Setpoints	Overrides	Classes		
Control	Class:	2. Suster	m Log		-		
00111101	01000.	JE OYSICI	in Eog				
Securit	v Classe:	s					

2. In the Control Class field, select a control class. The control class defines the event class that will receive an event message when the present value of the VAV Air System changes.



Setting Security Access

- 1. From the VAV Air System editor, click the Classes tab.
- 2. Click the Security Classes button. The Change Security Classes dialog box displays (see Figure 309).

Figure 309. Change Security Classes Dialog Box

Class	Class Name	Access		
1	System Operator			
2	Day Operator			
3	Night Operator			
4	Security			
5	Chiller Plant			
6	Administration			
7	Manufacturing			
8	ICS University			
9	Engineering			
10	Applications			
11	Marketing 🔽			
12	Finance			
13	Training			
14	Product Commun.			
15	Human Resources			
16	Production			

- 3. Click on the Access field next to each class to grant or deny access to the security class. A check in the field grants access. If unchecked, permission to the security class is denied.
- 4. Click OK to close the Change Security Classes dialog box.

Deleting a VAS Object

To delete a VAS object, use the Delete Objects utility from the Tools menu. Refer to Chapter 39, "Deleting Objects and Sites."



Chapter 23 Heat Pump Loop Control

The Heat Pump Loop Control (HPLC) application provides coordination between a water-source heat pump (WSHP) with Space Comfort Controller (SCC) profile UCM and a Tracer loop controller. A Tracer loop controller controls for example, pumps, cooling towers, and boilers for the WSHP water loop. The program performs two main functions:

- It enables or disables the compressors of WSHP members based on the operation of the water loop. For example, if there is no flow in the water loop, all WSHP compressors are disabled until flow is established.
- It monitors the WSHP's status and determines the proper water loop operation needed.

Each WSHP should be placed in an area and the area should be scheduled as desired. When a WSHP goes into the occupied mode, the HPLC application also goes occupied, and the Tracer loop controller is requested to operate the loop. When all units go into the unoccupied mode, the HPLC goes unoccupied, and the Tracer loop controller shuts down.

Note:

When in the unoccupied mode, the HPLC application monitors the need for heating or cooling (represented by the terminal load property) of all WSHP members in order to determine when to go into the Night Heat/Cool mode. Each WSHP member votes its need-to-run based on a terminal load that is greater than 30% (a positive 30% for cooling and a negative 30% for heating). When enough WSHP members vote a need-torun, the HPLC application transitions from the unoccupied mode to the Night Heat/Cool mode, enabling the Tracer loop controller to run.

All WSHP members vote continually to the HPLC concerning whether they have a need-to-run or not. The Need-to-Run Threshold located on the Setup screen determines how many WSHPs are needed to initiate Night Heat/Cool operation. In the Night Heat/Cool mode, the HPLC application commands the Tracer loop controller to run. In turn, the Tracer loop controller monitors system water flow and enables the WSHP compressors to run, allowing the units to reach their unoccupied setpoints. The HPLC transitions back to the unoccupied mode when enough WSHP members fall within their unoccupied setpoints.



Accessing the Heat Pump Loop Control Editor

1. From the Setup menu, select Heat Pump Loop Control. The Select Heat Pump Loop dialog box displays (see Figure 310).

Figure 310. Select Heat Pump Loop Dialog Box

S	elect Heat P	ump La	ор			×
	Name					
	HPLC1-65					
	OK		New	ancel	He	lp 🛛

- 2. Select a heat pump loop.
- 3. Click OK to display the Heat Pump Loop Control editor Status screen (see Figure 311).

Figure 311. Heat Pump Loop Control Status Screen

Status Setup Classes	
HPLC Name: HPLC 1 - 65 Loop Controller Mode: Occupied	BCU Name: Comm5BCU Communications: BCU Online
Heat Pumps Heating Load: 0.0 Cooling Load: 0.0 Compressors: Auto "Need To Run" Votes: 0	Display Graphic Report
WSHP Active Diagnostics	
Reset All Diagnostics	Reset All Maintenance Timers



From the Status screen you can view the following occupancy status of WSHP members:

- Tracer loop controller mode (as determined by the HPLC application)
- Current total heating and cooling loads for all WSHPs on this loop
- Compressor enable mode (as determined from the referencer on the Setup screen)
- Need-to-Run Votes

Creating a New Heat Pump Loop Object

To create a new heat pump loop:

- 1. From the Setup menu, select Heat Pump Loop Control. The Select Heat Pump dialog box displays (see Figure 310 on page 346).
- 2. Click New. The New Heat Pump Loop Name dialog box displays (see Figure 312).

Figure 312. New Heat Pump Loop Name Dialog Box

New Heat Pump Loo	p Name		×
Heat Pump Loop Name	e		
,			
	ОК	Cancel	Help

- 3. Type the name of the heat pump loop. Make the name as informative as possible. Use a maximum of 32 characters. You must enter a name before you can save the new heat pump loop. You can modify the name at any time from the Setup screen of the Heat Pump Loop editor.
- 4. Click OK. The Heat Pump Loop editor Setup screen displays (see Figure 313 on page 348).



Setting Up the Heat Pump Loop Control Object

1. From the Heat Pump Loop Control editor, click the Setup tab (see Figure 313).

Status Setup Classes	
HPLC Name: HPLC 1 - 65 "Need To Run" Threshold: 10 Enable Startup: IDisable I	
HPLC Members Category Water Source Heat Pump Type SCC SCC Name	rrent Member List 12-5-1-52 12-5-1-54 12-5-1-57
Name Add >> LCISCC-4-4-1 SCC-5-1-100 SCC-5-1-53 SCC-5-1-55 SCC-5-1-56 SCC-5-1-58 SCC-5-1-59 SCC-5-1-60 Image: Comparison of the system	mber of Members In List: 3
WSHP Compressors:	

Figure 313. Heat Pump Loop Control Setup Screen

- 2. In the Need-to-Run Threshold field, type the total number of need-torun votes needed from WSHP members before the HPLC transitions from the unoccupied mode into the Night Heat/Cool mode. The default number is 10 votes.
- 3. Set the Enable Startup field to a constant of Disable, or referenced to a binary output object that is controlled by a Time of Day Schedule (TOD) or CPL routine.

Note:

The Enable Startup referencer field allows you to have the loop pre-heated or pre-cooled in advance of start up of the water source heat pumps.

4. Check the Continuous Operation check box if you want the water loop to operate continuously. If this is checked, the Tracer loop controller is always in the occupied mode, regardless of individual WSHP schedules or need-to-run.



5. Assign a referencer to the WSHP Compressor field.

Note:

The WSHP referencer is used to monitor water loop operation and lock out compressor operation of the heat pumps when the loop is not operating properly. When a Tracer loop controller is used, the Compressor Control: Active property is automatically referenced. When a PCM or UPCM is used as the loop controller, an appropriate referencer needs to be assigned. This could be a pump output, loop flow status, or a binary value that is set once all loop operation, including pumps, boilers and towers are proven.

Assigning a Loop Controller Member

- 1. In the HPLC Members Category field, select Loop Controller.
- 2. In the Type box, select the type of loop controller. This can be a Tracer loop controller, a PCM, UPCM, MP580 or MP581.
- 3. In the Name box, the available devices are shown. Highlight the name of the device you want to use as the loop controller.
- 4. Click the Add button to use this device as the loop controller.
- 5. To select an alternate loop controller follow steps 1–4, then click the Replace button.

Assigning a Water Source Heat Pump Member

Note:

Only SCCs can be assigned to this application.

- 1. In the HPLC Members Category field, highlight Water Source Heat Pump to select it.
- 2. In the Name field highlight the unit you want to add.
- 3. Click the Add button to add the heat pump to the application.

Removing HPLC Members

- 1. From the Current Member List dialog box, highlight the HPLC member that you want to remove.
- 2. Click the Remove button. To remove all members of the HPLC, click the Remove All button.

Setting Security Access

1. From the Heat Pump Loop editor, click the Classes tab to display the Classes screen (see Figure 314).

Figure 314. Heat Pump Loop Control Editor Classes Screen

Status Setup	Classes	
Security Classe	s	
	-	

2. Click the Security Classes button. The Change Security Classes dialog box displays (see Figure 315).

lass	Class Name	Access
1	Class 1	v
2	Class 2	v
3	Class 3	
4	Class 4	
5	Class 5	
6	Class 6	
7	Class 7	
8	Class 8	
9	Class 9	
10	Class 10	
11	Class 11	
12	Class 12	
13	Class 13	
14	Class 14	
15	Class 15	
16	Class 16	

Figure 315. Change Security Classes Dialog Box

- 3. Click the Access field next to each class to grant or deny access to the security class. A check in the field grants access. If unchecked, permission to the security class is denied.
- 4. Click OK to close the Change Security Class dialog box and display the Classes screen.



Chapter 24 Time of Day Scheduling

Time of day scheduling in Tracer Summit enables you to create and modify schedules that control HVAC equipment and lighting. It also gives you the flexibility to create time of day schedule reports from the scheduling screen (see "Creating Time of Day Schedule Reports" on page 366).

Using the scheduling application, you can schedule equipment to start or stop at specific times during the day. You can use optimal start and stop times to turn equipment on as late as possible and turn it off as early as possible, while maintaining the desired comfort level in a defined zone or building.

You modify schedules using the Scheduling screen. A schedule is a set of defined events that applies to an effective period of time for one or more of the following:

- Areas
- UCMs
- Control points
- Set values

A schedule has a normal day defined for each day of the week. A normal day applies unless you create a holiday or an exception. Holidays take precedence over normal days, and exceptions take precedence over holidays and normal days.

You can define more than one set of events in a schedule for a site, and an object can be a member of more than one event in a schedule. However, an object cannot be active during two events simultaneously. For example, if a UCM is a member of one event that starts at 8 a.m. and stops at 5 p.m., it cannot be a member of another event that would require it to start at 7 a.m. and stop at 4 p.m.

The Tracer 100/Tracker Communications package enables you to upload Tracer 100 schedules, edit them, and then download them to Tracer 100 panels. For more information, see "Using Tracer 100 Schedules" on page 364.



Accessing the Scheduling Screen

- 1. Click Schedule on the task bar. The Select TOD dialog box appears.
- 2. Select the schedule you want.
- 3. The Scheduling screen displays (see Figure 316).



Figure 316. Scheduling Screen

Note:

If you need help with time of day scheduling, refer to the Daily Operations tutorial, *Focus on Your System*. (For information about using the tutorial, refer to the *Tracer Summit Daily Operations* guide.

4. Select a month and year.

Tracer Summit displays the schedule for the selected name, month, and year.

Creating a New Daily Schedule



Creating a New Daily Schedule

Refer to "Making Global Changes" on page 203 for information about how to modify a schedule that affects multiple schedules in the Time of Day Schedule application.

Note:

The scheduling application can create new schedules for BCU sites only. You can create new schedules for Tracer 100 sites from the terminal emulation screen and from doing a system expansion on the Tracer 100 panel (see "Deleting a Tracer 100 Schedule from the Workstation" on page 365). After this is done, scan the Tracer 100 panel for the new schedules. For more information about scanning Tracer 100 panels, see "Run Immediate Scan on a Single Site" on page 221.

To create a new daily schedule:

- 1. Open the site to which you want the new schedule to apply.
- 2. Click Schedule on the task bar. The Select TOD dialog box appears.
- 3. Click New. The first Schedule Wizard dialog box displays (see Figure 317).

Schedule Wizard	X
Schedule Name:	
Schedule Start Start Date: 10/12/98	Schedule End No End Date End Date: 12/31/98
	Next >> Cancel Help

Figure 317. First Schedule Wizard Dialog Box

- 4. Type the name of the new schedule in the Schedule Name field.
- 5. Specify the Start Date using the up and down arrows. (The start date defaults to the selected date.)
- 6. Leave the No End Date check box selected if you do *not* want to specify an end date.

To specify an end date, uncheck the box to activate the End Date field. Then, use the up and down arrows to specify the end date.



7. Click Next. The second Schedule Wizard dialog box displays (see Figure 318).

Analog Output Available Members Cooling Coil Valve Heating Coil Valve Inlet Guide Vanes Modulating Valve VAV Cool Setpoint VAV Heat Setpoint CHW Add Deadband CT A Bypass CT B Bypass Chiller Add Time Chiller Subtract Time Lead Chiller Number Rotation Day	Add >> Selected Members	
---	-------------------------	--

Figure 318. Second Schedule Wizard Dialog Box

- 8. Click the Member Types selection arrow to display the list of member types.
- 9. Select the desired member type to display in the Available Members list.
- 10. In the Available Members list, select the members to which you want the schedule to apply.
- 11. Click Add to add the members to the Selected Members list. To add all available members to the Selected Members list, click Add All.
- 12. Click Next. The Schedule Wizard—Select Events Schedule Responds To dialog box displays (see Figure 319 on page 355).



Schedules	Normal	Optimal	Night Economize	Lighting	Set Analog
fan Start/Stop					
3IR Lights					
Chiller A					

Figure 319. Schedule Wizard—Select Events Schedule Responds to Dialog Box

Note:

If a schedule contains a mixture of Normal and Optimal events (such as an Optimal Start and Normal Stop), the members must be set up as Normal and Optimal.

13. For each member in the Schedules column, define the schedule event types by selecting the check boxes under the desired column headings. See Table 8 for an explanation of the direct relationship between schedule member types and event types.

Table 8. Scheduling Member Types

Schedule Member Type	Member Type Events							
	Normal	Optimal	Night Economize	Lighting	Set Analog			
Area*	Yes	Yes	Yes	Yes	No			
Analog Output and Analog Value	No	No	No	No	Yes			
Binary Output and Binary Value	Yes	No	No	No**	No			
CPL	Yes	No	No	No	No			
UCMs	Yes	No	No	No	No			
Notes:								

*See Table 7 on page 303 for area mode/member mode behavior.

**To control a binary output (BOP) as a lighting member, the BOP must first be setup as a member of an area. This area is then added into TOD as a lighting event.





14. Click Next. The Schedule Wizard—Set Default Event Times dialog box displays (see Figure 320).

Selected Event Type	Start Event	Stop Event
Normal	8 :00:00 AM	5 :00:00 PM
Optimal	🔲 8:00:00 AM	5 :00:00 PM
Lighting	🔲 8 :00:00 AM	5:00:00 PM
Events		Chat Time Greenew
Start Time:	1 :00:00 AM	Start Time: 8:00:00 AM
Duration:	120	Value: 72.0

Figure 320. Schedule Wizard-Set Default Event Times Dialog Box

- 15. For Normal, Optimal, and Lighting events, click the desired check boxes. Then, set the Start Event and Stop Event times, using the up and down arrows.
- 16. To schedule a start time and duration for the Night Economize event, click the Schedule Night Economize Events check box. Then, set the start time using the up and down arrows and enter the length of the event time in the Duration field.
- 17. To change the set analog start time, click the Set Analog Selected check box. Then, set the start time using the up and down arrows and enter the setpoint value in the Value field.



18. Click Next. The final Schedule Wizard dialog box displays (see Figure 321).

Schedule Wizard	X
Schedule Effective on Sunday Monday Tuesday Wednesday Thursday Friday Saturday	Select All Select None
KBack	Finish Cancel Help

Figure 321. Final Schedule Wizard Dialog Box

- 19. Click the check box for each day of the week on which you want the schedule to be effective. The Monday, Tuesday, Wednesday, Thursday, and Friday boxes are checked as defaults.
- 20. Click Finish. The Save New Schedule dialog box displays (see Figure 322).

Figure 322. Save New Schedule Dialog Box



- 21. Click the BCU Name selection arrow to display the list of available BCUs.
- 22. Select the BCU to which you want to save the schedule.
- 23. Click OK to display the Scheduling screen and the new schedule.



Adding an Event to a Schedule

When adding events for a Tracer 100 schedule, consider the following:

Night Economize Events

Night economize, also known as purge cycle, events only apply to zone (point type 07) members in the schedule member list. The following conditions are required before the members of a zone economize:

- A night economize event is defined in the Time of Day Schedule application
- The zone is unoccupied
- The night enthalpy switch (if defined) is closed
- The inside space temperature is greater than the economizing setpoint
- The inside space temperature is greater than the night economizer delta temperature (if non-zero)

Duty Cycle Events

Duty cycle events establish when schedule members are allowed to duty cycle. This alone, however, will not duty-cycle the schedule members. You must also define the duty cycle point for each member in the schedule while online with a Tracer 100 panel by means of a terminal emulation session. For zones in the schedule member list, the duty cycle event applies to the members of the zone, not to the zones themselves.

To add an event to a schedule:

- 1. Display the schedule you want to change.
- 2. On the clock grid, right-click the mouse once to display a submenu of events. The pop-up menu in Figure 323 appears for BCU sites. The pop-up menu in Figure 324 on page 359 appears for Tracer 100 sites.

Figure 323. List of Events for BCU Sites

```
Add Normal Events
Add Optimal Events
Add Night Economize Events
Add Lighting Events
Add Set Analog
```

1 2 2 4 5 6 7 8 9 10 11 12 1



Figure 324. List of Events for Tracer 100 Sites



3. Select the event you want to add. Depending on the event you select, a dialog box appears for that event. For example, after you click one of the time bars, a Change Event Times dialog box similar to the one in Figure 325 appears. Depending on the event type that you choose to add, the fields that display in the dialog box vary.

Note:

Because Tracer 100 panels limit events, the Time of Day Schedule application only lets you add up to six events each day in the schedule.



Change Event Time	s X
🔽 Enable Start Ever	j
Event Starts At:	8 :00:00 AM 🚔
Early Limit:	0 × Minutes
🔽 Enable Stop Ever	ıt
Event Ends At:	5:00:00 PM 🚦
Early Limit:	0 K Minutes
ОК	Cancel

- 4. Click the Enable Start Event box.
- 5. In the Event Starts At field, select the time at which the event will start.
- 6. Click the Enable Stop Event box.
- 7. In the Event Ends At field, select the time when the event will end.
- 8. Click OK. The time bar for the new event displays in the clock grid.



Removing an Event from a Schedule

- 1. On the Scheduling screen, display the schedule you want to change.
- 2. On the time bar for the event you want to remove, click the right mouse button once to display a list of tasks (see Figure 326).

Figure 326. Displaying a List of Tasks



3. Select Delete Event. The event is deleted.

Changing a Schedule Name

You can only change names for BCU sites.

To change a BCU site name:

- 1. On the Scheduling screen, display the schedule you want to change.
- 2. From the Edit menu, select Schedule Name. The Change Schedule Name dialog box displays (see Figure 327).

Figure 327. Change Schedule Name Dialog Box

Change Sche	dule Name	×
New Name:	Classrooms Normal	
	OK	Cancel

- 3. Enter the new schedule name in the New Name field.
- 4. Click OK.



Adding a Member to a Schedule

You can only perform this function for BCU sites. You cannot use the scheduling application to add, remove, or insert member offsets in a schedule for Tracer 100 sites.

To add a member to a schedule:

- 1. On the Scheduling screen, display the schedule you want to change.
- 2. In the Schedule Members list box, right-click the mouse to display a pop-up menu (see Figure 328).

Figure 328. Pop-Up Menu



3. Select Add Members. The Add Members to Schedule dialog box displays (see Figure 329).



Member Types: Analog Output	Schedule Members Boiler Start/Stop , M1 Exhaust Fan
Available Members Cooling Coil Valve Heating Coil Valve Inlet Guide Vanes Modulating Valve V0VC Cal Catacity	Add >> M2 Exhaust Fan M3 Exhaust Fan
VAV Loo septimit VAV Heat Setpoint CHW Add Deadband CT A Bypass CT B Bypass CT B Bypass	Add All >>

- 4. Click the Member Types selection arrow to display the list of member types.
- 5. Select the desired member type to display in the Available Members list.



- 6. Select the member(s) you want to add to the schedule from the Available Members list.
- 7. Click Add to add the member(s) to the Selected Members list. To add all available members to the Members to Add list, click Add All.
- 8. Click OK.

Removing a Member from a Schedule

You can only perform this function for BCU sites. You cannot use the scheduling application to add, remove, or insert member offsets in a schedule for Tracer 100 sites.

To remove a member from a schedule:

- 1. On the Scheduling screen, display the schedule you want to change.
- 2. Select the member(s) from the Schedule Members list.
- 3. In the Schedule Members list box, right-click the mouse to display a pop-up menu (see Figure 328).
- 4. Select Remove Members. A dialog box displays warning you that you will permanently remove the member from the schedule.
- 5. Click Yes to remove the member from the schedule.

Setting or Modifying Offsets for Schedule Members

Offsets allow each member of a schedule to start before the defined occupied start time and/or stop after the defined occupied stop time. Offsets are typically used to avoid having all equipment start at the same time.

You can only perform this function for BCU sites. You cannot use the scheduling application to add, remove, or insert member offsets in a schedule for Tracer 100 sites.

To set or modify offsets for schedule members:

- 1. On the Scheduling screen, display the schedule you want to change.
- 2. Select the member you want to offset in the Schedule Members list.
- 3. Right-click the mouse to display a pop-up menu (see Figure 328).
- 4. Select Set Member Offsets. The Set Member Offsets dialog box displays (see Figure 330 on page 363).



Set Member Offsets						
Offsets						
Member Name: SCC						
Start Advance 0 🐳 minutes						
Stop Delay 0 ∓ minutes						
Event Types						
☑ Normal Events						
🗖 Optimal Events						
Night Economize Events						
Lighting Events						
☐ Set Analog Events						
OK Cancel Help						

Figure 330. Set Member Offsets Dialog Box

- 5. Set or modify the Start Advance time and Stop Delay time using the up and down arrows.
- 6. Click OK.

Changing a Schedule's Effective Period

You can only use this function for BCU sites.

To change the effective period of a schedule:

- 1. On the Scheduling screen, display the schedule you want to change.
- 2. From the Edit menu, select Effective Period. The Effective Period dialog box displays (see Figure 331).

Figure 331. Effective Period Dialog Box

Effective Period	×
- Schedule Start	
Start Date: 10/12/98	
Schedule End	
🔽 No End Date	
End Date: 12/31/98	
Cancel	

- 3. To change the Start Date, use the up and down arrows.
- To change the end date, use the up and down arrows.
 To specify no end date, click the No End Date check box.
- 5. Click OK.



Save Events as a Normal Schedule to Weekdays, Weekends, and Holidays

Use this procedure to save modified schedules to specific days of the week (Sunday through Saturday) and/or save them as holidays. Before performing the following steps, do the procedure described in one of the following:

- "Adding an Event to a Schedule" on page 358
- "Changing a Schedule's Effective Period" on page 363
- "Removing an Event from a Schedule" on page 360

To save events as a normal schedule:

- 1. After you modify an event in the schedule, click Save.
- 2. The Save Normal Schedule dialog box appears.
- 3. Left-click the mouse on the days to which you want to save the schedule. Options include:
 - BCU Range—Sunday through Saturday
 - Tracer 100 Range—Sunday through Saturday and all holiday dates
- 4. Click OK to save the changes for the selected days.

Using Tracer 100 Schedules

With the Tracer 100/Tracker Communications package you can access schedules for Tracer 100 panels online through the terminal emulation screen or use Tracer Summit's Time of Day application to modify them.

The first time that you create a Tracer 100 site and connect to the panel, the Tracer Summit software scans the panel for existing schedules. The software uploads these schedules to your workstation. After the schedules are uploaded to your workstation, use the Time of Day application to modify Tracer 100 schedules online or offline as described in "Adding an Event to a Schedule" on page 358, and "Removing an Event from a Schedule" on page 360.

If you modify Tracer 100 schedules offline in Tracer Summit, then the next time that you connect to the site, your changes are downloaded to the panel(s). When your workstation is connected to a Tracer 100 panel, any schedule changes go immediately to the panel.

If you have the Building Management or Enterprise Management package, use Task Manager to schedule when your off-line changes are downloaded to the Tracer 100 panel. For more information, see Chapter 15, "Using the Task Manager."



Accessing Tracer 100 Schedules

- 1. Log on and/or connect to the Tracer 100 site.
- 2. Click Schedule on the task bar. The Select TOD dialog box appears.
- 3. Select the desired schedule.
- 4. The Scheduling screen displays (see Figure 316 on page 352).

Globally Changing Tracer 100 Sites Schedules

• For Tracer 100 schedules, repeat the procedures in "Applying Global Changes to a Single Site" on page 204 and "Applying Global Changes to Multiple Sites" on page 205.

Deleting a Tracer 100 Schedule from the Workstation

You cannot remove a schedule from the Tracer 100 panel without clearing the panel's memory, also known as doing a system expansion. You can remove the schedule from your workstation by deleting the schedule object (see "Deleting Objects" on page 652). However, because the Tracer 100 panel always retains schedules in its memory, during the next scan the schedule that you deleted in the workstation will upload again from the panel.



Creating Time of Day Schedule Reports

The schedule report provides information about time of day scheduling activities over a period of time. You select what information goes into the report (holidays, normal events, exceptions), the length of the reporting period (one day, one week, one month, etc.), and how the schedules are sorted in the report. You can create the report to include as many schedules as you desire or just view the activities of one schedule over a reporting period.

Note:

This report is also available in the standard site reports. For more information about standard site reports see "Designing Reports" on page 539.

Figure 332 shows an example of a time of day schedule report containing information for multiple schedules. The report is sorted by start date and has a duration of one year.

Sch edule Report										
Start Date	End Date	E vent	MON	TUE	WED	THU	FRI	SAT	SUN	Туре
8/18/2003	None							*	*	
		Start	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM			Normal
8/19/2003	None							*	*	
		Start Stop	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM			Optim al
		Start Duration	1:00 AM 120 m in.	1:00 AM 120 min.	1:00 AM 120 min.	1:00 AM 120 min.	1:00 AM 120 min.			Night Econ
		Start Stop	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM			Lighting
		Start	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM			Set Analog
9/19/2003	None							*	*	
		Start Stop	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM	8:00 AM 5:00 PM			Normal
	Start 8/18/2003 8/19/2003 9/19/2003	Start Date End Date 8/18/2003 None 8/19/2003 None 9/19/2003 None	Start Date End Date Event 8/18/2003 None Start 8/19/2003 None Start 8/19/2003 None Start 8/19/2003 Start Start 9/19/2003 None Start 9/19/2003 None Start	Start Date End Event Event MON 8/18/2003 None -	Start End Date Event MON TUE 8/18/2003 None Start 8:00 AM 8:00 AM 8/19/2003 None Start 8:00 AM 8:00 AM 9/19/2004 None Start 8:00 AM 8:00 AM 9/19/2003 None Start 8:00 AM 8:00 AM 9/19/2003 None Start 8:00 AM 8:00 AM	Start Date End Event MON TUE WED 8/18/2003 None Start 8:00 AM 8:00 AM	Start Data Fad Event MON TUE WED THU 8/18/2003 None Start 8/00 AM 8/00 AM	Start End Event MON TUE WED THU FRI 8/18/2003 None Stati 8:00 AM 8:00 AM <td>Start End Mon TUE WED THU FRI Start Start 8/18/2003 None Start 8:00 AM 8:00</td> <td>Start Date Event MON TUE WED THU FRI SAT SUM 8/18/2003 None Start 8:00 AM 8:</td>	Start End Mon TUE WED THU FRI Start Start 8/18/2003 None Start 8:00 AM 8:00	Start Date Event MON TUE WED THU FRI SAT SUM 8/18/2003 None Start 8:00 AM 8:

Figure 332. Time of Day Schedule Report



To create a time of day schedule report:

- 1. From the Scheduling screen click the Report button. The Choose Sorting Criteria and Report Period dialog box displays (Figure 333).
- 2. Select the option that you want the schedules sorted by.
- 3. Select the length of the reporting period.
- 4. Click the Next button to display the Select Schedules dialog box (see Figure 334).

Figure 333. Sorting Criteria and Report Period Dialog Box

Choose Sorting Criteria and Report Peri Schedule Sort Criteria Sort the schedules in the report by: Name Start Date End Date	Neport Period Report Start Date: 8/26/2003 Length of Report Period: Year Month Week Day	
<	(Back Next > Cancel	Help

Figure 334. Select Schedules Dialog Box

Select Schedules to include in the Rep	lect Schedules to include in the Report				
Available Schedules for Selected Peri	od:	Selected Schedules:			
Administration Building schedule2 West Building	Add >>				
	Add All >>				
	<< Remove				
	<< Remove All				
☑ Include Normal days in the report					
✓ Include Exception days in the report					
Include Holidays in the report					
_	< Back Finis	sh Cancel	Help		



- 5. From the Available Schedules for Selected Period list, select the schedules that you want to include in your report.
- 6. Click the Add button to add those schedules to the Selected Schedules list.

Note:

To remove a schedule from the list click the Remove button.

7. Click the Finish button to create the time of day schedule report.

Adding event information to the report

Event information that you can add to the report is selected by default (see Figure 335). If you don't want to include an event on the report, click on the checkbox to deselect it.

Figure 335. Scheduling information

Include Normal days in the report
 Include Exception days in the report
 Include Holidays in the report



Chapter 25 Custom Programming Language

Tracer Summit's Custom Programming Language (CPL) allows you to create custom programs to perform functions and calculations that cannot be done by other applications in Tracer Summit.

The Tracer Summit PC Workstation is used to create CPL programs in the Tracer Summit CPL editor. The process of creating a CPL program begins with a CPL text file. The text file contains program logic statements and comments. This chapter describes how to create, save, and compile a CPL text file. Once this process is complete, the CPL program is completed. This chapter also describes how the CPL program becomes an object that is sent to the system database and stored in a specific BCU.

Note:

For detailed information on specific CPL statements, functions, enumerations and so on, refer to Tracer Summit online help.

Tracer Summit includes a library of sample programs located in the folder C:\Program Files\Tracer Summit\cpl\library. You can also locate the sample programs in the Tracer Summit electronic library on the Tracer Summit CD (for more information, see Chapter 5, "Utilities").

There are four basic steps used to successfully create and test a CPL program object:

- 1. **Create or Edit the CPL text file.** CPL text files are created and edited using the CPL editor and saved to the PC Workstation database.
- 2. **Compile the CPL text file.** The compiler checks for any syntax errors. After the syntax errors are corrected, you can compile the text file again. This process is repeated until it successfully compiles, at which point it is an executable CPL program.
- 3. **Create the CPL Object in the Database.** A successfully compiled CPL program is used either to create a new CPL object or replace an existing CPL object in the system database. During this step, a run frequency (if any) and the BCU where this program executes are assigned. The newly created CPL object is automatically sent to the BCU when the workstation is online.
- 4. **Test the CPL Program.** Once the CPL object is sent to the BCU, use the CPL editor to step through the program and test its logic.



The process of creating a CPL program may require repeated editing if you have errors from the compile and/or test step. Once a step is repeated, you must repeat each successive step to complete the process of creating a successful CPL program. The steps to create a CPL program are explained in greater detail in the following sections.

Opening and Closing the CPL Editor

You can open the CPL editor with a blank file or with an existing CPL file displayed.

To open the CPL editor:

- 1. From the Setup menu, select Custom Programming. The Open dialog box displays.
- 2. Make a selection:
 - To select a CPL file to work with, select the file's location and name, then click Open.
 - To display a blank text file, click Cancel.

The CPL editor displays.

To close the CPL editor:

• At the CPL editor main menu, click File. Then click Close CPL editor. The Tracer Summit main window displays.



Creating or Editing a CPL Text File

The structure of a CPL text file is similar to a C or BASIC program file. You create this CPL text file using the Tracer Summit CPL editor because it contains features specific to CPL. You can also look in the library directory (C:\Program Files\Tracer Summit\cpl\library) for templates that you can adapt to suit your needs.

There are two ways to create a new CPL text file:

- Use a template (recommended). Follow the method in the section titled "Creating a CPL Text File From a Template" on page 371.
- Use a blank text window. Follow the method in the section titled "Creating a CPL Text File from a Blank Text Window" on page 374.

Creating a CPL Text File From a Template

The general steps required to edit a CPL text file in the CPL editor are as follows.

- 1. From the CPL editor File menu, select Open CPL Text File. The Open dialog box displays.
- 2. Open the Library directory (C:\Program Files\Tracer Summit\cpl\library). See Figure 336.

Figure 336. Open Dialog Box (Library Directory)

Open			? ×
Look jn:	🔄 library	• E	
Nir_calc.cpl	🔊 Horiz_av.cpl	Rt_sched.cpl	🔊 Tov3area.
🔊 Ch_avail.cp	l 🔊 Hw_reset.cpl	🔊 Ser_stpt.cpl	🔊 Tov4area.
🔊 Dem_calc.c	pl 🔊 Oa-enab1.cpl	🔊 Sysreset.cpl	🔊 Trs_cnts.c
🔊 Enthalsi.cpl	🔊 Oa-enab2.cpl	🔊 Tec_av.cpl	🔊 Vav_czr3.)
🔊 Eqvent2.cpl	🔊 Occ_unoc.cpl	🔊 Tov1area.cpl	🔊 Vav_tmp3.
Header.cpl	🔊 Pump_rot.cpl	🔊 Tov2area.cpl	🔊 Vav_vnt3.
•			F
File <u>n</u> ame:	Header.cpl		<u>O</u> pen
Files of <u>type</u> :	CPL Files (*.cpl)	▼	Cancel

- 3. Select the desired CPL file. For a new routine, you can use the Header.cpl file, which has the recommended program structure.
- 4. Click Open to load the file into the CPL editor (see Figure 337 on page 372).



Tracer Summit · [Area_1_TOV*]	am Test Go Satur Too	k Window Help			
PROGRAM Area_1_TOV			<u> </u>		
DEFINT On=1, Up=1, i, Unoccupied TOV_Flag, Override_Time, Oc	l, Remaining_Time, cupied=2, Cancel_Flag	j, Group_Size=4			
DEFOBJ VAV[Group_Size], Area					
III This routine monitors the timed override request from all the III vav boxes in an area and controls the area's {Present Value} to III occupied for a user-edited amout of time. It also monitors all the III timed override cancel requests and releases the area from TOV if III timere is a cancel request					
III Routine Execution: This program is executed once a minute.					
/// Routine Text File: TOV1AREA.CPL Override Time = (Override Time 1) (Present Value)					
Area = {The One and Only Area}					
VAV[1] = {VariTrane UCM II/II/IV-1- VAV[2] = {VariTrane UCM II/III/IV-1-	80} 84\				
VAV[3] = {VariTrane UCM II/III/IV-3-	68}				
VAV[4] = {VariTrane UCM II/II/IV-3-	·72} -3-761				
Remaining_Time = Local.{Saved V	/alue}[1]				
TOV_Flag = Local.{Saved Value}[2]]				
IF (VAV[i].{Communication State}	= Up)		-1		
Line 13 of 59	User: TRACER	Site: Zap-IT			

Figure 337. Header File in the CPL Editor

- 5. Add the program name and text to the comment lines to define your program (see the section "Adding Comments" on page 374 for more details).
- 6. If applicable, use the predefined place in the Header.cpl file to define variables for the new program.
- Using the Edit menu items for proper CPL syntax, insert the control statements and calculations that the program will use (see Figure 338 on page 373).




Figure 338. CPL Editor Edit Menu

<u>E</u> dit ∐iew	<u>P</u> rogram	<u>T</u> est <u>G</u> o
Undo		Ctrl+Z
Cu <u>t</u>		Ctrl+X
		Ctrl+C
Paste		Ctrl+V
<u>D</u> elete		Del
Add <u>S</u> tal Add F <u>u</u> n Add <u>O</u> bj Add Obj Add Enu	tement iction ect &Property im Bool	
<u>F</u> ind <u>R</u> eplace Select <u>a</u> <u>G</u> o To L	 II ine	

The Edit menu contains the following options:

- Add Statement (see "Adding Statements" on page 374)
- Add Function (see "Adding Functions" on page 375)
- Add Object (see "Assigning Objects and Properties" on page 376)
- Add Obj&Property (see "Adding an Object and Property Reference" on page 378)
- Add Enum Bool (see "Assigning Enumerations" on page 379)
- 8. Leave the word END on the last line of the program to let Tracer Summit know that the program is done.
- 9. From the CPL editor File menu, select Save CPL Text File As.
- 10. At the Save As dialog box, select the CPL\custom directory (do not save in the CPL\library directory).
- 11. Type a new name for the program in the File Name field of the Save As dialog box.

Note:

If special startup sequences are required after a power failure, naming a CPL program object "STARTUP_1", "STARTUP_2", etc., causes the program(s) to execute before all other applications execute after power is restored on the BCU.

12. Click OK to save your CPL file to the PC Workstation. Save the file frequently during editing to avoid losing your work.



Creating a CPL Text File from a Blank Text Window

You can create a new CPL text file from a blank text window by inputting all the elements of a CPL program manually. However, it is recommended that you follow the method outlined in the section "Creating a CPL Text File From a Template" on page 371 to make the process of creating a new CPL text file easier.

If you are going to create the CPL text file from a blank text window, you can review the CPL examples included with Tracer Summit for guidance on recommended format. The library of sample programs is located in the folder C:\Program Files\Tracer Summit\cpl\library or the Tracer Summit electronic library (for more information, see Chapter 5, "Utilities").

You can display a blank text window for the creation of a new CPL text file in one of two ways:

- When you first enter the CPL editor (by selecting Setup, then Custom Programming, at the Tracer Summit main menu), click Cancel at the Open dialog box.
- At the CPL editor, from the File menu select New CPL Text File.

Once you have a blank text window in the CPL editor, create the program using the proper syntax end program structure. For more information, see "Creating a CPL Text File From a Template" on page 371.

Adding Comments

You must manually add comments to your CPL text file to explain the program steps. Comments will help you and others understand and debug the program later. There are two types of comments you can add:

• Comment lines beginning with /// use memory in the BCU.

Type /// at the beginning of comment lines that you want to save to the BCU. These comments remain in the program after it is compiled and sent to the BCU. You see the comments when you open the CPL object.

• Comment lines beginning with // do not use BCU memory.

Type // at the beginning of comments lines that you want stored only in the CPL text file. This saves space in the BCU since these comments are removed when the program is created as an object.

Adding Statements

- 1. Position the cursor in the CPL text file where you want to insert the statement.
- 2. From the Edit menu, select Add Statement. The Add Statement dialog box displays (see Figure 339 on page 375).



Figure 339. Add Statement Dialog Box

Add Statement		_ 🗆 ×
CALL CONTROL DO UNTIL DO WHILE DEFINT DEFLNG DEFELT DEFDBL DEFOBJ ERROR EXIT DO EXIT FUNCTION EXIT FUNCTION EXIT REPEAT EXIT SUB FOR-NEXT		
ОК	Cancel	Help

- 3. Select the statement you want to insert in your file.
- 4. Click OK.
- 5. Use the proper syntax to complete the statement you have chosen.

Adding Functions

- 1. Put your cursor in the CPL text file where you want to insert the statement.
- 2. From the Edit menu, select Add Function. The Add Function dialog box displays (see Figure 340).

Figure 340. Add Function Dialog Box

A	dd Function		
	ABS		A
	AVG		
	CLNG		
	DAY		
	DATE		
	DATEVALUE		
	log		
	MAX		
	MIN		
	MINUTE		
	MONTH		
	NOW		•
		Cancel	Help

- 3. Click on the function you want to add to your file.
- 4. Click OK.
- 5. Use the proper syntax to complete the function you have chosen.



Assigning Objects and Properties

As a CPL programmer, you have access to a major subset of the objects defined in the BCU. You can directly enter an object name or property name. To avoid syntax errors use the CPL editor to reference objects and properties.

Note:

The compiler will ignore spaces, tabs, and blank lines, but you must avoid carriage returns or word wrap (where the editor puts a dash mark to finish the word on the next line) when denoting an object name or property name in your file. The names of objects and properties used in the program must exactly match the names in the database.

Adding an Object Reference

To assist you in specifying an object in your CPL program, the CPL editor has an object selection dialog box that you can access from the CPL editor.

To add an object reference:

- 1. Position the cursor in the CPL text file where you want to insert the statement.
- 2. From the Edit menu, select Add Object. The Select Object dialog box displays (see Figure 341).

Figure 341. Select Object Dialog Box

Select Ob	ject	X
Туре:	Absorption Chiller (UCP2)	[
Name:	Chiller B	
	OK Cancel <u>H</u> elp	

- 3. Select the object type and object name you want to insert.
- 4. Click OK to insert the object reference into your CPL text file.

Indirectly Referencing an Object

CPL provides an object pointer defined with a variable to reference an object indirectly. These variables are useful for being passed to procedures that process an object. When not pointing to an object, object pointers have a null value.



You define variables to use as a user-defined shorthand name for an object. Once a variable has been defined, you can use it throughout the program to make the program more readable.

Note:

Variable names are case sensitive. For example, the compiler sees the names *OAT* and *oat* as different variables.

To indirectly reference an object:

- 1. Position the cursor in the Define Variables section of your CPL text file.
- 2. From the Edit menu, select Add Statement. The Add Statement dialog box displays (see Figure 342).

Figure 342. Add Statement-DEFOBJ

Add	Statement		_ 🗆 ×
	LL NTROL) UNTIL) WHILE FINT FLNG FFLT FDBL		
	ROR IT DO IT FOR IT FUNCTION IT REPEAT IT SUB R-NEXT	l	T
	ОК	Cancel	Help

- 3. Select the DEFOBJ statement.
- 4. Click OK to insert the DEFOBJ statement into the CPL text file.

Using the DEFOBJ statement adds two lines of code to the program: the statement DEFOBJ {object name} to the first line of the program and the object name at the cursor location.

5. In the CPL text file, type in a name for the variable defining the object pointer. For example:

DEFOBJ RTU1 RTU1 = {FINANCE DEPT TCM}

When defining an object, do not add a property reference to the variable:

RTU1 = {FINANCE DEPT TCM}.{PRESENT VALUE}



Indirectly Referencing an Object and Property

CPL provides an object and property pointer defined with a variable to reference an object and property indirectly. These variables are useful for being passed to procedures that process an object and property.

There are four types of variables available:

- DEFINT defines integers
- DEFLNG defines long integers
- DEFFLT defines single floating point values
- DEFDBL defines double floating point values

Note:

Variable names are case sensitive. For example, the compiler sees the names *OAT* and *oat* as different variables.

To indirectly reference an object and property:

- 1. Position the cursor in the Define Variables section of your CPL text file.
- 2. From the Edit menu, select Add Statement. The Add Statement dialog box displays.
- 3. Select the DEFINT, DEFLNG, DEFFLT, or DEFDBL statement and click OK. The statement is inserted.
- 4. In the CPL text file, type in a name for the variable defining the object and property pointer. For example:

DEFFLT ZONETEMP ZONETEMP = {BCU#1 VAV-01-065}.{ZONE TEMPERATURE}

Adding an Object and Property Reference

To assist you in specifying an object and property in your CPL program, the CPL editor has an object and property selection dialog box that you can access from the CPL editor.

To add an object and property reference:

- 1. Position the cursor in the CPL text file where you want to insert the statement.
- 2. From the Edit menu, select Add Obj&Property. The Select Property Reference dialog box displays (see Figure 343).



Select Property	y Reference	X
<u>Т</u> уре:	Absorption Chiller (UCP2)	
<u>N</u> ame:	Chiller B	
Property:	Absorber Water Flow Rate	
	OK Cancel Help	

Figure 343. Select Property Reference Dialog Box

- 3. Select the object type, name, and property you want to insert.
- 4. Click OK to insert the property reference into your CPL text file.

Assigning Enumerations

Tracer Summit treats all binary and multi-state properties as integers. On is usually a 1 and Off is 0. These associations between words and integers are called *enumerations*. It is critical that the enumeration, once defined, appear the same throughout the entire program (identical spelling and capitalization).

To assign enumerations:

- 1. From the Edit menu, select Add Enum Bool. The Select Property Reference dialog box displays.
- 2. Select the desired property from the list.
- 3. Click OK. The Enumeration/Boolean dialog box displays (see Figure 344).

Figure 344. Add Enumeration Dialog Box

A	dd Enumeration			_	X
A	dd Enumeration Optimal Start Occupied Optimal Stop Demand Limit Duty Cycle Priority Shutdown Night Economize Night Heat Cool				
			_1		
	OK	 Cancel		 Help	



4. Select the desired enumeration.

The enumeration is automatically defined as an integer with the proper syntax at the top of the CPL program. In this location, the resulting DEFINT statement is a global variable. It can be moved to another place in the program if desired.

5. Click OK.

Defining an Enumeration for Priority Shutdown

Say, for example, that you are writing a CPL program in which the Present Value of a PCM (attached to AHU1) is controlled to priority shutdown. You want to define an enumeration for priority shutdown. To do this, you must perform the following steps (see "Example: Before Enumerated Booleans Program" on page 380 and "Example: After Enumerated Booleans Program" on page 381 to see the effect of these steps).

To define an enumeration for priority shutdown:

- 1. Position the cursor at the location in the CPL program where the enumeration is to occur (for instance, at the location in the control statement where the Present Value of the PCM is controlled).
- 2. From the Edit menu, select Add Enum Bool. The Select Property Reference dialog box displays.
- 3. Select the PCM object type, AHU1 object name, and PRESENT VALUE object property. Then click OK. The Enumeration/Boolean dialog box displays with the selectable enumerations listed.
- 4. Choose Priority Shutdown from the available list and click OK.
- 5. The program adds the words "Priority_Shutdown" where the cursor was positioned.

The global variable is added to the top of the program where it automatically defines Priority_Shutdown as an integer and sets it equal to 6 (6 is the integer recognized internally by the system as Priority_Shutdown for the Present Value of the AHU1 PCM).

Example of Assigning Enumerated Booleans

The following two examples show the effect of assigning enumerated booleans to a sample program.

Example: Before Enumerated Booleans Program

This is an example of a CPL text file before an enumeration is assigned.

Program AHU1_SHUTDOWN // Written: December 15, 1992 by Ryan Smith // Modifications: // None // Properties modified: // {AHU1 PCM}.{Present Value} /// This program is executed by Binary Input AHU1 ALARM; /// therefore, the frequency should be set at 0 seconds. /// This program turns the AHU Off anytime the binary input /// AHU1 ALARM is turned On.

Creating or Editing a CPL Text File



/// This CPL object uses the text file named AHU1SD.CPL
Defint
On = 1, // Define enumerations
Off = 0
If ({AHU1 ALARM}.{Present Value} = On) Then
// If alarm switch is turned On
Control ({AHU1 PCM}, {Present Value}, 6, 2, SET)
// Turn the AHU Off
Else
// If alarm switch is turned Off
Control ({AHU1 PCM}, {Present Value}, 6, 2, RELEASE)
// Release the AHU to normal control
End If
End

Example: After Enumerated Booleans Program

This is the same CPL text file after the CPL editor assigns the enumeration (the changes are in boldface type).

Defint Priority_Shutdown = 6

Program AHU1_SHUTDOWN // Written: December 15, 1992 by Ryan Smith // Modifications: // None // // Properties modified: //{AHU1 PCM}.{Present Value} /// This program is executed by Binary Input AHU1 ALARM; /// therefore, the frequency should be set at 0 seconds. /// This program turns the AHU Off anytime the binary input /// AHU1 ALARM is turned On. /// This CPL object uses the text file named AHU1SD.CPL Defint On = 1, // Define enumerations Off = 0IF ({AHU1 ALARM}.{Present Value} = On) Then // If alarm switch is turned On Control ({AHU1 PCM}, {Present Value}, Priority_Shutdown, 2, SET) // Turn the AHU Off Else // If alarm switch is turned Off Control ({AHU1 PCM}, {Present Value}, Priority_Shutdown, 2, RELEASE) // Release the AHU to normal control End If End



Using Arrays

Tracer Summit CPL allows arrays of objects and/or properties to be created to reduce the number of CPL statements needed for a CPL program. Arrays also make it easier to edit a CPL program once it has been created by arranging objects and properties in a specific order. Arrays are typically used in CPL programs where repetitive calculations are performed (such as programs that use FOR...NEXT statements).

The syntax for defining an array that points to objects and their properties is:

Defint BIP[6] BIP[1]={object A}.{property} BIP[2]={object B}.{property} BIP[3]={object C}.{property} BIP[4]={object D}.{property} BIP[5]={object E}.{property} BIP[6]={object F}.{property}

The syntax for defining an array that points to objects is:

Defobj BOP[6] BOP[1]={object A} BOP[2]={object B} BOP[3]={object C} BOP[4]={object D} BOP[5]={object E} BOP[6]={object F}

Example Array Program

The following example is a program that looks at the status of binary inputs (set up in an array), goes through this array, and matches a binary output to the binary input. The binary output might be directed to a TCM binary output that controls a lighting relay somewhere else in the facility.

PROGRAM Motion_Status_Lights // Written 11/20/92, by Seymour Anderson // // Properties modified: (BOPs) // {Area1 Status Light}.{Present Value} // {Area2 Status Light}.{Present Value} // {Area3 Status Light}.{Present Value} // {Area4 Status Light}.{Present Value} // {Area5 Status Light}.{Present Value} // {Area6 Status Light}.{Present Value} // // Properties read: (BIPs) // {Area1 Motion}.{Present Value} // {Area2 Motion}.{Present Value} // {Area3 Motion}.{Present Value} // {Area4 Motion}.{Present Value} // {Area5 Motion}.{Present Value} // {Area6 Motion}.{Present Value} /// This program monitors the status of several binary inputs /// throughout the building and directly controls matching binary /// outputs connected to the status light panel in the security station.

Creating or Editing a CPL Text File



/// This program is executed anytime a binary input changes state. /// This CPL object uses the text file named AREASTAT.CPL

DEFINT

Off = 0, // Enumeration for Off

On = 1, // Enumeration for On

NUMB = 6, // Define number of binary inputs and outputs BIPS[NUMB], // Define array for binary inputs

i // Define index for FOR-NEXT statement

DEFOBJ

BOPS[NUMB]// Define array of binary outputs that will // match the binary inputs

// Define the array of binary inputs BIPS[1] = {Area1 Motion}.{Present Value} BIPS[2] = {Area2 Motion}.{Present Value} BIPS[3] = {Area3 Motion}.{Present Value} BIPS[4] = {Area4 Motion}.{Present Value} BIPS[5] = {Area5 Motion}.{Present Value}

// Define the array of binary outputs BOPS[1] = {Area1 Status Light} BOPS[2] = {Area2 Status Light} BOPS[3] = {Area3 Status Light} BOPS[4] = {Area4 Status Light} BOPS[5] = {Area5 Status Light} BOPS[6] = {Area6 Status Light}

For i =1 to NUMB step 1 If (BIPS[i] = On) Then // Turn the light BOP ON CONTROL(BOPS[i], {Present Value}, On, 5, SET) Else // Turn the light BOP OFF CONTROL(BOPS[i], {Present Value}, Off, 5, SET)

End If Next End

Using Saved Values

Each CPL program has 16 properties called saved values. Saved values can store variables in memory between CPL executions, share CPL variables with other CPL programs or applications within the Tracer Summit system, or display on a graphic.

Typically you use a saved value when you want to save a calculation from one execution to the next (such as a timer or counter). Saved values can be either local (defined within the current program) or referenced from another CPL program object.

CPL variables are initialized to zero and are not saved between CPL executions. Therefore, CPL variables must be assigned a value at the start of





the program or otherwise a new value must be calculated each time the CPL program runs.

An analog or binary input can be set up to reference a CPL saved value and alarm if it exceeds the alarm limits (refer to Chapter 17, "Creating Input/Output Objects", for more information on setting up analog inputs).

To read or write a local saved value in your program:

- 1. Position the cursor where you want the saved value to reside.
- 2. From the Edit menu, select Add Statement.
- 3. Select LOCAL.{SAVED VALUE}[]
- Click OK to insert the following line into your program: Local.{Saved Value}[]
- 5. Add a number within the square bracket to indicate the array number of the saved value (1-16).

To read or write a saved value from another CPL program:

- 1. Position the cursor where you want the saved value to reside.
- 2. From the Edit menu, select Add Obj&Property. The Select Property Reference dialog box displays.
- 3. Select the CPL program object from the Type list.
- 4. Select the CPL program name from the Name list.
- 5. Select the Saved Value [#] you want to reference from the property list (see Figure 345).

Figure 345. Select Property Reference Dialog Box-Saved Value

Select Property	Reference
<u>T</u> ype:	CPL Program
<u>N</u> ame:	Chiller_Control
Property:	Context Size
	Run Program Flag
	Caved Value[U1]
	Saved Value[02]
	Saved Value[03]
	Saved Value[05]
	Saved Value[06]
	Saved Value(07)
	Saved Value[08]
	Saved Value[09]
	Saved Value[10]

6. Click OK. The CPL editor will insert the statement. For example: {Chiller_Control}.{Saved Value}[7]





Saved Value Program Example

In the following example, a timing function is performed, based on a local saved value.

Program Exhaust Fan1 // Written 3/22/97 by Eugene Jones // Properties modified: // {Exhaust Fan1}.{Present Value} // Local.{Saved Value}[1] // Properties read: //{Warehouse Temperature}.{Present Value} //{Warehouse Exhaust Fan Setpoint}.{Present Value} /// This program controls the exhaust fan for the warehouse on /// anytime the space temperature exceeds setpoint for 10 minutes. /// This program is executed every minute to keep timers in sync. /// This CPL object uses the text file named EXHAUST1.CPL Defint Off = 0,//Enumeration for Off On = 1,//Enumeration for On Timer_1 // If space temperature is 1 F above setpoint, start 10 minute timer Timer_1 = Local.{Saved Value}[1] lf ({Warehouse Temperature}.{Present Value} > ({Warehouse Exhaust Fan Setpoint}.{Present Value} +1)) Then Timer_1 = Timer_1 + 1 Else $Timer_1 = 0$ End If // Control the exhaust fan On or Off If $(Timer_1 > 10)$ Then Control({Exhaust Fan1}, {Present Value}, On, 5, SET) Else Control({Exhaust Fan1}, {Present Value}, Off, 5, SET) End If // Store Timer value for the next execution Local.{Saved Value}[1] = Timer_1 End



Compiling a CPL Text File

Once the text file for the CPL program is created and saved as a CPL file, your next step is to compile the program. The CPL editor analyzes the currently loaded CPL text file for syntax errors and valid object and property names. Compiling the text file also structures the information into a CPL object format so that it can be sent to the Tracer Summit database.

To compile a CPL text file:

- 1. In the CPL editor, open the CPL text file you would like to compile.
- 2. From the Program menu, select Compile.

If there are syntax errors or errors in object or property names, the Compile Report dialog box identifies each error, the type of error and the line in the program where the compiler finds an error (see Figure 346).

Figure 346. Compiler Report

Compiler Report		_ 🗆 ×
Total Errors - 2 Total Warnings - 0 Syntax error. Line 12; '///' Line: 12; No PROGRAM statement fo	und	
Errors Found	Close	Help

3. Double click on the line listed in the Compile Report dialog box to go to that line and fix the errors, or use the Go To Line command on the Edit menu.

Depending on how the text file was edited, the line given as the location of the syntax error may actually be the line after the location where the error occurred. Therefore, look at the line indicated and the lines before it when looking for syntax errors.

- 4. After you make your corrections, save the file.
- 5. Run the compile function again. Repeat this cycle (steps 2 4) until the Compile Report dialog box displays "Successful Compile," indicating that there are no errors (see Figure 347 on page 387).



Compiler Report	
Total Errors - 0 Total Warnings - 0 Program Size - 82 Bytes	
Succesful Compile	Close Help

Figure 347. Compiler Report-Successful Compile

Note:

In addition to errors, this dialog box also displays warnings. Programs can successfully compile when warnings are generated. They fail if errors are generated.

- 6. After compiling successfully, click Close.
- 7. Save the CPL text file again. It is important to save the file after a successful compile.

Creating a CPL Object in the Database

In this section, you will see how to use a successfully compiled CPL text file to create a CPL object in the Tracer Summit database. The objective is to send the compiled CPL program to be stored as an object in the selected BCU. After the program is stored at the BCU, the BCU software schedules the CPL program to execute at a selected frequency and performs the program logic during each execution.

During this step, you will be selecting:

- The CPL object name
- The security classes
- The CPL program execution frequency (if any)
- The BCU where the CPL object will be stored

You can either create a new CPL object in the database or overwrite an existing CPL object. To overwrite an existing CPL object see "Replacing an Existing CPL Object in the Database" on page 389.





Creating a New CPL Object in the Database

When you have successfully compiled CPL text files saved on the PC Workstation, the Create and Replace items on the Program menu are available to allow you to create a CPL object in the Tracer Summit database.

To create a new CPL object in the database:

1. Once you have successfully compiled the CPL text file, from the Program menu select Create CPL Object. The CPL Program Creation editor dialog box displays (see Figure 348).

Figure 348. CPL Program Creation Editor

CPL Program Creation Editor
Program Name
Air_Properties_Calculation
BCU
Administration BCU
Run Frequency
0 📩 Weeks
0 Days
0 Hours
0 Minutes
0 Seconds
Create Cancel Security <u>C</u> lasses Help

The default name displays in the Program Name field. This is the name from the program statement of the CPL text file. Do *not* change the name.

- 2. From the BCU drop-down list, select the BCU where the CPL program object will be stored. Store the CPL object in the same BCU that most of the objects and properties referenced in the CPL program reside.
- 3. Define the frequency with which the CPL program runs. To set this frequency click the up/down arrows on the right side of each box. It is recommended that CPL programs run no faster than once every 30 seconds. Normally, programs run every minute, every hour, every day, or are event-driven, based on the functions performed in the CPL program.
- 4. To assign security classes click Security Classes. (For more information on assigning security classes, refer to Chapter 9, "Setting Up Security—Tracer Summit System.")



5. On the CPL Program Creation editor dialog box, click Create to create the CPL object and return to the CPL editor.

A Status dialog box displays stating whether sending the CPL object to the BCU was successful. If the PC Workstation is online with the BCU, a "Successful Operation Online" message displays. If the PC Workstation is offline, the CPL editor sends the CPL object to the PC Workstation database, and a "Successful Operation Offline" message displays. When the PC Workstation goes online, it sends the CPL object to the selected BCU.

Replacing an Existing CPL Object in the Database

When you have successfully compiled CPL files saved on the PC workstation, the Create and Replace items on the Program menu allow you to replace a CPL object in the Tracer Summit database.

To replace an existing CPL object in the database:

1. Once you have successfully compiled the CPL text file, from the Program menu select Replace CPL Object. The Select CPL Program dialog box displays (see Figure 349).

Figure 349. Select CPL Program Dialog Box

Select CPL Program	×
Chew_RAM3	<u> </u>
Chew_RAM4	
Chiller Control	
Chiller_Failures	
Chiller Rotation	
Chiller_Sequence_	Numbers
[Uniller_Temp_Cont	rol 🗾
ΠΚ	Cancel

- 2. Select the CPL program object to be replaced and click OK.
- 3. The CPL Program Replacement editor dialog displays (see Figure 350 on page 390).



Custom Programming Language

CPL Program Replacement Editor
Program Name
Chiller_Rotation
BCU
Administration BCU
- Run Frequency
0 Veeks
0 Days
1 Hours
0 Minutes
0 Seconds
OK Cancel Security Classes Help

Figure 350. CPL Program Replacement Editor

Note:

- In the CPL Program Replacement editor dialog box, the BCU field is unavailable, because the program is being replaced at the BCU where the previous program object resides.
- The default name displays in the Program Name field which is the name of the CPL object. Do *not* change the name.
- 4. Define the frequency with which the CPL program runs. To set the frequency click the up/down arrows on the right side of each box. It is recommended that CPL programs run no faster than once every 30 seconds. Normally, programs run every minute, every hour, every day, or are event-driven, based on the functions performed in the CPL program.
- 5. To assign security classes, click Security Classes. (For more information on assigning security classes, refer to Chapter 9, "Setting Up Security—Tracer Summit System".)
- 6. At the CPL Program Replacement editor, click OK to replace the CPL object and return to the CPL editor.

A Status dialog box displays stating whether sending the CPL object to the BCU was successful. If the PC Workstation is online with the BCU, a "Successful Operation Online" message displays. If the PC Workstation is offline, the CPL editor sends the CPL object to the PC Workstation database and a "Successful Operation Offline" message displays. When the PC Workstation goes online, it sends the CPL object to the selected BCU.



Testing a CPL Program

Testing (debugging) allows you to step through a specific CPL program to view variables and properties, and to verify proper performance of the program. You can perform CPL testing only when the PC Workstation is online with the BCU containing the CPL object.

Note:

When a CPL program is in the debug mode, WAIT statements are executed. For longer WAIT statements, it is recommended that they temporarily be shortened or commented out (insert "//" or "///" in front of the statement and recompile) before testing the CPL program.

You will usually encounter two kinds of problems when testing a CPL program:

- The program results in the wrong values for the program variables.
- The program halts because of a runtime error. Runtime errors are errors that do not appear when a program is compiled, but do appear when the program is executed.

Testing a CPL program will help you identify and resolve both types of problems.

To test a CPL program:

1. From the Test menu, select Start Debug. The Select CPL Program dialog box displays (see Figure 351).

Figure 351. Select CPL Program Menu

Sele	ct CPL Program	x
	Chew_RAM3	
	Chew_RAM4	
	Chew_RAM5	
	Chiller_Control	
	Chiller_Failures	
	Chiller Rotation	
	Chiller_Sequence_Numbers	
	Chiller_Temp_Control	
	OK Cancel	

2. Select the program you want to test. Then click OK or double click the desired program.

The background color of the CPL editor changes to cyan when the editor is in the debug (or test) mode. The first line of the program will be highlighted, indicating that the test mode is ready to execute.



3. Select Inhibit DB Writes on the Test menu to prevent the program outputs from being performed.

Note:

- When a CPL program is in the debug mode, the programmer is manually running the CPL program. All outputs from the program are performed unless the Inhibit DB Writes menu item is selected.
- Inhibit DB Writes will prevent the program from writing to the database, and prevent any control functions of the program. The calculations contained in the program will be performed as intended, but no outputs will be sent out.
- 4. If necessary, use the Set Breakpoint function on the Test menu to manually enter a point in the program at which the program execution will stop.

A break is useful at a point in the program just before a problem area, or for an area that you want to test more slowly by stepping through line-by-line.

For example, to test a program you can insert a break just before a problem area in the program. To begin the test, from the Test menu select Run. When the program stops at the set break point, use the Step function to execute the program line by line from that point.

5. Use the Run or Step items on the Test menu to execute the program test.

If you click Step, only one line of the program executes. If you select Run, the editor tries to execute the entire program until it hits a Break or the End statement, or until a runtime error occurs.

6. From the Test menu, select View Variable. The Variable Viewer dialog box displays (see Figure 352 on page 393).



Figure 352. Variable Viewer Dialog Box

Variable Viewer 🛛 🔀
{Outside Air Humidity (AOP)).{Present Value} {Outside Air Temperature (AOP)).{Present Value} Dew_Point_Temp Dry_Bulb Enthalpy ERR Itocal.{SavedValue}]] RH Wet_Bulb_Temp
Array Index Selector
Range 1 · 16 1 💌
- Variable Value
Real Local.{SavedValue}[1]: 21.45
Add Close Help

- 7. When you encounter a problem that involves editing the CPL program, from the Test menu, select Stop Debug. If the program encounters a runtime error, see the section "CPL Error Codes" on page 394 for explanations of the error codes and possible solutions.
- 8. Load the original CPL text file back into the CPL editor. You should not use the decompiled program used for the test to do your edits. The original CPL text file contains the all the extra comment lines that are not saved in the compiled program.
- 9. Edit the CPL text file to fix the problems encountered during the test.
- 10. Compile the program (see "Compiling a CPL Text File" on page 386).
- 11. Replace the CPL object in the database (see "Replacing an Existing CPL Object in the Database" on page 389).
- 12. Test the new CPL program again. Repeat these steps for testing a CPL program until the program runs properly and gives the desired results.



CPL Error Codes

Table 9 shows the error codes that are displayed when you encounter a problem during testing of a CPL program object. Use the Possible Cause and Possible Solution columns of the table to help you fix your CPL program when one of these errors is encountered. If problems persist contact your local Trane representative.

Table 9. CPL Error Codes

Error	Possible Cause	Possible Solution
Error-30	Requested unit is down.	The CPL object is trying to access a property in a BCU that is currently not available.
Error-39	An invalid index was provided for accessing an array element.	The array of Local.{Saved Value} properties in each CPL object has only 16 elements. Trying to access element 17 or higher causes this error. For example, the follow- ing compiles, but causes this error. Num=21 For I=1 to Num step 1 Local.{Saved Value}[i]=VAV[i].{Zone Temperature} Next
Error-103	The CPL program's Get Property table entry call failed.	The property referred to in the CPL routine could not be found for that object.
Error-250	The CPL program has a bad symbol type.	Recompile and replace the CPL object.
Error-251	The CPL program has a bad expression stack.	A bad expression exists in the routine. A common error is to forget to add the property in a statement that is intended for testing the property. For example, If ({Area 1} = 2) Then rather than If ({Area 1}.{Present Value}= 2) Then
Error-252	CPL program has a bad program stack.	Adjust the Context Size property of the CPL object. The default context size is 624. Change the value from 624 to 1248. If the error still occurs, change the value to 1872. If the routine then runs, change the value to 1560. Keep adjusting the value to find the proper context size.
Error-253	CPL program has an invalid symbol stack offset.	Recompile and replace the CPL object.
Error-254	CPL program has a bad BCX_ITRP exe- cution queue or the entry was not found.	Recompile and replace the CPL object.
Error-255	The CPL program has an invalid/unsup- ported token operation.	Recompile and replace the CPL object.
Error-256	The CPL program has a general problem with a symbol.	Recompile and replace the CPL object.
Error-257	The CPL program has overflowed its P stack or E stack.	Adjust the Context Size property of the CPL object. The default context size is 624. Change the value from 624 to 1248. If the error still occurs, change the value to 1872. If the routine then runs, change the value to 1560. Keep adjusting the value to find the proper context size.



CPL Error Codes

Table 9. CPL Error Codes (Continued)

Error	Possible Cause	Possible Solution
Error-258	CPL program has an array index that is out of bounds.	An array index is too big or too small. You may have defined the array to have three elements, and then tried to perform an operation on array element four. Also remember that 0 is not a valid array index.
Error-259	The CPL program has a bad assignment (usually unequal types).	Recompile and replace the CPL object.
Error-260	The CPL program has an unknown token.	Recompile and replace the CPL object.
Error-261	The CPL program has a BCX_ITRP that had a problem looking up symbol (usually invalid type).	Recompile and replace the CPL object.
Error-262	The CPL program parameter and argu- ment types do not match.	Recompile and replace the CPL object.
Error-263	The CPL program has underflowed its expression evaluation stack.	Recompile and replace the CPL object.
Error-264	The CPL program has underflowed its program stack.	Recompile and replace the CPL object.
Error-265	The CPL program (or BCX_ITRP) has problem with nested If statements.	Recompile and replace the CPL object.
Error-266	The CPL program has attempted to divide by zero.	Debug the routine to find where the divide by zero error is occurring. Determine whether a variable is not being initialized (variables are always 0 unless initialized to another value). Question whether the MIN/MAX opera- tors or an IF-THEN statement can be used to prevent the variable in the denominator from going to 0.
Error-267	The CPL program has a bad storage address for symbol.	Recompile and replace the CPL object.
Error-268	The CPL program is too small to be cor- rect.	Recompile and replace the CPL object.
Error-269	The CPL context is too small to be correct.	Recompile and replace the CPL object.
Error-307	An invalid property size was given.	Debug the routine to find where the property size error is occurring. A common error is controlling a binary out- put to a value other than 0 or 1.



Custom Programming Language



Chapter 26 Using the Navigation Tree

The navigation tree is a convenient and intuitive way for users to find and display information in Tracer Summit. The navigation tree displays next to the Tracer Summit application window. Daily operators can see where they are in the system and where they can go. Daily operators can also use the navigation tree to connect with sites or gather information about their system.

The ability to connect to Tracer 100 and Tracker sites by double-clicking is available in the Tracer 100/Tracker Communication and Enterprise Management packages. Connecting to BCU sites by double-clicking a node on the navigation tree is available in Tracer Summit as a standard feature.

Each item on the tree is called a *node*. For a description of nodes and their functions, see "Different Types of Nodes" on page 399. Nodes appear automatically as you build sites and add objects. To make your navigation tree logical and easy to use, arrange the tree to represent the way your organization is set up. For example, if sites are organized in geographical regions, arrange nodes based on this geographical layout.

Depending on security level, users can:

- Rearrange an existing navigation tree using drag and drop and cut and paste commands
- Connect to or disconnect from a site
- Add and remove nodes
- Change the graphic associated with a UCM, area, or site

Note:

Except for systems with shared databases, the navigation tree is unique to each workstation. You cannot change a navigation tree on one workstation and have these changes reflected automatically on another workstation. To copy navigation tree changes from one workstation to another, back up the site database of the workstation where you made the changes and restore it to the other workstation.



The Navigation Tree

The navigation tree graphically depicts where in the system you are and where you can go. Think of the site node as a place where other sites or nodes exist. Nodes outside the site node belong to the system. Nodes inside the site node belong to the site (see Figure 353).

When a node has nodes inside it, a plus (+) symbol displays in front of the node. Click the + symbol to expand the node and to display the nodes inside it. After you expand a node, a minus (-) symbol displays in front of the node. Click the - symbol to collapse the node.







Different Types of Nodes

The ten types of nodes found on the navigation tree appear in Table 10. For further information about nodes, see "Basic Considerations in Moving Nodes" on page 402.

Note:

In the following paragraphs, we refer to connecting to a site by double-clicking a site node on the navigation tree. Connecting to sites automatically when you double-click on them is set up in the System Options editor (see "Setting Connection Features of the Navigation Tree" on page 580). For more information, see "Connecting to a Site from the Tree" on page 401.

Table 10. Navigation Tree Nodes: Types, Icons, and Descriptions

Node Type	lcon	Description/Action
System		The Tracer Summit system node belongs to the system. All other nodes <i>are inside the system node</i> . The system node is the collection of all site nodes.
Tracer Summit BCU Site		A site node is any site in the system that belongs to the system. Site nodes display after you create, restore, or upload a site.
Tracer 100 Site		When you double-click on a site node, its linked graphic appears in the appli- cation window. Double-click the site node again to connect to it or to program off-line.
Tracker Site	n	When you connect to a Tracer 100 or Tracker site, the terminal emulation screen appears. When the site is a multiple-panel Tracer 100 unit-to-unit site, the panel to which you connect is unit 1 (the COP).
Panel	٥	A panel node appears for each remote unit that you create for legacy Tracer 100 and Tracker sites. Double-click a panel node to connect to it or to program off-line.
Group of Sites; also known as a Custom Global	6	The group of sites node is a collection of sites. It is a custom global graphic node belonging to the system site. A group of sites node differs from a custom global graphic node in the following way. A group of sites node has at
Graphic	Without site	least one site node inside it. The custom global graphic node has no site nodes inside it. The group of sites node is not associated with groups
	appears as:	When you double-click a group of sites node, its linked graphic displays in the application window.
Custom Site Graphic	•••	The custom site graphic node is found inside a site node. When you double- click a custom site graphic node, its linked graphic displays in the application window. You can also double-click the node to connect to it or to program off- line.
Area Node		An area node appears for each area defined in a BCU site. UCM and custom site graphic nodes are commonly found inside area nodes. Double-click an area node to see its linked graphic in the application window. If you are not connected already, the Tracer Summit software also connects you to the site to which the area node belongs.



Using the Navigation Tree

Table 10.	Navigation	Tree Nodes:	Types, Icons, ar	nd Descriptions	(Continued)
-----------	------------	--------------------	------------------	-----------------	-------------

Node Type	lcon	Description/Action
UCM Node		A UCM node appears for each UCM defined in a BCU site. UCM nodes are grouped together, most often inside area or custom site graphic nodes. Dou- ble-click a UCM node to see its linked graphic in the application window. If you are not connected already, the Tracer Summit software also connects you to the site to which the UCM belongs.
Macro		Macro nodes are found inside Tracer 100 and Tracker sites. When you are connected to a site and you double-click a macro node, it runs regardless of what site panel is active.

Using the Navigation Tree

Use the navigation tree to access nodes, sites, equipment, and macros.

Accessing the Tree

- From the View menu, select Navigation Tree.
 - To expand the entire tree, double-click the system node.
 - To collapse the tree, double-click the system node.

Using the Tree Menu and Pop-up Menus

The selections that are available from the Tree menu or pop-up menus depend on the type of node you have selected. Therefore, using the pop-up menu is a convenient way to access actions such as Cut, Paste, Add/Edit/ Change/Remove Graphics, Connect Site, Add Macro, and so on.

To access a pop-up menu:

• Right-click the mouse on a node in the navigation tree to display a pop-up menu specific to that type of node (see Figure 354).

Figure 354. Navigation Tree Pop-up Menu

Tracer Su	ummit DT UMMIT1 IIIMMIT2
	<u>C</u> lose Site
⊡-∰ bax1 ⊡-⊡ 9 ⊡-⊕ €	Connec <u>t</u> Site Disconnec <u>t</u> Site
⊕-@́j si	<u>F</u> ind
	Add Macro
	Paste



Accessing Sites and Equipment

- To access a node and its equipment, perform one of the following:
 - Click the + symbol to expand a node to display nodes inside it.
 - Click the symbol to collapse a node when nodes inside it are displayed.
 - Double-click a node to open it. This opens the site but does not necessarily connect to it. See "Connecting to a Site from the Tree" for more information on connecting to sites when you double-click their nodes.

Connecting to a Site from the Tree

When you use the navigation tree to connect to a site, you can only use the connection method you set up in site configuration in the Site Connection Wizard. For more information, see "Creating a New Site" on page 34.

You can configure the nodes on a workstation tree to automatically connect to sites when you double-click site nodes or any node(s) inside them. For more information about this procedure, see "Changing Advanced Settings" on page 575.

• To automatically connect to a site, double-click the site node or any node inside that site.

Note:

The advanced option for connecting automatically might not work due to workstation hardware limitations. For example, if your workstation does not have enough modems to communicate simultaneously with every remote site, the system displays an error message.

Disconnecting from a Site

• While connected to the site, from the Connect menu, select Disconnect. The site is disconnected from the workstation but stays open for offline programming.

Closing a Site

• With the site open, from the Connect menu select Close Site.



Refreshing the Navigation Tree

The navigation tree can display up to 32,768 nodes. Any node created afterwards does not display until you make room for it by closing other nodes or sites. When you try to add node 32,769, for example, the navigation will not display the new node until you collapse a site. Collapsing and expanding sites refreshes the tree.

Note:

Use the Refresh command as a quick way to collapse all nodes in the tree.

Creating Nodes

There are several ways to create nodes. These include site configuration, site uploads, site restorations, the Area editor, the Keyboard Macro editor, restoring graphics, and the Graphics editor. Once you add nodes to the tree, you can further modify them by cutting and pasting or dragging and dropping them inside other nodes.

Basic Considerations in Moving Nodes

"Different Types of Nodes" on page 399 describes and explains the ten types of nodes. Note the difference between a system node and a site node. You can move site nodes but not the system node. Table 11 lists what nodes you can and cannot move.

Table 11. Moving Nodes

You can move	You cannot move
Custom graphic nodes	System nodes inside site nodes
Area nodes	System nodes inside any of the objects belonging to a site
UCM nodes	Nodes that belong to a site outside of that site
Macro nodes	Any node with nodes inside of lower- level nodes
Site nodes	Panel nodes (Tracer 100 or Tracker)
	Macro nodes inside other macro nodes



Cutting and Pasting Nodes

- 1. Click the node that you want to cut and paste.
 - For consecutive nodes, click on the first node, then hold down the Shift key and click on the next node.
 - Otherwise, click on the first node, then hold down the Ctrl key and click on each additional node.
- 2. From the Tree menu, select Cut.
- 3. Click the node in which you want to paste the cut node.
- 4. From the Tree menu, select Paste.

Dragging and Dropping Nodes

For an example of dragging and dropping nodes, see "Grouping Nodes" on page 404. You can also consult the procedure for dragging and dropping nodes explained in the *Daily Operations* guide.

Creating Nodes that Belong to the System

Some nodes are associated with the system and some nodes are associated with specific sites. Site nodes and custom global graphics, for example, belong to the system. Panel and macro nodes belong to specific sites. All nodes are found inside the system icon. For more information, see "Different Types of Nodes" on page 399.

Consult the following procedures for creating nodes that belong to the system.

- You create site nodes during site configuration, uploads, and restorations. For more information, see Chapter 6, "Configuring Tracer Summit BCU Sites" and Chapter 8, "Defining Tracer 100 or Tracker Sites."
- To create custom global graphic nodes, access the Graphics editor. For more information, see "About Site and Global Graphics" on page 501.
- To restore custom global graphics, see "Restoring Global Graphics" on page 646.

Creating Nodes Inside Site Nodes

Consult the following procedures for creating nodes inside site nodes.

- To create custom site graphic nodes, use the Graphics editor. For more information, see "About Site and Global Graphics" on page 501.
- To restore custom site graphics, see "Restoring Site Graphics" on page 647.
- To create UCM nodes, use the UCM editor. For more information, see "Creating a New UCM" on page 191.
- To create area nodes, use the Area editor. For more information, see "Creating an Area" on page 305.
- If you want to create a node in a Tracer 100 or Tracker site, create a device (remote unit) or a macro in the Keyboard Macro editor. For



more information, see "Creating a Remote Unit for Tracer 100 Sites" on page 125 and "Creating a Keyboard Macro" on page 415.

Grouping Nodes

Group nodes to better organize your site. For example, create a custom site graphic titled UCMs and then group all UCMs under the graphic node.

To group nodes:

- 1. Click the first node and left-click the mouse.
- 2. Drag it onto the second node.
- 3. Release the left mouse button. The first node moves inside the second node.

Finding a Node

Use the following procedure to find a node. For example, if you want to find a specific piece of equipment but have forgotten which site it belongs to, use Find.

Tracer Summit does not search sites for which you do not have security access. If you use Find to locate a node that is inside a site to which you do not have access, then Tracer Summit will not find the node for you.

Any user, except Nobody Logged On, can find nodes outside the site level, regardless of their security level. Nodes that exist outside the site level include custom global graphic, group of sites, and site.

To find a node on the navigation tree:

- 1. From the Tree menu, select Find. The Find Item in Tree dialog box displays.
- 2. Type the name of the node that you are looking for in the Look for field. Use wildcards if you want. (See online Help for information on wildcard search commands.)
- 3. Click Find. The Tracer Summit software searches for the node and highlights it when found. Otherwise, a dialog box informs you that the node was not found.
- 4. Click Close.



Modifying the Tree

The following procedures describe how to modify the navigation tree. These procedures include removing nodes, adding back nodes you removed, changing the graphic of a node, and modifying macro nodes.

Assigning Graphics to Nodes

You can assign the graphic for a Tracer Summit BCU site object, UCM object, or area object on the tree. You *cannot*, however, assign the graphic for a custom graphic object on the tree. This is because custom graphic nodes always represent themselves.

The only types of nodes that do not have a graphic associated with them are the system node, panels, and keyboard macros. You cannot assign graphics to these nodes.

To change the graphic assigned to a node:

- 1. Select the desired node to modify.
- 2. From the Tree menu, select Change Graphic. The Change Graphic dialog box appears (see Figure 355).

hange Graphic				2
Object Name:	SI			
Current Graphic:	Site			
Change to:	Site			
Absorption, 1 Stage Absorption, 1 Stage Absorption, 1 Stage Absorption, 1 Stage Absorption, 2 Stage Absorption, 2 Stage Area	, Hot Water , Steam , Steam, P2 , Hot Water,P , Steam , Steam, P2	 Si Si G 	andard te obal	

Figure 355. Change Graphic Dialog Box

- 3. Select the type of graphic that you want to use for the selected node:
 - Click Standard for a list of available standard graphics.
 - Click Site for a list of site-only graphics (graphics created just for the site where the selected node resides).
 - Click Global to display a list of available global standard and custom graphics.



- 4. From the Graphics list, select the graphic you want to assign to this node.
- 5. Click OK to link the node to the selected graphic.

Editing the Graphic of a Node

- 1. Double-click the desired node to modify.
- 2. From the Setup menu, select Graphics Editor. The Graphics editor displays.
- 3. To edit the graphic, follow the procedures described in "Editing Graphic Properties" on page 468.

Removing Node(s)

You *can* remove custom graphic, UCM, area, and macro objects from the navigation tree. You *cannot* remove the system node, site nodes, or Tracer 100 and Tracker panel nodes. To remove these, use the Delete Object utility. For more information, see "Deleting a Site" on page 658.

For example, if you remove a custom graphic node that has UCMs in it, the UCM nodes under the custom graphic node will also be removed.

If you try to remove a site node that has a macro inside it, the macro node cannot be removed. Therefore, it relocates inside a higher level site node or inside the system node.

To remove a node from the navigation tree:

- 1. Click the node(s) that you want to remove.
- 2. From the Tree menu, select Remove Graphic/Remove Macro.

If the selected node has nodes inside it, the Node Removal Confirmation dialog box appears asking you whether you are sure you want to remove the node and all nodes under it.

3. Click OK on the Node Removal Confirmation dialog box. The nodes are removed from the tree.



Adding Back a Removed Node

When you remove one or more nodes from the navigation tree, you can later add them back to the tree without recreating their objects, as long as the objects they reference have not been deleted from the system. The nodes are added back to a site node or the Tracer Summit system node (depending upon where they were located originally).

Note:

- A graphical node can only appear in the tree once.
- Any macro node can be shared between many sites, so it might appear in several sites at a time.

To add a previously removed node:

- 1. Click in the tree where you want to add back a removed node:
 - For previously removed custom graphic nodes that belong to the system, click on any site or custom global graphic node.
 - For previously removed custom graphic nodes that belong to specific site, click anywhere within that site.
- 2. From the Tree menu, select Add Graphic. The Add Graphics dialog box appears. The dialog box displays the nodes that were previously removed.
- 3. Select the node(s) you want to add back to the tree.
- 4. Click OK. The node appears back in the tree.

Note:

Since the tree automatically sorts nodes alphanumerically, the node might not appear in the spot you wanted it. In that case, drag and drop or cut and paste it where it belongs.

Editing a Tracer 100 Keyboard Macro from the Navigation Tree

• Select the desired macro to edit. From the Setup menu, select Keyboard Macro editor. The Select Keyboard Macro dialog box appears. For more information, see "Creating a Keyboard Macro" on page 415. Using the Navigation Tree




Chapter 27 Connecting to Tracer 100 and Tracker EMTK Panels

Once you install the Tracer 100/Tracker Communication package, you can connect to Tracer 100 or Tracker EMTK panels in terminal emulation mode, create .SAV files for Tracer 100 panels, and create keyboard macros for T100 and Tracker terminal emulation sessions.



Connecting to Tracer 100 and Tracker EMTK Panels

Background Considerations for Connecting to Tracer 100 or Tracker EMTK Panels

Important issues to consider when you connect to a Tracer 100 or Tracker EMTK panel include port connections, the navigation tree, and altering panel memory.

IMPORTANT

Tracer Summit supports a connection to Tracer 100 panels at version 14.4 or higher and Tracker EMTK panels at version 5.0 or higher. You can not connect to the new Tracker BMTK (Tracker III).

Configuring Port Connections

Terminal emulation occurs only through connected sites. Tracer Summit workstations connect to a Tracer 100 or Tracker (EMTK) by means of direct connection or modem. In determining the means by which you communicate with a Tracer 100 or Tracker panel, the port that you connect to on the panel logic board is important.

You can directly connect to port 1 or port 2 of the Tracer 100 for terminal emulation. You can only connect by means of a modem to port 2. Remember the following when you configure Tracer 100 and Tracker panels:

- Port 1 of the Tracer 100 logic board does not support the BMN protocol. This port only handles terminal emulation
- The Tracer Summit workstation—like the BMN workstation—only supports connection through port 2. Port 2 can handle terminal emulation and BMN protocol simultaneously.
- You can directly connect the Tracer Summit workstation to port 2 on the Tracer 100 panel or connect to port 2 through a modem
- Port 2 handles ASCII mode and BMN protocols simultaneously. Using both, however, might cause the terminal emulation menus to slow down and miss key strokes.

Note:

If you have several Tracer 100 or Trackers connected to the Tracer Summit workstation, only one site can use the terminal emulator at a time.

For more information about configuring the Tracer 100 or Tracker panel for direct or modem connection, see the Tracer 100 Series *Programming* guide (EMTB-PG-11), Tracer 100 *Installation* guide (EMTB-IN-12), or the *Installation Guide for Tracer 100i, Tracer L, and Tracer Chiller Plant Manager* (EMTF-IN-6).



Tracer 100 and Tracker EMTK Sites on the Navigation Tree

You can configure the Tracer 100 or Tracker site nodes in the navigation tree to automatically connect to a Tracer 100 or Tracker site and open a terminal emulation session.

Note:

- Expanding and collapsing the tree by clicking the + and symbols does not connect you to a site.
- When you configure the navigation tree to open a site automatically when you double-click on it, the automatic connection applies to all sites or no sites.

For more information about terminal emulation, see the Tracer 100 *Daily Operations* guide.

For more information about selecting this capability in system options, see "Setting Connection Features of the Navigation Tree" on page 580. For information about the navigation tree and how it connects to Tracer 100 and Tracker panels, see "Connecting to a Site from the Tree" on page 401.

Altering Panel Memory

Terminal emulation is one of two methods to change settings in a Tracer 100 or Tracker EMTK panel. Another method of changing the settings in a Tracer 100 panel is to restore a site (see "Restoring a Tracer 100 Site" on page 650).

Any memory alterations, such as system expansion, that you make while in terminal emulation mode do not show up in Tracer Summit until the panel is scanned as part of normal processing. If you have the Building Management or Enterprise Management package you can scan the site any time using the Task Manager (see "Run Immediate Scan on a Single Site" on page 221).



Creating .SAV files for Tracer 100 Panels

Use the following procedure to back up all the information in a Tracer 100 panel and save it to a .SAV file. If a site has multiple panels, use this procedure to back up each panel. When you are disconnected from a site, Tracer Summit automatically connects to the panel and creates the file, and then disconnects (if you choose to let it).

Note:

A SAV file differs from a .BDB file, which is created during daily operations. A .BDB file contains the information that has been scanned from the panel into the workstation database. The .BDB file information for Tracer 100 or Tracker sites only includes schedules, calculated binaries and analogs, and generic points. A .SAV file, on the other hand, contains all the information from the panel. The .SAV file is used to restore Tracer 100 panels (see "Restoring a Tracer 100 Panel" on page 668).

With the Tracer 100/Tracker Communications package installed, you can back up individual Tracer 100 panels. If you want to back up entire Tracer 100 site with multiple unit-to-unit panels or groups of sites, purchase the Building Management or Enterprise Management package. In these packages, the Task Manager application has an option that backs up all defined panels of a Tracer 100 site (see "Backing Up Sites" on page 218).

To create a SAV file:

- 1. From the Tools menu, select Backup. A submenu appears.
- 2. Select Remote. The Backup a Remote dialog box appears (see Figure 356).

Figure 356. Backup a Remote Dialog Box

Backup a Remote		X
Remote Unit to Backup: Save in:	SUMMIT1 C:\Program Files\Tracer Summit\backup\Database\SUMMIT1.sav	Browse
	OK Cancel	Help

3. From the Remote Unit to Backup list, select the panel to back up. Click the Browse button to select the directory where you want to store the SAV file.

The name of the backup file will always be *.SAV, where * is the name of the remote unit as defined in Tracer 100 site configuration.



- 4. Click OK. If you are not already connected to the site, Tracer Summit connects to the panel and performs the backup. While the backup is in process (which may take up to 15 minutes), you cannot perform any other action in terminal emulation.
- 5. If Tracer Summit had to connect to the site, at the end of the backup, a dialog box appears that asks whether you want to go online with the panel. You must respond within two minutes or Tracer Summit disconnects.

Creating Keyboard Macros

The Keyboard Macro editor provides access to one feature that is unique to Tracer 100 and Tracker sites. This is the keyboard macro, also known as the keystroke macro by many BMN users.

The keyboard macro sends a sequence of ASCII characters and control codes to the Tracer 100 or Tracker panel while in terminal emulation mode. This coded sequence is the same as those a user might type at the command line of the BMN interface.

Keyboard macros make navigation through a Tracer 100 or Tracker screen quick and efficient. In BMN, all the user has to do is run the macro, and the BMN interface finds and locates the menu/submenu/item that the user requires. Tracer Summit has taken these macros and automated them. Now with Tracer Summit, you can run these macros by double-clicking them on the navigation tree or from a pop-up menu.

Macros, however, are not set up to take you *between* panels. Tracer Summit handles navigation between panels based on the setup in Site Configuration. It does not rely on the keyboard macros to do this.

Tracer Summit ships with a standard library of predefined keyboard macros. For detailed tables listing these macros and the names they display on the navigation tree, see "List of Predefined Keystroke Macros" on page 418.



Accessing the Keyboard Macro Editor

- 1. Log on to a Tracer 100 or Tracker site.
- 2. From the Setup menu, select Keyboard Macro Editor. The Select Keyboard Macro dialog box appears (see Figure 357).

Figure 357. Select Keyboard Macro Dialog Box

Select Keyboard Macro			×
Name Boolean Processing Calculated Binary Status DDC Event Log Expanded Message Keyboard Timed Override System Security Time of Day Trend Log Zone Status			
ок	New	Cancel	Help

- 3. Select a Macro and click OK.
- 4. The Keyboard Macro editor displays (see Figure 358).

Figure 358. Keyboard Macro Editor

Keyboard Macro	
Macro Name:	Event Log
Macro Sequence:	9M1S Browse]
Available Site(s) BAX101 TRK101	Add >> Add All >> << Remove << Remove All



Creating a Keyboard Macro

Use the following procedure to add macros to a site or multiple sites.

Note:

The Tracer 100 or Tracker terminal emulator application does not validate keyboard macros that run during the session. The Tracer Summit software assumes that you have properly set up the macro to locate and find the correct location in the Tracer 100 or Tracker menu structure.

To create a keyboard macro:

- 1. Log on to a Tracer 100 or Tracker site.
- 2. From the Setup menu, select Keyboard Macro Editor. The Select Keyboard Macro dialog box appears (see Figure 357 on page 414).
- 3. Click New. The New Keyboard Macro Name dialog appears.
- 4. Type a unique name for the new macro.

Make your macro name generic enough to remember across numerous sites but specific enough to remember what function it performs.

- 5. Click OK. The Keyboard Macro editor appears (see Figure 358 on page 414).
- 6. Click the Macro Sequence field and type or edit the macro sequence that you want to run when the macro is chosen. The text entered in this field is the keystroke sequence that Tracer Summit sends to the panel.
- 7. In the Available Site(s) list, select the site(s) to which you want to apply the macro.
- 8. Click Add to add the site(s) to the Selected Site(s) list.
- 9. Click Save. The macro object is saved to the database of the workstation. The navigation tree is updated to include the macro node under the sites you specified.



Selecting Predefined Macros

Tracer Summit has certain predefined keyboard macros that you can select without having to enter them manually. For lists of these predefined macros, see "List of Predefined Keystroke Macros" on page 418.

To select predefined macros:

- 1. With the Keyboard Macro editor open, click the Browse button. The Macro Reference Table appears (see Figure 359).
- 2. Click the Panel Main Menu arrow and select a macro type (see Figure 359).

Figure 359. Macro Reference Table Dialog Box and Pull-down Menu

Macro Reference Table	×
Panel Main Menu	
Event Log Event Log Building Status Menu ICS Equipment Status Menu Operator Logon/off Menu Repot & Summaries Menu Building Control Menu Keyboard Timed Override Menu System Setup Menu	Jence S
OK Cancel	Help

3. From Submenu Options, select the desired macro (see Figure 360).

Figure 360. Macro Reference Table Dialog Box with a Selected Macro

Macro Reference Tat	ole	×
Panel Main Menu		
Event Log	•	
Submenu Options		
Name	Sequence	
Event Log	9M1S	
OK	Cancel	Help



- 4. Click OK. The Keyboard Macro editor appears (see Figure 358 on page 414). The name of the macro displays in the Macro Name field. The macro sequence displays in the Macro Sequence field.
- 5. In the Available Site(s) list, select the site(s) to which you want to apply the macro.
- $6. \quad Click \ Add \ to \ add \ the \ site(s) \ to \ the \ Selected \ Site(s) \ list.$
- 7. Click Save. The macro object is saved to the database of the workstation. The navigation tree is updated to include the macro node under the sites you specified.



List of Predefined Keystroke Macros

The following tables list details for the following three types of predefined keyboard macros: miscellaneous, Tracer 100, and Tracker.

Miscellaneous Keyboard Macros

Table 12 lists keyboard macros that perform general functions on a terminal emulation menu.

Table 12. Miscellaneous Macros

Function	Keystroke Sequence
Acknowledge	А
Help	Н
List	L
Menu	М
Next	N
Panel Main Menu	9M
Previous	Р

Tracer 100 Predefined Keyboard Macros

Table 13 through Table 20 list keyboard macros that navigate you to specific places in a specific terminal emulation screen of a site.

The Node Name column contains the name of the keyboard macro as it appears in the navigation tree and the terminal emulation pop-up menu.

The Keystroke Sequence column displays the actual characters that make up the content of the macro; that is, the sequence of characters sent to the terminal emulation interface.

Table 13. Event Log Menu Macro

Node Name	Keystroke Sequence
Event Log	9M1S



Table 14.	Building	Status	Menu	Macros
-----------	----------	--------	------	--------

Node Name	Keystroke Sequence
Building Status-main menu	9M2S
Binary Input Status	9M2S1S1S
Analog Input Status	9M2S1S2S
Meter Input Status	9M2S1S3S
Tracer Rooftop Analog Status	9M2S1S4S
Binary Output Status	9M2S1S5S
Tracer Rooftop Status	9M2S1S6S
Zone Status	9M2S1S7S
Calculated Binary Status	9M2S1S8S
TIM Equipment Status	9M2S1S9S
TIM Analog Status	9M2S1S10S
Calculated Analog Status	9M2S1S11S
Analog Output Status	9M2S1S12S
Global Binary Input Status	9M2S1S13S
Global Binary Output Status	9M2S1S14S
Global Analog Input Status	9M2S1S15S
Global Analog Output Status	9M2S1S16S
SCP Status	9M2S1S17S
UCM Analog Input Status	9M2S1S18S
UCM Binary Input Status	9M2S1S19S
VAV CU Group Output Status	9M2S1S20S
Global UCM Output Status	9M2S1S21S
AHU Output Status	9M2S1S22S
UCM Binary Output Status	9M2S1S23S
UCM Analog Output Status	9M2S1S24S
TCM Status	9M2S1S25S
CSC Output Status	9M2S1S26S
Scroll Chiller Output Status	9M2S1S27S
PCM Output Status	9M2S1S28S
VariTrac I CM Output Status	9M2S1S29S
Voyager Micro Rooftop Status	9M2S1S30S
Fan Coil CU Group Status	9M2S1S31S
Fan Coil CU Status	9M2S1S32S
VAV CU Status	9M2S1S33S
RTA-RTW Chiller Output Status	9M2S1S34S
WS Heat Pump Status	9M2S1S35S



Connecting to Tracer 100 and Tracker EMTK Panels

Node Name	Keystroke Sequence
VAV CU II Group Output Status	9M2S1S36S
VAV CU II Status	9M2S1S37S
Generic Interface Node Status	9M2S1S38S
† Terminal Unit Controller Status	9M2S1S39S
‡ VariTrac II CCP Group Status	9M2S1S40S
‡ VariTrac II CCP Status	9M2S1S41S
† CenTraVac/RTHB UCP2 Status	9M2S1S42S
† Absorption UCP2 Chiller Status	9M2S1S43S
IntelliPak Rooftop Status	9M2S1S44S
UPCM Status	9M2S1S45S
‡ Voyager Commercial RTU Status	9M2S1S46S

Table 14. Building Status Menu Macros (Continued)

(Referencing BAS-EB-25, Tracer 100 Series Software Versions)

[†] V14.4 added communication and control capabilities for the UCP2 CenTraVac chiller (type 42), the UCP2 Absorption chiller (type 43), and the WS Heat Pump TUC (type 39).

V15.0 added communication and control capabilities for the VariTrac
 II CCP (types 40 & 41) and Voyager Commercial 27.5 to 50-ton rooftop units (type 46).

Table 15.	ICS Equipment	Status Main	Menu Macros
-----------	----------------------	--------------------	-------------

Node Name	Keystroke Sequence
ICS Equipment Status -main menu	9M3S
Unit Controller Status	9M3S1S
Tracer Rooftops	9M3S1S6S
TIM Equipment	9M3S1S9S
SCP	9M3S1S17S
Air Handler Outputs	9M3S1S22S
TCM Outputs	9M3S1S25S
CSC Outputs	9M3S1S26S
Scroll Chiller Outputs	9M3S1S27S
PCM Outputs	9M3S1S28S
VariTrac ICM Outputs	9M3S1S29S
Voyager Micro Rooftops	9M3S1S30S
Fan Coil Command Units	9M3S1S32S
VAV Command Units	9M3S1S33S
RTA-RTW Chiller Outputs	9M3S1S34S
WS Heat Pumps	9M3S1S35S
VAV Command Unit II	9M3S1S37S





Node Name	Keystroke Sequence
Terminal Unit Controllers	9M3S1S39S
VariTrac II CCP	9M3S1S41S
CenTraVac UCP2 Chillers	9M3S1S42S
Absorption UCP2 Chillers	9M3S1S43S
IntelliPak Rooftops	9M3S1S44S
UPCM	9M3S1S45S
Voyager Commercial Rooftops	9M3S1S46S
Chiller Sequencing Status	9M3S2S
Chiller System Status	9M3S2S1S
Chiller Unit A Status	9M3S2S2S
Chiller Unit B Status	9M3S2S3S
Chiller Unit C Status	9M3S2S4S
Chiller Unit D Status	9M3S2S5S
Chiller Unit E Status	9M3S2S6S
Chiller Unit F Status	9M3S2S7S

Table 15. ICS Equipment Status Main Menu Macros (Continued)

Table 16. Operator Logon/off Menu Macros

Node Name	Keystroke Sequence
Operator Logon and Logoff	9M4S

Table 17. Report & Summaries Menu Macros

Node Name	Keystroke Sequence
Reports and Summaries -main menu	9M5SL
Current Summary Report	9M5S1S1S+\$
Monthly Summary Report	9M5S1S2S+\$
33-Day Energy Report	9M5S1S2S+\$
12-Month Energy Report	9M5S1S4S+\$
12-Month Meter Report	9M5S1S5S+\$
7-Day Override Time Report	9M5S1S6S+\$
Monthly Override Time Report	9M5S1S7S+\$
7-Day Temperature Report	9M5S1S8S+\$
12-Month Degree Days Report	9M5S1S9S+\$
SCP Chiller 12 Month Summaries	9M5S1S10SL
Trend Log Report	9M5S1S11SL
Totalizing Report	9M5S1S12S+\$



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Node Name	Keystroke Sequence
RTA-RTW Chiller Report	9M5S1S13SL
Custom Reports – Monthly	9M5S1S14S1SL
Custom Reports – 12 Month	9M5S1S14S2SL

Table 17. Report & Summaries Menu Macros (Continued)

Table 18. Building Control Menu Macros

Node Name	Keystroke Sequence
Building Control Menu	9M6S
Building Control On/Off	9M6S1S
Zone Setpoints	9M6S2S
Time of Day	9M6S3S
Duty Cycle	9M6S4S
Timed Override	9M6S5S
Demand Limiting	9M6S6S
Trend Log	9M6S7S
Air Balance	9M6S8S
Boolean Processing	9M6S9S
Run Time/Maintenance	9M6S10S
Expanded Message	9M6S11S
Process Control Language	9M6S12S
DDC	9M6S13S
Priority Control	9M6S14S
Totalizing	9M6S15S
Chiller Sequencing	9M6S16S
Custom Reports	9M6S17S

Table 19. Keyboard Timed Override Menu Macros

Node Name	Keystroke Sequence
Keyboard Timed Override	9M7S



Table 20.	System	Setup	Menu	Macros
-----------	--------	-------	------	--------

Node Name	Keystroke Sequence
Building Control On/Off	9M8S1S
Time and Dates	9M8S2S
Input/Output Data	9M8S3S
System Expansion	9M8S4S4S
System Configuration	9M8S5S
System Security	9M8S6S
ICS Equip Local Programming	9M8S7S
Status Display Definition	9M8S8S
Link A – ICS Equip Address	9M8S9S1S
Link B – ICS Equip Address	9M8S9S2S
Link C – ICS Equip Address	9M8S9S3S

Tracker Predefined Keyboard Macros

Table 21 lists keyboard macros that only run on Tracker panels.

Table 21. Tracker Macros

Node Name	Keystroke Sequence
Alarm Log	9M8S1S
Bldg Equip – Varitrac II CCP	9M8S2S
Bldg Equip – TCM	9M8S3S
Bldg Equip – Slave TCM	9M8S4S4S
Bldg Equip – Voyager Rooftop	9M8S5S
Demand Limiting Status (Stat16)	9M8S6S
Trend Log Status	9M8S7S
Current Day Energy Log (Stat16)	9M8S8S
35 Day Energy Log (Stat16)	9M8S9S1S
Operator Logon/Logoff	9M8S9S2S



Connecting to Tracer 100 and Tracker EMTK Panels



Chapter 28 Using the Trend Viewer

The Trend Viewer provides one of the easiest methods for viewing and graphing trended data. With a few clicks of the mouse button on a graphic, you can display trended data on a graph. The graph can also display icons for alarms and events to represent activity changes in the system. This gives you a clear and easy-to-use picture of what is happening in your automation system and when those changes occurred. The activity of live, trended and untrended data is viewed in a Trend Viewer window.

Whether you need to determine the temperatures in a room for a short period of time or watch an air handler's output temperature over a long period of time, the Trend Viewer gives you the flexibility to view data in the way that best fits your needs.

With the Trend Viewer you can:

- View live untrended data
- Plot overrides, alarms, and events related to the trended point
- Plot audit trail data
- View up to 10 properties
- Save trend data in graphical format or as a CVS file
- Print out data
- View multiple graphs at one time

This chapter covers the following topics:

- "Setting up the Trend Viewer" on page 426
- "Creating a Trend Viewer" on page 431
- "Opening a Trend Viewer" on page 434
- "Saving a New Trend Viewer" on page 438
- "Adding to a Trend Viewer" on page 439
- "Historical Trends in the Audit Trail Database" on page 447

Note:

To set up the Trend Viewer you must have security access rights. For further information, see your Site Security Administrator.



Setting up the Trend Viewer

- 1. From the Site Security editor select the Objects tab (see Figure 361).
- 2. In the Access column, click the Trend Viewer checkbox.
- 3. Click Save.

Figure 361. Objects Tab

		User Info	Functions	Applications	Objects	Classes	1
	Γ		Object	t Туре		Access	
		Space Co	mfort Control	ler (SCC)			
		Terminal L	Init Controller	(TUC)		V	
		Thermosta	at Control Par	nel (TCM)		V	
		Tracer Lo	op Controller			V	
		Tracer Re	mote Station	(TRS)		V	
		Trane Eur	ope Chiller			V	
		Trend				V	
	K	Trend Vie	wer	>		V	
		Universal	PCM			V	
		User Secu	urity			V	
Trend Viewer		Variable A	Air Volume U	CMT (VAVI)		V	
checkbox		Variable A	Air Volume U	СМ ІМІЛУ (VAV	ININ∆)	V	
		VariTrac I	I CCP Group			V	
		VariTrac I	I CCP System	1		V	
		VariTrac II CCP UCM				V	
		VAV Air S	AV Air Systems			V	
		VAV Air S	VAV Air Systems (VAS LonTalk)			V	
		Voyager Rooftop			V		
		Voyager F	Rooftop (Con	im3)		V	-



- 4. Click the Applications tab (see Figure 362).
- 5. Select the View Only or View/Edit checkbox for the Trend Viewer.
- 6. Click Save.
- 7. Click Close.

Figure 362. Applications Tab

	User Info Functions	Applications Objects	Classes]		
	Арр	lication		View Only	View/Edit	
	Scroll Chiller (CGA/CG	W)				
	Series R Chiller (RTA/	RTW)			<u> </u>	
	Site Configuration				V	
	Space Comfort Contro	iller (SCC)		Γ	V	1
	Task Manager			Γ	V	1
	Terminal Unit Controlle	r (TUC)				
	Thermostat Control Mo	dule (TCM)				
	Tracer Loop Controller					
	Tracer Remote Station			V		
	Trane Europe Chiller					
	Irend	frend				
	Trend Viewer					
	Universal Programmak	ole Control Module (UPCN	1			
- 1) <i>r</i>	Variable Air Volume U	CMT(VAVI)				
Irend Viewer	Variable Air Volume U	СМ ІЛІЛУ (VAV ІЛІЛУ)				
checkbox	VariTrac II Central Cor	ntrol Panel (CCP)				
	VAV Air Systems					
	VAV Air Systems (VA	AS LonTalk)				
	Voyager Rooftop (VO	Y)				•

8. From the Menu bar select Setup, and then select Trends. The Select Trend dialog displays (see Figure 363).

Figure 363. Select Trend Dialog Box

S	elect Trend	×
	Name AHU-1 AHU-2 AHU-2 Space AHU3 Space control AMSTOV Requests Airtech RTU 1 airtemp Airtech temp trend RTU 4 BCU #1 Processor Idle Time BCU 2 UCM Comm Loss Bill - AHU-1 Space temperature Bill - AHU-3 Space Control Bill - AHU-4 Space temp	
	OK New Cancel Help	

9. Select a trend from the Name list.



- 10. Click OK. The Trend Editor displays (see Figure 364).
- 11. Click the Members tab.
- 12. Check the Harvest Data for this trend checkbox.
- 13. Check the Enable Historical Trending box (not shown in Figure 364; this only applies to Tracer Summit CCS and Enterprise users).
- 14. Click Save.
- 15. Click Close.

Figure 364. Members Tab

Status Members Setup Classes	
Status Members Setup Classes Type: Analog Input Image: Name: Image: Image: Name: Image: Image: S01 input percent 501 input percent S01 output percent Image: AHU-1 Discharge: Image: Type of Property Image: Show All Image: Property: Image: Alarm On High Limit Image: Alarm On Low Limit Image: Charge Of State Time Image: Event State Image: Multiplier Image: Offset Image: Harvest Data for this trend	Member List: Universal PCM (UPCM): UPCM 1 · AHU-1 / Analog In[5] Universal PCM (UPCM): UPCM 1 · AHU-1 / Analog In[3] Universal PCM (UPCM): UPCM 1 · AHU-1 / Analog Ou[1] Universal PCM (UPCM): UPCM 1 · AHU-1 / Analog Ou[2] Viniversal PCM (UPCM): UPCM 1 · AHU-1 / Analog Ou[2] <<< Remove All The sample size is set to 88 therefore 5 is the maximum number of members allowed.
	Close Save Open Another Help



16. From the menu bar click Tools, and then select Options. The Systems Options screen displays (see Figure 365).

General File Locations Advanced		
Graphics		
Home Graphic: Site	Change	
🔄 🗖 Display Override Status		
Events		
Category Toolbar Max Popups	Event Log Capacity: 5.000	
Category 1 0		
Category 3 □ 0	BCU Event Log Capacity: 5,000	
Category 4 0	Error Log Capacity: 5,000 💌	
Event Printer: \\basbns07\TRN430PS	Change	
Enable Event Printing		
Show Connection Dialog on Incoming Alarms	3	
Disable Workstation Alarm		
Forward Alarms	Enable Auto Refresh	
Event Class:	Refresh Rate: 1 Minute	
Email address:		
- Harvested Trend		
Keep Harvested Trend Data for	Year(s)	
	-]
		.
		Close Save Help

Figure 365. Systems Options Screen–General tab

17. In the Harvested Trend area, click the arrow to display the drop-down list. Select a time frame.

Notes:

- Harvested trends only affect the Trend Viewer database, not the Audit Trail database.
- Data in harvested trends is scheduled to be deleted after a certain number of years.
- 18. Click Save.
- 19. Click Close.





Setting up Properties from Pop-up Menus in a Graphic

In order to display a pop-up window with the Open Trend Viewer option available as shown in Figure 366, a property within a graphic must meet the following conditions:

The property must be trendable

And:

The property must be one of five status points:

- Status text
- Analog in 5 color
- Binary text
- Animation
- Slider

Or one of three control point types:

- Setpoint control
- Binary checkbox control
- Selection list control

Figure 366. Displaying a Pop-up Window from a Graphic





Creating a Trend Viewer

You can create a Trend Viewer from the following:

- The Setup menu
- A property in a graphic

Creating a Trend Viewer From the Setup Menu

1. From the Setup menu, select Trend Viewer. The Select Trend Viewer Object dialog box displays (see Figure 367).

Figure 367. Select Trend Viewer Object Dialog Box

Se	lect Trend Viewer Object		×
	Name	Object ID	Device ID
ľ	TV_Office Setpoint_Present Value	1	
	TV_TLights_Present Value	3	
	TV_TLobby Setpoint_Present Value	2	
1			
	OK New	Cancel	Help
			nop



2. Click New. The Trend Viewer Member Editor displays (See Figure 368).

Trend Viewer Member Editor		×
Type: Analog Input MP580/581	Current Members: 1. 2. 3. 4. 5. 6.	
	<< Remove	
Property:	ОК	Cancel

Figure 368. Trend Viewer Member Editor

- 3. In the Type box, select an object type. Your selection determines which object name will display in the Name box.
- 4. Select an object name from the Name box. Your selection determines which properties will display in the Property box.
- 5. Select the properties from the Property box you want to add to the members list. Up to 10 members can reside in a Trend Viewer object.

Note:

Only properties that are already members of a harvested trend will appear in this list.

6. Click Add to add the selected properties to the Current Members list box. (see Figure 369).

Figure 369. Adding members to the Trend Viewer Member Editor

Trend Viewer Member Editor		×
Type: Analog Input MP50/501 Name: AHU-2vv AHU-3	Add >> Current Members: 1. AHU-2vv/Heat Output AHU-2vv/Mated Air Temperature 3. AHU-2vv/Mated Air Temperature AHU-2vv/Mated Air Temperature 4.dd >> 5. << Remove	
Property: Cool Output Discharge Air Temp Heat Output Mixed Air Temperature Outdoor Air Flow	OK Cancel	



7. Click OK. The Trend Viewer displays (see Figure 370).

Figure 370. Trend Viewer



Creating a Trend Viewer from a Property in a Graphic

Note:

You must be online to create a Trend Viewer through a property in a graphic.

- 1. Right-click on a property in graphic.
- 2. From the pop-up menu, click Create Trend Viewer.
- 3. A new Trend Viewer displays.



Opening a Trend Viewer

There are several ways you can open a Trend Viewer:

- The Setup menu
- A graphic (pop-up windows)
- The toolbar

Opening a Trend Viewer from the Setup Menu

1. From the Setup menu, select Trend Viewer (see Figure 371). The Select Trend Viewer Object dialog box displays (see Figure 372).

🍓 Tracer Summit - [Graph	ic - Auto	Insertion, BASD-AM5]	
🛄 <u>F</u> ile <u>C</u> onnect <u>S</u> tatus <u>V</u>	jew <u>G</u> o	S <u>e</u> tup <u>T</u> ools <u>W</u> indow <u>H</u> elp	
		<u>S</u> chedules Timed Override	
Area Name: Auto-Inser	tion	<u>G</u> raphics Editor Rep <u>o</u> rts Editor	
Operating Mode Heat/Cool Mode: Present Value:	Coo Occ	Area <u>V</u> AV Air Systems <u>H</u> eat Pump Loop Control <u>O</u> perator Display Operator <u>D</u> isplay Custom Screen	
Timed Override Status Time Remaining	Not . O	Inputs/Outputs	
Setpoints Active Setpoint:	72.(Calculations Task Manager Macroson Forwarding	

Figure 371. Opening a Trend Viewer from The Setup Menu

Figure 372. Select Trend Viewer Object dialog box



2. Select the trend object you want to display in the Trend Viewer.



3. Click OK. The Trend Viewer displays (seeFigure 373).

Figure 373. Trend Viewer



Opening a Trend Viewer from a Graphic

1. Right-click on a property in a graphic to display the pop-up menu (see Figure 374).







2. From the pop-up menu, select Open Trend Viewer. The Select Trend Viewer dialog displays (see Figure 375).

Note:

The Select Trend Viewer dialog box will *not* display if the property is a member of only one Trend Viewer object. In this case, the Trend Viewer will display immediately.

Figure 375. Select Trend Viewer Dialog Box

Select Trend Viewer	×
TV_AHU-3_Supply Fan Status	
TV_AHU-3_Supply Fan Status	
TV_AHU 2 Supply Fan Status	
OK Cancel	

- 3. From the drop-down list select a Trend Viewer.
- 4. Click OK. The Trend Viewer displays (see Figure 373 on page 435).



Opening a Trend Viewer from the Toolbar

- 1. Click the Harvested Trend Viewer toolbar icon in the Tracer Summit task bar (see Figure 376). The Select Trend Viewer Object dialog box displays.
- 2. Click the trend viewer object you want to display.
- 3. Click OK. The Trend Viewer displays (see Figure 373 on page 435).

Figure 376. Tracer Summit Task Bar

Harvested Trend Viewer Icon

Tracer Summit - [Graphic - Tracer	Summit, Tracer Summit J	
📃 Eile Connect Status View 🦢 S	i <u>e</u> tup <u>T</u> ools <u>W</u> indow <u>H</u> elp	_ 8 ×
	Are All In BASD-AMS	
	- TRANK	
	TRACER SUMMIT*	
	Site Name: Tracer Summit	
	MyTraneControls.com	
		Y
For Help, press F1	3/8/2006 11:49 AM BCU User: V17 Site: BASD-AMS	



Saving a New Trend Viewer

1. After the new Trend Viewer displays, click Save. The New Trending Names dialog box displays (see Figure 377).

Figure 377. The New Trending Names Dialog Box

New Trending Names	×
New Trend Viewer Name:	TV_Air Handler_Present Value
New Trend Name:	Trend_Air Handler_Present Value
Sampling Interval:	1 Minute
	Cancel

- 2. In the New Trend Viewer Name field you can type in a name for the Trend Viewer object, or keep the default name.
- 3. In the New Trend Name field, you can type in a name of the new trend object or you can keep the default name.
- 4. In the Sampling Interval drop-down list, select how fast you want the trend object to collect samples. The default time is one minute.
- 5. Click OK.



Adding to a Trend Viewer

You can add a property to a Trend Viewer by clicking on a property in a graphic.

- 1. Right-click on a property in a graphic. A pop-up menu displays.
- 2. From the pop-up menu, select Add to Trend Viewer. The Select Trend Viewer dialog displays, which lists all of the Trend Viewer objects that the property is not a member of (see Figure 378).

Figure 378. Select Trend Viewer Dialog Box

Select Trend Viewer	×
TV AHU-3 Supply Fan Status	
TV_AHU-3_Supply Fan Status	
TV_AHU 2 Supply Fan Status	
OK Cancel	

- 3. Select the Trend Viewer object you want to add the property to.
- 4. Click OK. The Trend Viewer displays (see Figure 373 on page 435).
- 5. Click Close. The Save Changes dialog box displays.
- 6. Click Yes.



Working with the Trend Viewer

The Trend Viewer plots trend data on a graph. When you are online, data is displayed in the live mode with the ability to show historical data. When you are offline, data is viewed in the historical mode only.

The Trend Viewer consists of three main components (see Figure 379):

- The "Trend Viewer Toolbar" on page 441
- The "Trend Viewer Chart" on page 442
- The "Trend Viewer Main Control Buttons" on page 445

Figure 379. Components of the Trend Viewer Window





Trend Viewer Toolbar

Table 22 describes the functions of the buttons on the Trend Viewer toolbar.



Table 22. Trend Viewer Toolbar Functions

Button ¹	Description
Ŧ	The scroll (axes) button lets you move the x or y-axis. Drag the pointing finger horizontally to move the x-axis and vertically to move the y-axis.
ŝ	The zoom (axes) button lets you compress or expand the display range of the x or y-axis. Drag the arrow hori- zontally along the x-axis and vertically along the y-axis.
Ø	The zoom out all axes button lets you zoom out both the x and y-axes. Each time you click this button the axes zooms out two times its previous view.
Ð	The zoom in all axes button lets you zoom in both the x and y-axes. Each time you click this button the axes zooms in two times its previous view.
	The select button lets you see details related to the icons and markers in the Trend Viewer chart. Move the pointer over the icon and click the pointing finger to see details.
	The zoom box button lets you zoom in anywhere in the chart. Click this button and place the arrow at the point where you want to zoom in. Then, click and drag the arrow.
F [4	The tracer line button lets you display a vertical line in the chart to see the date, time stamp, and value for a point. Click on a point in the legend or click on a different plot in the chart to change which plot the vertical line is showing data for.
	The save to file button lets you save the current view to a BMP, JPEG, or PNG formatted file. To save the data to a comma separated value file (CSV), select this format from the File menu.*
6	The print button lets you print the current graphical view to a printer.
	* A CSV file is a basic industry format used for opening up a text file into any application (for example, Microsoft Excel).
	¹ The selected button transforms into a pointing finger when you hover over an object in the Trend Viewer. When clicked on, the object reveals further details.



Trend Viewer Chart

A Trend Viewer chart consists of the legend, icons, data markers, and grid (see Figure 380).

Figure 380. Trend Viewer Chart





Viewing the Legend

The legend represents members of a trend object. They are displayed in a Trend Viewer chart as data markers.

- 1. Right-click on a member of the legend. The Settings dialog box displays (see Figure 381 on page 443).
- 2. If desired, make changes using the checkboxes.
- 3. Click OK.

Note:

You can also hide or show the legend by selecting Hide/View Legend from the Edit menu.

Changing the Legend Member Name

You can change the name of the legend member by using the Settings Dialog box.

- 1. In the Display Name field, delete the current legend member name (see Figure 381 on page 443).
- 2. Type in a new legend member name.
- 3. Click OK.

Note:

The Display Name field is disabled when the audit trail is used on the system.

Figure 381. The Settings Dialog Box





lcons

Icons represent event log activity such as alarms, manual overrides, and events.

• Click on the icon to display a dialog box that contains details about the event (see Figure 382).

Figure 382. Event Dialog Box (manual override example)

Summit	×
2/9/2006 4:06:33 PM Analog Control Office Setpoint 66:00 Degrees Fahrenheit Priority= 4 -User - High by TRACER	
OK	

Changing Data Marker Settings

Data markers are visual representations of legend members within the trend object. Each data marker is displayed as a different color inside the chart. To change the color:

- 1. Right-click on a data marker. The Settings dialog box displays (see Figure 381 on page 443).
- 2. Click on the Tool Palette.
- 3. The Color Palette dialog box opens. Select a color.
- 4. Click OK. The data marker displays in the selected color.

Grid

The grid is made up of gridlines that help you read the chart. You can choose to view or hide the grid.

- 1. Right-click in the chart's background. A pop-up menu displays.
- 2. Click on Hide Grid to hide the gridlines, or click on View Grid to show the gridlines.


Trend Viewer Main Control Buttons

The Trend Viewer main control buttons allow you to control and adjust the chart. It puts the chart into live mode and allows you to select the date range, move the chart forward or backward, and save current and new trend objects. Table 23 describes the functions of the Trend Viewer main control buttons.

lose Save Open Another Help
C

Table 23. Functions of the Trend Viewer Main Control Buttons

Button	Description		
44	The back button moves the displayed data backward half the displayed date range. (The button is disabled if the view is in live mode).		
	The play button puts the chart into live mode and allows you to track the data as it enters the database source for existing members. For new members, the data is plotted every 30 seconds.		
11	The pause mode button temporarily stops the chart from updating with new data. This button only displays after the play button has been depressed.		
44	The forward button moves the displayed data forward half the displayed date range. (This button is disabled if the user is in live mode).		
Select Range	The Select Range button displays the Date Range to Display dialog box (see Figure 383 on page 446). Use this dialog to select the date-range of data to load into the chart.		
Close	The Close button exits the Trend Viewer and returns to the previous window.		
Save	The Save button saves changes made in the Trend Viewer. If the point cannot be saved because communi- cation to the device is down, reconnect and then try again.		
Open Anothe	The Open Another button allows you to view another Trend Viewer object without closing the existing one.		
Help	Click on the Help button for more information about the Trend Viewer.		





Selecting a Date Range

The Date Range to Display dialog box displays when you click on the Select Range control button (see Figure 383).

The Available Range field shows the range of time that data is available for members of the Trend Viewer.

- 1. In the From field select a date and time from the drop-down lists.
- 2. In the To field select a date and time from the drop-down lists.
- 3. Click OK. The Trend Viewer displays the data from the selected data range.

Figure 383. The Date Range to Display Dialog Box

Dat	e Range t	o Display		×
	Available	e Range		
	From	02-Nov-05	5 8:32:00 AM	
	To	10-Jan-06	5 11:54:50 AM	
	From			
	02-No	v-05 💌	12:00:00 AM *	
	To	v-05 💌	12:00:00 AM *	
	(ок		Cancel	l



Historical Trends in the Audit Trail Database

Historical trending is used to display data from the Audit Trail database in a Trend Viewer. It is enabled in the Trend editor by checking the Enable Historical Trending checkbox.

Note:

Historical trending is only available if you are registered to use either the Tracer Summit CCS or Enterprise packages. For more information about historical trends, refer to the *Tracer Summit CCS System Programming* guide.

Viewing Historical Trends

1. From the Status menu, Select the Audit Trail Trend Viewer. The Select Historical Trends dialog box displays (see Figure 384).

Note:

You must be online to use the Audit Trail.

Figure 384. Select Historical Trends Dialog Box

Database Source	Select Historical Trends
Audit Trail SQL Database Archived Audit Trail SQL Database Previously Archived Audit Trail SQL Database	CCS AIP alarm units enum (AIP Alarm_Units) CCS AOP1 (AOP-001_Present Value) CCS AOP4 (AOP-004_Present Value) CCS1 (AIP Alarm_Present Value) CCS2 (AOP Alarm_Present Value)
Range of Available Historical Data From 16-Dec-05 4:30:00 PM To 11-Jan-06 1:52:00 PM	
Select Range	
To 11-Jan -06 💌 1:49:50 PM 🕂	



- 2. In the Database Source list, select a database:
 - Audit Trail SQL Database—displays current data
 - Archived Audit Trail SQL Database-displays historical data
 - Previously Archived Audit Trail SQL Database—displays historical data.
- 3. In the Select Historical Trends list, select up to 10 historical trends.
- 4. In the Select Range drop-down list, specify a date and time range you want displayed in the Trend Viewer.
- 5. Click OK. The Trend Viewer displays.

•



Chapter 29 Trending Data

A trend (or trend object) is a historical sampling of data stored from specific objects and properties taken at a specified sampling frequency. Trends can be stored in the BCU or as an option on the PC workstation. To upload trends from a BCU, you can run a standard or custom trend report (see Chapter 32, "Designing Reports"). These trends provide information necessary to make decisions about building management issues, including utility costs, equipment efficiency, and tenant billings.

Use the Trend editor to define the data you want sampled and stored in the BCU. This trend information can then be compiled and presented in a trend report at a later time.

Each trend object contains a list of members. These members are the properties that the trend will sample. You set up and maintain the list of members using the Trend editor.

With Tracer Summit's Trend editor, you can:

- Create a new trend object or edit an existing one
- Add or remove members for a trend object
- Determine the trend interval
- Determine how or when sampling will start and stop
- Delay sampling during startup to allow the system to stabilize before trending occurs
- Specify the number of samples you will allow the BCU to store in memory, and clear any accumulated samples
- Set up a trigger and notification class for a snapshot, as well as reset a snapshot after it has been taken
- Harvest trends for the Trend Viewer or Audit Trail databases
- Set up security classes for a trend object

Note:

Trends can be easily viewed and created in Tracer Summit by right-clicking on a graphic and creating a Trend Viewer object. The trends are then viewed in graphical format. (See Chapter 28, "Using the Trend Viewer.")



Accessing the Trend Editor

1. From the Setup menu, select Trends. The Select Trend dialog box displays (see Figure 385).

Figure 385. Select Trend Dialog Box

Select Trend		×
Name Auditorium Temperatures Chiller Performance Critical Room Temperatures Manufacturing Temperatures Office CO2 Levels Tennant Energy Usage		
OK New	Cancel	Help

- 2. Select the name of the trend you want to edit.
- 3. Click OK. The Trend editor displays (see Figure 386.)

Figure 386. Trend Editor

Status Members	Setup Classes
Trend Name:	Auditorium Temperatures
- Sampling Status	
Sampling Enabled:	Yes Clear Samples Report
Snapshot Taken:	No Reset Snapshot
 ┌─ Trend Setup	
Interval:	1 Hour
Number of Samples:	104
Number of Members:	4
Capacity:	99 %
BCU	
Name:	Administration BCU
Communications:	BCU Online



Creating a New Trend

To create a new trend, you complete these tasks:

- Set security access for the trend (see "Setting Security Access for a Trend" on page 458)
- Open and name the new trend object (as described in this section)
- Add members to the trend object (see "Setting the Members of a Trend" on page 453)
- Set up the trend, including determining when sampling will start and stop (see "Setting Up Trend Sampling" on page 454)
- Save the trend object (see "Saving a Trend Object to a BCU" on page 460)

To create a new trend:

1. From the Setup menu, select Trends. The Select Trend dialog box displays (see Figure 387).

Figure 387. Select Trend Dialog Box

S	elect Trend 🔀
S	Name Auditorium Temperatures Chiller Performance Critical Room Temperatures Manufacturing Temperatures Office C02 Levels Tennant Energy Usage
	OK New Cancel Help

2. Click New. The New Trend Name dialog box displays (see Figure 388).

Figure 388. New Trend Name Dialog Box

Ne w Trend Name			×
Trend Name:			
	ОК	Cancel	Help

3. In the Trend Name field, enter the name you want to give this trend. The name can be up to 32 characters long.



4. Click OK. The Status screen of the Trend editor displays (see Figure 389).

Figure 389. Trend Editor-New Trend

Status Members S	etup	Classes
Trend Name:	Audit	corium Temperatures
Sampling Status		
Sampling Enabled:	???	Clear Samples Report
Snapshot Taken:	???	Reset Snapshot
Trend Setup		
Interval:	30	Minutes
Number of Samples:	1	
Number of Members:	0	
Capacity:	0	%
-BCU		
Name:		
Communications:		

5. Complete the remaining trend information as described in the following sections.



Status Type: Analo

Setting the Members of a Trend

Members are sampled properties that will be monitored by a trend object. The Members screen of the Trend editor allows you to add, delete and view members of the trend object.

To set the members of a trend:

1. From the Trend editor, click the Members tab (see Figure 390).

Members Setup Classes		
	Member List:	
) Input		Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog In[5] Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog Variable[1]
		Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog In[3] Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog Out[1]
		Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog Out[2]
put percent		
utput percent		

Figure 390. Trend Editor Members Screen

Name: Name 501 input percent 501 output percent AHU-1 Discharge Temperature AHU-1 Space Temperature AHU-1 Space Temperature Add >> 	Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog In[3] Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog Out[1] Universal PCM (UPCM): UPCM 1 - AHU-1 / Analog Out[2]	
Type of Property		
Show All << Remove All		
Property:		
Alarm On High Limit Alarm On Low Limit Change Of State Time Enabled Event State Multiplier Offset Present Value	The sample size is set to 88 therefore 5 is the maximum number of members allowed.	
Harvest Data for this trend		

- 2. In the Type list box, select the object type for the object whose property you want this trend to sample. The Name list box automatically displays a list of object names for this object type.
- 3. In the Name list box, select the name of the object whose property you want this trend to sample.
- 4. In the Type of Property list box, select the type of property you want this trend to sample. This list is filtered to show only properties of the type in the Property list box.
- 5. In the Property list box, select the property then click Add to add it to the Member List box.
- 6. Repeat steps 2–5 above to add other properties to the list of members, as necessary.



7. To remove a member from the Member List, select the member in the Member List box, then click Remove to delete it from the list. Or, click Remove All to clear the entire list.

Note:

Trend objects may contain up to 64 members. Because of BCU memory limitations, however, the more members you include, the fewer samples you can take. If taking large numbers of samples is a priority for you, consider creating multiple Trend objects with limited membership to accomplish this. You can later combine the Trend objects in a single report for comparison. (See Table 24 on page 455 to understand the relationship between number of members and number of possible samples.)

Setting Up Trend Sampling

When setting up a trend, you need to configure the sampling parameters and sampling interval of the trend object. You can set up trend sampling at the Trend editor's Setup screen. At this screen you can also change the name of the trend.

To set up trend sampling:

1. From the Trend editor, click the Setup tab (see Figure 391).

Figure 391. Trend Editor Setup Screen

Status Members Setup Classes	
Trend Name: Temperature	
C Sampling Setup	
Sampling Enable: Trabled Trables On Delay for Referencer:	
Number of Samples:	
Sampling Interval	
Interval: 30 Minutes	

- 2. If you want to change the trend's name, in the Trend Name field, enter a new name for this trend.
- 3. In the Sampling Enable referencer edit control, select a method for determining whether sampling should occur. Select Enabled to turn on sampling manually. Select Disabled to turn off sampling manually.



Select Referencer if you want sampling to be activated or deactivated by the state of a referenced binary property.

- 4. If you selected Referencer in the Sampling Enable field, then the On Delay for Referencer field becomes active. Type the minimum number of minutes the binary property must be in On state before sampling occurs. You can enter a number between 0 and 60. This feature allows the system to stabilize before trending occurs.
- 5. In the Number of Samples field, select the number of samples you want the BCU to retain in its memory. This number is limited by the number of members you want the trend to sample. (See Table 24 to understand the relationship between the number of members in this trend and the number of samples it is possible to store.)

Table 24. Limits on Numbers of Samples Stored in BCU Memory

Number of Members	Maximum Samples Stored
1	244
2	169
3	129
4	104
5	88
6	75
7	66
8	59
9	53
10	48
11	44
12	41
13	38
14	36
15	33
16	31
17	30
18	28
19	27
20	25
21	24
22	23
23	22
24	21
25–26	20
27	19
28–29	18



Number of Members	Maximum Samples Stored
30–31	17
32–33	16
34–35	15
36–38	14
39–41	13
42–44	12
45–48	11
49–53	10
54–59	9
60–64	8

Table 24. Limits on Numbers of Samples Stored in BCU Memory

- 6. In the Interval field, select the frequency with which you want the members to be sampled. You can choose 1 Minute, 5 Minutes, 15 Minutes, 1 Hour, 8 Hours, 1 Day, 7 Days, or Billing Period.
- 7. If you selected 8 Hours or 1 Day in the Interval field, the Collect Sample at Time field displays. Enter in this field the time of day you want sampling to begin.
- 8. If you selected 7 Days in the Interval field, the Collect Sample at Time field and the Collect Sample on Day field are displayed. Complete these fields with the time of day you want sampling to begin, and the day of the week you want sampling to begin, respectively.
- 9. If you selected Billing Period in the Interval field, the following buttons are displayed:
 - Use Last Day of Month, which directs the system to sample at 11:59 p.m. on the last day of every month.
 - Define Day of Month, which directs the system to sample at 11:59 p.m. on the day of the month you specify in the related field.
 - Use Billing Periods.

The last button is available only if you have set up billing periods in Site Configuration. You can select to sample at the end of any one of up to three billing periods, which you specify in the related field.



Harvesting Trend Objects for the Trend Viewer or the Audit Trail Databases

Use the Trend editor to set up a trend as a harvesting or historical trend object. These trends can be easily viewed in Tracer Summit by right-clicking on a graphic and creating a Trend Viewer object. The trends are then viewed in graphical format in the Trend Viewer. (See Chapter 28, "Using the Trend Viewer.")

To set up harvesting and historical trends:

- 1. From the Trend editor, click the Members tab (see Figure 392).
 - For the Trend Viewer, check the Harvest Data for this trend dialog box.
 - For Audit Trail databases, check the Enable Historical Trending box (not shown). This only applies to Tracer CCS and Enterprise users.
- 2. Click Save.



Figure 392. Trend Editor Members Screen



Setting Security Access for a Trend

The Trend editor's Classes screen allows you to define the security class setup for this trend. You also set up trend snapshots on this screen.

To set security access:

1. From the Trend editor, click the Classes tab to display the Classes screen (see Figure 393).

Figure 393. Trend Editor Classes Screen

Status Memi	oers	Setup	Classes				
Enable Sna	apshot						
Trigger Or	Ċ						
Snapshot	Notificati	ion Class:	No Notifica	tion	 7		
Security Clas	ses						

- 2. If you wish to use the Snapshot Trends feature, click Enable Snapshot. When a snapshot is taken, sampling is disabled until the snapshot is reset. This allows you to analyze the data leading up to the point in time when the snapshot occurred.
- 3. If you selected Enable Snapshot, the Trigger On referencer edit control becomes active. In this field, specify the binary input referencer or event state of an analog input object that serves as a trigger for a snapshot to be taken. If you reference a binary property, that property is monitored every minute, and if the state transitions from 0 to 1 for more than two minutes, a snapshot is triggered.

If you reference the event state of an analog input object, that property is monitored every minute. If the analog input object goes into a Low Alarm or High Alarm for more than two minutes, a snapshot is triggered (make sure the analog input object is not in an alarm state when you initially assign the referencer). If you don't make a selection here, no snapshot is taken.

- 4. If you selected Enable Snapshot, the Snapshot Notification Class field becomes active. In this field, specify which Event Class will receive a message of the snapshot occurrence when a snapshot actually happens.
- 5. Click Security Classes to display the Change Security Classes dialog box (see Figure 394 on page 459).



lass	Class Name	Access			
1	System Operator	V			
2	Day Operator	•			
3	Night Operator				
4	Security				
5	Chiller Plant				
6	Administration				
7	Manufacturing				
8	ICS University 🔽				
9	Engineering	Engineering 🔽 🔽			
10	Applications				
11	Marketing				
12	Finance				
13	Training				
14	Product Commun.				
15	Human Resources	Human Resources			
16	Production				

Figure 394. Change Security Classes Dialog Box

- 6. For each security class, click to insert a check mark if you want users of this class to have security access to this trend object.
- 7. Click OK to return to the Classes screen.

Viewing the Status Screen

The Trend editor's Status screen displays information about past and present data sampling, and provides some controls for managing this data. This screen displays when you first access the Trend editor.

To view the status screen:

- 1. From the Trend editor, click the Status tab to display the Status screen (see Figure 386 on page 450).
- 2. View the Sampling Enabled field. Yes indicates that the system collects samples regularly for this trend. (Click Report to view the samples.)
- 3. Click Clear Samples if you want to erase all accumulated data for this trend.
- 4. View the Snapshot Taken field. Yes indicates that a change in state of the referenced property triggered a snapshot, and that sampling has been suspended.
- 5. Click Reset Snapshot to resume sampling and to prepare the system for the next snapshot event. This button is available only if the Snapshot Taken field contains a Yes.
- 6. View the remaining fields on this screen. These fields display:
 - How frequently this trend is currently set up to take samples, the number of samples stored in BCU memory

Trending Data



- The current number of members
- The percentage of BCU memory allocated to this trend object that sample storage currently occupies

You can also identify the BCU name and the status of communications.

7. Click Report to generate a standard trend report automatically.

Saving a Trend Object to a BCU

To access trends with the Trend editor or to save trends, Tracer Summit must be communicating with a BCU.

New or existing trend objects cannot be saved to a BCU unless that BCU is currently communicating with the PC Workstation. You can access an existing trend to edit it only when your PC Workstation is online with the BCU where the trend is saved. For new trends, you can access the editor if there is at least one BCU online.

Archiving Trend Data

The BCU that is running the trend will not automatically archive trend data to a PC Workstation's hard drive. To accomplish this, you must use Tracer Summit software to access the data accumulated in the BCU and archive it to the workstation's hard drive.

To manually archive trend data to the PC Workstation:

- 1. Access the Trend editor Status screen for the trend object whose data you want to archive.
- 2. Click Report to access the Tracer Summit Report Viewer and automatically run the standard trend report.
- 3. After the report has been run, you can save it to the workstation's hard drive.

To automatically archive trend data to the PC Workstation:

• See the section about scheduling reports in Chapter 32, "Designing Reports."



Chapter 30 Using the Graphics Editor

One of the most powerful tools available in Tracer Summit for Windows is the Graphics editor, which allows you to create and customize graphics (also called *graphic objects*) for your system with specialized tools and menus. Graphics in Tracer Summit are the primary way in which daily operators check system status and perform operator overrides.

Operators rely on the graphics you create to display information quickly and clearly. You can create graphics to:

- Provide real-time status information about a particular object, or about the system
- Give users the ability to change an object's state or setpoint
- Display an animated image

As an advanced user, you can build and adapt graphics to be displayed when an item is clicked on the navigation tree, when a target is clicked within a graphic, and when the Graphic button is clicked in a UCM editor. Using Tracer Summit's Graphics editor, you can:

- Edit the standard graphics provided with Tracer Summit to use on one or more sites as custom graphics
- Create new graphics
- Customize the background, font, size and appearance of fields on a graphic, as well as the background of the graphic itself
- Create expanded messages
- Create runtime graphs for either live properties or trended objects
- Create links to external sources

For descriptions and information about specific fields, toolbar buttons, dialog boxes, and palette buttons in the Graphics editor, see Tracer Summit online help.



About Graphics

In Tracer Summit, you can create a graphic by adding graphic elements, such as text (static or dynamic), images, target links to other graphics, and controls, to a background image. A background image might be a solid color or a floor plan of a site. You place layers of these graphic elements (also called *fields*) on the background to create a composite graphic. You can also layer an animated image on top of another image, or place a static text label on top of a control. Target fields layer over other images to create links to other graphic objects. You can move intersecting layers of images and other fields behind or in front of other layers. Figure 395 shows an example graphic.

Note:

- A graphic is linked to an object by its name. If you change the name of an object that is referenced by a field on a graphic, the graphic will be unable to display data for the object. Instead, "Object Unavailable" will be displayed.
- All references to Windows folder names in this chapter refer to subdirectories of the location where Tracer Summit is installed on your PC Workstation, which is typically C:\Program Files\Tracer Summit. Subdirectories within this folder include Graphics\Standard, Graphics\Custom and Graphics\site name (where site name is the name of the current site).







Accessing the Graphics Editor

- 1. Display the graphic you want to edit.
- 2. From the Setup menu, select Graphics editor. The displayed graphic view is transformed.

Using the Graphics Editor Tools

When the Graphics editor is open, two groups of tools display: a graphics toolbar and a floating tool palette that you can move around the screen using the mouse. Figure 396 shows these tools.

Figure 396. Graphics Editor Toolbar and Tool Palette



The Graphics editor palette allows you to select from among 17 types of fields to insert. Table 25 on page 464 shows the types of fields that are available for insertion and configuration. When you click a palette button or select a field for editing, an editor displays that provides configuration options for the corresponding field type. More information about these editors is available in Tracer Summit online help.

Use the graphical status control to create geometric shapes or designs (such as a thermometer) and display them on an analog property.



Field Type	Field Name	Palette Button	Description
Status Fields	Status text	Ŀ	Inserts text drawn from the property you specify.
	Analog in 5 color	5	Inserts a field that shows the viewer a color-coded update of the alarm state of an analog property you specify.
	Binary	4	Inserts text drawn from the binary property you specify.
	Animation	H	Inserts images to create animation from multiple image files that run when a binary or an analog property is in a state you specify.
	Graphical Status		Inserts geometric shapes or designs (such as a thermome- ter) on an analog property. In runtime view, users can add the maximum and minimum values and a caption.
Control Fields	Override control	<i>5</i> 7	Inserts a button with a text label you provide. In the runtime view, clicking the resulting button displays the Override dialog box, allowing users to alter the system via the graphic.
	Setpoint control	[23]	Inserts a numeric text field. In the runtime view, the field allows users to change settings of numerical data.
	Binary Check Box control		Inserts an unchecked check box. In the runtime view, users can check the check box to change the state of the property you specify.
	Selection List control		Inserts a drop-down list that contains entries linked to a property. In the runtime view, users can select from this list to change the state of the associated property.
Text or Image Fields	Static text	Α	Inserts text that you specify.
	Image		Inserts a graphic image (any BMP, GIF, or JPG file).
	AVI movie	-CP-	Inserts an AVI movie that runs for as long as the graphic is displayed or until the movie ends.

Table 25. Graphic Field Types and Palette Buttons



Field Type	Field Name	Palette Button	Description
Target Fields	Target text	4	Inserts a line of text that links to another graphic.
	Target image		Inserts a graphic image that links to another graphic.
	Target button		Inserts a button that links to another graphic.
	Target External		Inserts a button that links to a Web site, a file, or an applica- tion outside of Tracer Summit.
Graph field	Graphing	¥	Inserts a graph on the graphic.
Cursor	Default cursor	2	Changes the cursor from an insertion point back to a selec- tion cursor.

Table 25. Graphic Field Types and Palette Buttons (Continued)



Using the Graphics Pop-Up Menu

In the Graphics editor, you can select options from the menu bar or select options from a pop-up menu. To display a pop-up menu, right-click on a graphic field or on the graphic background. You can then click a selection.

If the mouse button is positioned over a field, the pop-up menu items are specific to the field. Otherwise, the pop-up menu is specific to the entire graphic.

Using the Grid to Organize Fields

When you edit a graphic in the Graphics editor, you can display a default grid pattern of colored dots to assist in aligning graphic elements. You can change the default settings of grid color (black) and spacing in pixels (15). When the grid is on, an optional Snap to Grid feature automatically aligns fields to the grid when you insert or move them.

Displaying the Grid on a Graphic

- 1. With the graphic displayed in the Graphics editor, from the Layout menu, select Grid Options. The Grid Options sub-menu displays.
- 2. Click the On option to display the grid, which appears as a matrix of dots (see Figure 397). To hide the grid, click the On option again.

When you save the graphic, the grid settings are saved with it.

Figure 397. Graphic with Grid On





Changing the Grid Color on a Graphic

The Graphics editor automatically chooses a contrasting grid color where the grid overlaps any image.

To select a different color:

- 1. With the graphic displayed in the Graphics editor, make sure the grid is turned on (see "Displaying the Grid on a Graphic" on page 466).
- 2. From the Layout menu, click Grid Options. The Grid Options submenu displays.
- 3. Select Color and from the Color sub-menu, select Red, Blue, Green or Black.

The grid options are saved with each graphic. The next time this graphic is edited with the grid on, selections default to the same grid options.

Using the Snap To Grid Feature on a Graphic

The Graphics editor automatically enables the Snap To Grid feature when the grid is turned on. This feature causes the upper left-hand corner of any field that is added to or moved on the graphic to be aligned with the nearest upper left-hand grid intersection.

To disable the feature:

- 1. With the graphic displayed in the Graphics editor, make sure the grid is turned on (see "Displaying the Grid on a Graphic" on page 466).
- 2. From the Layout menu, select Grid Options to display the Grid Options sub-menu.
- 3. Click Snap To Grid.

To enable the feature:

• Repeat the steps above. When you click Snap To Grid and it has no check mark, Tracer Summit inserts a check mark and re-enables the feature.

The grid options are saved with each graphic. The next time this graphic is edited with the grid on, the Snap To Grid selection defaults to the setting you chose.

Configuring Grid Spacing

- 1. With the graphic displayed in the Graphics editor, make sure the grid is turned on (see "Displaying the Grid on a Graphic" on page 466.)
- 2. From the Layout menu, select Grid Options to display the Grid Options sub-menu.
- 3. Click Grid Spacing. The Grid Spacing dialog box displays (see Figure 398 on page 468).



Figure 398. Grid Spacing Dialog Box

Grid Spacing	<
Grid Spacing (in pixels): 15	
OK. Cancel	

- 4. Enter a number between 2 and 100. This is the number of pixels between intersection points on the grid.
- 5. Click OK to display the Graphics editor and the grid with the spacing you specified.

The grid configuration is saved with each graphic. The next time this graphic is edited with the grid on, it defaults to the configuration you set up.

Editing Graphic Properties

While you are in the Graphics editor, you can edit the following graphic properties: the background image of the graphic, the security access to the graphic, and the graphic's context object (filters that set the site name, object type and context of the object when it is launched). All these properties are edited at the Graphic Properties dialog box. You can also view the location and HTML file name of the graphic.

Changing the Background of a Graphic

- 1. Display the graphic whose background you want to change in the Graphics editor. Do *not* select any fields.
- 2. From the Edit menu, select Properties. The Graphic Properties dialog box displays (see Figure 399 on page 469).

Note:

While you are in the Graphics editor, you can also access the Graphic Properties dialog box from the graphics pop-up menu. Move the mouse cursor so that it is not positioned over any fields, then right-click to display the pop-up menu and select Edit Properties.



araphic Properties	×
Background Image Gra	aphic Information Context Object
Image regional National Natio	me: N_BAK.GIF Browse
Image Sample:	
	OK Cancel Help

Figure 399. Graphic Properties Dialog Box-Background Image Screen

3. Click Browse to display the Locate Image dialog box (see Figure 400).

Figure 400. Locate Image Dialog Box

Locate Image	×
Image Location Global Images Current Site Images	Standard C Custom Site Name:
Image Files: ABSORBER_DIRECTFIRED.GIF ABSORBER_SINGLESTAGE.GIF ABSORBER_TWOSTAGE.GIF BLOWERCOIL_GIF BLOWERCOIL_4PIPE.GIF BOILER.GIF CENTRIFUGAL_2STAGE.GIF CENTRIFUGAL_3STAGE.GIF CENTRIFUGAL_DUALCOMP.GIF CENTRIFUGAL_GEARDRIVEN.GIF	Sample:
IF IPG IBMP	Path: c:\program files\tracer

- 4. Select an image (see "Using the Locate Image Dialog Box" below).
- 5. Click OK to return to the Graphic Properties dialog box.
- 6. Click OK to return to the Graphics editor window.



Using the Locate Image Dialog Box

- 1. Click Browse in the Graphic Properties dialog box or in the Setup screen of the Insert Image dialog box. The Locate Image dialog box displays (see Figure 400).
- 2. Select either Global Images or Current Site Images. If you select Global Images, you can select an image available for the system. If you select Current Site images, you can select only an image associated with this particular site where you are logged in. The Image Files field lists graphics according to the current check box selections.
- 3. If you selected Global Images, select either Standard or Custom to specify the type of images you want this dialog box to list. Standard images are included with Tracer Summit. Custom images are created by editing a standard image or by starting with a blank image. Images specified as Global Images are available to all sites on the system.
- 4. Click the GIF, JPG, or BMP check box to display a particular graphic file type in the Image Files field.
- 5. Select the image file name you want. The Sample field displays a preview of the image. The Path text line identifies its location.
- 6. Click OK to insert the selected image in the current graphic.

Note:

If images are not displaying properly in the Graphics editor, your workstation's Display settings in Windows might need correction. Your workstation must be set up for a minimum of 16bit colors. To check display settings, click the Windows Start button. Click Settings, then Control Panel. From the Control Panel, select Display.

Viewing a Graphic's File Name and Location

Sometimes you need to know the file name and location of a graphic, if, for example, you want to copy or delete the graphic using Windows Explorer.

To view a graphic's file name and location:

- 1. Display the graphic in the Graphics editor. Make sure no fields are selected.
- 2. From the Edit menu, select Properties. The Graphic Properties dialog box displays.
- 3. Click the Graphic Information tab (see Figure 401). The graphic's file name and location displays in the HTML Path field.



Graphic Properties			X
Background Image Graphic Information Context Obje	et]		
HTML Path: c:\program files\tracer summit\graphics\tracer summit\gra	ane\findept.	htm	
Security Ulasses			
	ок	Cancel	Help

Figure 401. Graphic Properties Dialog Box-Graphic Information Screen

Setting Up Security for a Graphic

You can specify whether users have access to a graphic.

To set up security for a graphic:

- 1. Display the graphic in the Graphics editor. Make sure no fields are selected.
- 2. From the Edit menu, select Properties. The Graphic Properties dialog box displays.
- 3. Click the Graphic Information tab (see Figure 402).

Figure 402. Graphic Properties Dialog Box-Graphic Information Screen

Graphic Properties					×
Background Image	Graphic Information	Context 0	bject		
HTML Path: c:\pr	ogram files\tracer sumr	mit\graphics	\trane\findept.l	htm	
Consult Classes	-				
			ок (Cancel	Help



4. Click the Security Classes button. The Change Security Classes dialog box displays (see Figure 403).

Change Security Classes Access Class Class Name 1 System Operator $\mathbf{\nabla}$ ☑ 2 Day Operator P Night Operator 3 Security 4 বেরেরেরের 5 Chiller Plant 6 Administration Manufacturing 8 ICS University 9 Engineering 10 Applications Marketing 11 12 Finance <u>v</u> 13 Training 14 Product Commun ☑ 15 Human Resources V 16 Production 0K Cancel Help

Figure 403. Change Security Classes Dialog Box

- 5. Click the Access field next to each class to grant or deny access. A check in the field grants access. No check denies access.
- 6. Click OK to display the Classes screen.
- 7. Click Save.

Selecting the Context Object for a Graphic

When you create a new graphic object, you may give the graphic a context. For example, if you have created a graphic of a floor plan, you might specify its site and the area object that controls the floor displayed by the graphic. When the floor plan graphic is displayed, the context allows the user to display the appropriate schedule or report for the area entered as the current object of the floor plan.

Note:

The context object also will be used to fill in template fields on a graphic when it is displayed. For more information on template graphics, see "Creating and Modifying Graphics with Template Fields" on page 510.

To select the context object:

- 1. Display the graphic in the Graphics editor. Make sure no fields are selected.
- 2. From the Edit menu, select Properties. The Graphic Properties dialog box displays.
- 3. Click the Context Object tab (see Figure 404).



Graphic Properties					x
Background Image	Graphic Information	Context Object	st]		
Site Name:	(default)			_	
Object Type:	<default></default>			-	
Object Name:	<default></default>			•	
			пк	Cancel	Help
			UK I	Lancel	Неір

Figure 404. Graphic Properties Dialog Box – Context Object Screen

- 4. In the Site Name field, select the site. To select the active site, select <default>.
 - If you select <default> for the site name, the Object Type and Object Name fields display <default> also.
 - If you choose a specific site name, the Object Type and Object Name fields display the first type and name defined on the site.
- 5. In the Object Type field, select from the list of object types defined for the site you specified.
- 6. In the Object Name field, select from the list of objects defined for the site and object type you specified.
- 7. Click OK.



Creating and Editing Graphic Fields

You may want to customize graphic objects for specific sites by adding fields, changing the name displayed for fields, or by moving fields to different locations on the graphic background. (The changes are not saved to the standard graphic; instead, your edited graphic is saved in the Graphics/ Custom folder.)

Inserting a Graphic Field

- 1. In the Graphics editor, display the graphic in which you want to insert the field.
- 2. Click the palette button associated with the type of field you want to insert (see Table 25 on page 464). The cursor turns into an insert prompt (see Figure 405).

Figure 405. Insert Prompt

+

3. Position the insert prompt at the location on the graphic where you want to insert the field. Drag the prompt to define the shape and size you want the field to be. The field is inserted and an editor appropriate for the field type you selected displays.

Note:

For images and AVI movies, you can let Tracer Summit determine the field size based on the image size and proportion. Simply click once on the graphic to insert the field (rather than dragging to define the field size). The field's editor displays.

- 4. Complete the fields on the editor screens.
- 5. Click OK to return to the Graphics editor. (For field types that reference a specific property, the OK button is not available until you specify a property in the Property field.)





Accessing the Graphic Field Editor

1. Click the field you want to edit. A cross-hatched border displays around the field to show that it is being edited (see Figure 406).

Figure 406. Field with Cross-Hatched Border

BASD Brilling Arrest

- 2. Click the right mouse button to display a pop-up menu, then select Edit Properties. An editor displays that corresponds to this field type.
- 3. Make changes to the information as necessary. Your edits take effect when you click OK.

Selecting a Property Reference for Graphic Fields

On the Property screen, you can specify the site name, object type, object name, and property for the graphic.

To select a property reference for a graphic field:

- 1. Display the graphic field editor for the field:
 - When you insert a new field, the editor automatically displays.
 - For existing fields, position the mouse pointer over the field, then click the right mouse button and select Edit Properties from the pop-up menu.
- 2. In the Site Name field, select the name of the site.
- 3. In the Object Type field, select an object type from the list of those defined for the specified site. The selection will filter the Object Name field to display only those property types and instances defined in the site.
- 4. In the Object Name field, select the name of the object from the list of those available.
- 5. In the Property Name field, select the property from the list of those available. (You must complete this field to exit the screen.)



Editing Setup Information for a Graphic Field

The setup information for a graphic field gives a name to the field for reference while you are in the Graphics editor. The name displays on the graphic field for Static Text, Target Text, Target button fields, and Target External button fields, but does not display on the graphic for other fields. The Setup screen for other fields requires additional information (see "Setup Information for Graphic Fields" on page 477 and "Creating Graphic Links to External Sources" on page 488).

To edit a field's setup information:

- 1. Click the field you want to edit. A cross-hatched border displays around the field.
- 2. Click the right mouse button to display a pop-up menu, then select Edit Properties. The graphic field editor for this field displays.
- 3. Click the Setup tab. Figure 407 shows the Setup screen for a status text field.

Status Text		×
Property Setup	Style Border	
Editor Text:	Heat/cool mode	
	OK Cancel He	elp

Figure 407. Status Text Editor – Setup Screen

- 4. Edit the information as necessary. Refer to "Setup Information for Graphic Fields" on page 477.
- 5. Click OK.





Setup Information for Graphic Fields

The Setup screen of the graphic field editor changes based on the field type selected. The following sections give detailed information on the setup information for specific field types.

Setup Information for Status Text, Setpoint Control, Static Text, and Target Text Fields, and Target Buttons

Setup information for Status text, Setpoint control, Static text, and Target text fields, as well as for target button fields, is similar. When you display the field's editor and select the Setup tab, you can edit the Editor Text field. This field indicates the text that displays on the graphic for static text, target text, and target buttons. (For Target External setup information, see "Creating Graphic Links to External Sources" on page 488. When you display the Target External editor, select the Destination tab to edit the Display Text field.)

Figure 408 shows the Setup screen for a status text field.

Status Text	x
Property Setup Style	Border
Editor Text:	Heat/cool mode
	,
	OK Cancel Help

Figure 408. Status Text Editor – Setup Screen



Setup Information for Analog in 5 Color Fields

Figure 409 shows the Setup screen of the Analog in 5 Color editor.



Analog in 5 color				×
Property Setup Style	Border			
Editor Text:	ot Water Return Te	emperature		_
Low Alarm L	ow Warning	Normal	High Warning	High Alarm
Low Alarm Lo	w Warning	Normal H	igh Warning	High Alarm
65.00	00.63	75.00	78.00	-
105.00	103.00	113.00	1,0:00	_
· · · · · · · · · · · · · · · · · · ·				
			JK Canc	

Setup options include the following:

- For an analog input object, the alarm limit default settings are displayed. For other analog values, edit the alarm and warning settings as desired.
- Click with the right mouse button on the field labels to change the colors that display for each warning, if desired.



Setup Information for Binary Text Fields

Figure 410 shows the Setup screen of the Binary Text editor.

Figure 410. Binary Text Editor – Setup Screen

Binary text	×
Property Setup Style Border	
Editor Text: Fan Status	
Enter Active Text to override system text:	Enter Inactive text to override system text:
Active Text Colors	Inactive Text Colors
Default Foreground	🗖 Default Foreground
Foreground: Change	Foreground: Change
✓ Transparent	✓ Transparent
Background: Change	Background: Change
	OK Cancel Help

Setup options include the following:

- Type a label for the graphic field in the Editor Text field. (This label will not display on the graphic.)
- Edit the text displayed when the property is active in the Active Text field, if desired.
- Edit the text displayed when the property is inactive in the Inactive Text field, if desired.
- Click the Change button to select a different color displayed for the Active Text and Inactive Text, if desired.
- Click the Change button to select a different background color behind the text, if desired.



Setup Information for Graphical Status Fields

The Graphical Status editor lets you create geometric shapes or designs (such as a thermometer) and display them for an analog property. Figure 411 shows the Setup screen of the Graphical Status editor.

Figure 411. Graphica Status Editor-Setup Screen

Graphical Status			×
Property Setup			
Template			
Reverse Scale Scale Thermometer1 Thermometer2 Triangle1 Triangle3 Triangle4 WaterTank			
Min : 0.00 Max : 100.00			
Caption :			
🗖 Digital Value			
	 OK.	Cancel	Help

To create a graphical status field:

- 1. Select a template from the list. (You can use the templates that ship with Tracer Summit or create your own.)
- 2. Type a minimum and maximum value.
- 3. Type a caption (text displays on graphic).
- 4. Click the Digital Value field to display the current value of the property. (If the template is not set up for a digital value this field will not be available.)


Setup Information for Animation Fields

Figure 412 shows the Setup screen of the Animation editor for a binary property. Figure 413 shows the Setup screen for the analog property.

Figure 412. Animation Editor – Binary Setup Screen

Animation	×
Property Setup	
Frames:	Sample:
Add Delete Frame Delay (milliseconds)	Test Animation O Analog O Binary
OK	Cancel Help



Animation			×
Property Setup			
Frames:	÷ €	Sample:	
Add Delete			
Analog Range		Analog	
Low: 0.00 High: 10	0.00	C Binary	
	0K.	Cancel	Help



Setup options include the following:

- Change to analog or binary (defaults to the type of property that is selected)
- Select whether you want to display the images for Active State or Inactive State (binary property).
- Click the Add button for each state to select the image(s) needed to create the animation from the Locate Image dialog box (see Figure 400 on page 469).

Note:

You can not change the state an image represents after it has been added. If you add an image in one state and want to change it to the other state, delete the image. Select the state you want it added to, then add the image.

- Click the up or down arrow button to change the order the frames are displayed, as desired.
- In the In the Frame Delay field, specify the number of milliseconds you want the frames to display. (This number applies to all of the images for a binary animation. A lower number makes the animation appear faster.) (binary property)
- In the Analog Range fields, select the Low and High limits to start and stop the animation (analog property).
- To test the effect of the animation, click the Test Animation button (binaryproperty).



Setup Information for Images, Target Images, and AVI Movies

Setup information for image fields and AVI movie fields is similar. Figure 414 shows the editor Setup screen for an image field.

Figure 414. Image Editor-Setup Screen

Image	X
Setup	
Image Name:	CENTRIFUGAL_2STAGE.GIF
Image Sample:	
	OK Cancel Help

To select an image, click the Browse button and select one from the Locate Image dialog box (see Figure 400 on page 469).

After you have selected an image, a sample displays on the Setup screen.

Editing Text Styles and Borders for Graphic Fields

For any graphic fields with text, including status text, setpoint, static text, and target text fields, you can modify the text styles or borders of the fields.

To edit text styles or borders:

- 1. Display the graphic field editor for the field:
 - When you insert a new field, the editor automatically displays.
 - For existing fields, position the mouse pointer over the field, then click the right mouse button and select Edit Properties from the pop-up menu.
- 2. Click the Style tab. Figure 415 on page 484 shows the Style screen for a status text field. A preview of the font displays in the Font area.



Using the Graphics Editor

Status Text Property Setup Style Border	×			
Font Font: Arial Size: 8 Bold: AbcXyz Italics:	Foreground Color Change Background Color Transparent Change			
Digits Right of Decimal:				
	OK Cancel Help			

Figure 415. Status Text Editor – Style Screen

3. In the Font field, select a font for the text.

Note:

Font styles and sizes vary by PC. You must ensure that the PC Workstation that the graphic will be displayed on has the corresponding font.

- 4. In the Size field, select a font size.
- 5. Check the appropriate boxes (if any) for bold or italic text.
- 6. To change the color of the text, in the Foreground Color field, click the Change button and select a color.
- 7. To change the color of the text background, in the Background Color field, click the Change button and select a color.
- 8. To change the number of decimal places for numbers, select a value in the Digits Right of Decimal field.

Note:

The number you enter here will take effect only if the graphic field will display numeric information.

9. Click the Border tab. Figure 416 on page 485 shows the Border screen for a status text field.



Status Text	×
Property Setup Style Border	
Width: 1	
Shule: solid V	
Color: Change	
OK Cancel	Help

Figure 416. Status Text Editor-Border Screen

- 10. In the Width field, select the width of the border (in pixels).
- 11. In the Style field, select the border's style (such as solid, dotted or dashed).
- 12. To change the color of the border from black, in the Color field, click the Change button and select a color.
- 13. Click OK when you are finished.

Selecting the Destination for Target Fields

One navigation method you can provide to daily operators is a target field, which can be Target text, a Target image, a Target button, or a Target External button. When the user passes the mouse pointer over a target field, the pointer changes into a pointing finger. When the user clicks on the target field, the view links to another graphic (called the target field's destination). By inserting target fields, you can provide access to other graphics in the site—you can even insert target fields that link to graphics at *other* sites. Target External buttons allow you to link to external file sources (see "Creating Graphic Links to External Sources" on page 488).

When you create the target field, you can choose whether you want the destination graphic to replace the launching graphic or to appear in a separate window. The user is able to return to the launching graphic by clicking the Back button, or by closing the window containing the second graphic (if displayed in a separate window).

If the user does not have access to the destination graphic, the cursor does not change into a pointing finger.

To select the destination:

- 1. In the Graphics editor, display the graphic that has the target field you want to edit.
- 2. Click on the target field to select it.



3. Click the right mouse button, then select Edit Properties from the pop-up menu. The graphic field editor displays for that target field. Figure 417 shows the Target Text editor.

Figure 417. Target Text Editor – Destination Screen

Target Text
Destination Setup Style Border Context Object
UCM/Application Objects Graphic Objects
Site Name: BASD2020
Ubject Name: Admin Air Handler
Open New Window: 🗖
Editor Text
O Destination Object Name C Custom Text
OK Cancel Help

4. At the Destination screen, click UCM/Application Objects or Graphic Objects, depending on which graphic you want users to see after they click this target field. The UCM or application destination displays a graphic that is associated with the object.

Note:

If you select UCM/Application Objects, the context is supplied, so the fields of the Context Object screen are not available. If you select Graphic Objects, you need to select the context. See "Selecting the Context Object for a Graphic" on page 472. On the Context Object screen, make selections for the Site Name and Object Name fields.

- 5. In the Site Name field, select the site that contains the UCM/Application object or graphic you want users to see after they click this target field in the current graphic.
- 6. In the Object Name field, select the name of the UCM or graphic you want users to see after they click this target in the current graphic.

Note:

If you selected Graphic Objects in step 4, the Object Name field changes to the Graphic Name field.

- 7. In the Editor Text field, select whether you want the target field to display the destination object name or custom text.
- 8. If you want the second graphic to display in a separate window that appears over the current graphic after the target field is clicked, click



Open New Window. (Some users may not be able to make the selection to open a second graphic window due to their security level.)

9. Click OK when you are finished completing all the editor screens.

Selecting the Context Object for Target Fields

When you link to another graphic using a target field, the context information is passed on to the Report and Scheduling editors, and to the new graphic for use in template fields. See "Creating and Modifying Graphics with Template Fields" on page 510.

To select the context object for a target field:

- 1. Display the graphic field editor for the field:
 - When you insert a new field, the editor automatically displays.
 - For existing fields, position the mouse pointer over the field, then click the right mouse button and select Edit Properties from the pop-up menu.
- 2. Click the Context Object tab. Figure 418 shows the Context Object screen for a target text field.

Figure 418. Target Text Editor – Context Object Screen

Farget Text				×
Destination Setup	Style Border	Context Object]	
Site Name:	Kdefault>		J	-
Object Type:	<default></default>			-
Object Name:	<default></default>		[-
		UK	Lancel	Help

- 3. In Site Name field, select <default>.
- 4. In the Site Name field, select the site. To select the active site, select <default>.
 - If you select <default> for the site name, the Object Type and Object Name fields display <default> also.
 - If you choose a specific site name, the Object Type and Object Name fields display the first type and name defined on the site.
- 5. In the Object Type field, select from the list of object types defined for the site you specified.



- 6. In the Object Name field, select from the list of objects defined for the site and object type you specified.
- 7. Click OK.

Creating Graphic Links to External Sources

You can create graphic links to external sources using the Target External button. The Target External button behaves similarly to a shortcut icon on a workstation desktop. It links the graphic to a source outside of Tracer Summit, such as a Microsoft Word document, an Adobe Acrobat file, or a Web site through Internet Explorer. The external application opens in a separate window and runs independently of the Tracer Summit application.

The Target External button allows you to:

- Launch an application outside of Tracer Summit
- Open a file using an application outside of Tracer Summit, provided the file is associated with an application
- Opens to a Web site using Internet Explorer

To create a graphic link to an external file:

- 1. In the Graphics editor, click the Target External button on the tool palette. The cursor turns into an insert prompt.
- 2. Position the insert prompt at the location on the graphic where you want the button to appear. Click to display the Target External editor. Figure 419 shows the destination screen of the Target External editor.
- 3. In the Display Text field, enter the label you want the button to display.
- 4. In the Target field, create a link to an external application or file by either typing the target path or clicking the Browse button to select the application or file.

To create a link to a Web site, either type in the Web address or open Internet Explorer and browse to select the site. Copy the Web site address and paste it into the Display Text field.

The selected path or address will display in the Target field, as shown in Figure 419 on page 489.



Target External		X
Destination Style		
Display Text:	HPLC	
Target:	C:\My Documents\Tracer Summit\InstallG	Browse
	OK Cancel	Help

Figure 419. Target External Editor – Destination Screen

- 5. Use the Style tab if you want to change the appearance of the button (see "Editing Text Styles and Borders for Graphic Fields" on page 483).
- 6. Click OK when you are finished completing the editor screens. The Target External button will appear at the point where you positioned the insert prompt (see step 2).
- 7. To edit the button, right-click on the button and select Edit Properties from the pop-up menu.



Organizing Graphic Fields

When you are creating new graphic fields or modifying existing fields, you may want to:

- Move one or more fields to a different location on the graphic
- Resize one or more fields to be the same size
- Copy (or cut) fields and paste them on another graphic
- Align several fields along their top, bottom, left, or right edges

Selecting a Graphic Field

• Click once over the field. A cross-hatched border displays around the field.

Selecting Multiple Fields at Once

1. Click the first field you want to edit. A cross-hatched border displays around the field to show that it is the primary field.

When you perform actions requiring fields to match position, or size, or alignment, this primary field is used as a model for the other fields. (If you do not want this field to be the primary field, click Default Cursor on the palette, then make a different selection.)

2. Holding down the Ctrl key, click one or more additional fields on the same graphic. Fields do not need to be of the same type to be selected at the same time.

A striped border displays around these subsequent items you select to show that they are secondary fields (see Figure 420). When you perform actions requiring fields to match position, or size, or alignment, these fields change to match the primary field.

Figure 420. Primary and Secondary Fields





Moving a Graphic Field

1. Click the field you want to move. (You can also move multiple selected fields at once. See "Selecting Multiple Fields at Once" on page 490.)

After you select the field, the cursor turns into a movement cursor (see Figure 421).

Figure 421. Movement Cursor

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2. Drag the field to a new location within the graphic. All fields selected with this field also move.

To move the field just one pixel at a time, press the left, right, up or down arrow keys on your keyboard while the movement cursor is displayed.

When you release the mouse button, the default cursor returns.

Resizing a Graphic Field

- 1. Click the field you want to edit. A cross-hatched border displays around the field.
- 2. Use the mouse to grab one of the edges or corners of the field. The cursor changes to directional arrows showing the direction in which the field dimension can be changed.
- 3. Drag the field in the direction of the arrows to increase or decrease its size. When you release the mouse button, the default cursor returns.

Cutting and Pasting a Graphic Field

- 1. Click the field you want to cut. A cross-hatched border displays around the field. (You can also select multiple fields to cut simultaneously. See "Selecting Multiple Fields at Once" on page 490.)
- 2. Click Cut Selected Field(s) on the Graphics editor toolbar to remove the field from the graphic (see Figure 422).

Figure 422. Cut Selected Field(s) Button

X

- 3. Place the cursor at the location where you want to paste the field you removed. This can be a location on the same graphic or on a different graphic.
- 4. Click Paste Selected Field(s) on the Graphics editor toolbar to insert the field in the new location (see Figure 423). The field is inserted at the new location.



Figure 423. Paste Selected Field(s) Button



Copying a Graphic Field

- 1. Use the default cursor to click the field you want to edit. A crosshatched border displays around the field. (You can also select multiple fields to copy simultaneously. See "Selecting Multiple Fields at Once" on page 490.)
- 2. Click Copy Selected Field(s) on the Graphics editor toolbar (see Figure 424).

Figure 424. Copy Selected Field(s) Button



- 3. Place the cursor at the location within the graphic where you want to paste the field you copied. This can be a location on the same graphic or on a different graphic.
- 4. Click Paste Selected Field(s) on the Graphics editor toolbar to insert the field in the additional location (see Figure 423).
- 5. If additional configuration is required to distinguish the copied field from the original field, complete this configuration.

Aligning Graphic Fields

You can use the Align buttons on the Graphics editor toolbar to align secondary graphic fields with the primary field you select.

To align graphic fields:

- 1. Click the field to which you want to align the other fields. A crosshatched border displays around this primary field.
- 2. Hold down the Ctrl key and click the other fields that you want to align to the primary field. A striped border displays around these secondary fields.
- 3. On the Graphics editor toolbar, click one of the following:
 - Align Left, to align all of the secondary fields along the left of the primary field
 - Align Right, to align all of the secondary fields along the right of the primary field
 - Align Top, to align all of the secondary fields along the top of the primary field
 - Align Bottom, to align all of the secondary fields along the bottom of the primary field

See Figure 425 on page 493.



Figure 425. Align Buttons



Align Left, Right, Top, Bottom

Making Graphic Fields the Same Size

You can use the Make Same buttons of the Graphic editor toolbar to make several fields the same size as a primary field that you select.

To make graphic fields the same size:

- 1. Click the field which you want to use for the size of all selected fields. A cross-hatched border displays around this primary field.
- 2. Hold down the Ctrl key and click the other fields that you want to make the same size as the primary field. A striped border displays around these secondary fields.
- 3. On the Graphics editor toolbar, click one of the following:
 - Make Same Height, to make all of the secondary fields the same height as the primary field
 - Make Same Width to make all of the secondary fields the same width as the primary field
 - Make Same Size to make all of the secondary fields the same size as the primary field

See Figure 426.

Figure 426. Make Same Buttons



Make Same Height, Width, Size



Moving Graphic Field Layers Forward or Back

When you add graphic fields, they are layered on the background in the order created. For example, if you create a Static Text label first, then add a Target Image field, the Target Image will be a layer on (or *in front of*) the label. You may want to move the label on top of the image.

For an example of fields layered over an image, see Figure 395 on page 462.

To move graphic field layers forward or back:

- 1. Select any field(s) you want to move forward or back (see "Selecting Multiple Fields at Once" on page 490).
- 2. Click the right mouse button. From the pop-up menu, make a selection:
 - $\bullet \quad \mbox{Select Move Back by 1 to move the currently selected field(s)} \\ \mbox{behind one field.}$
 - Select Move Forward by 1 to move the currently selected $field(\mathbf{s})$ forward one field.
 - Select Move to Back to move the currently selected field(s) all the way to the back. (You can also select the Move to Back button on the Graphics editor toolbar.)
 - Select Move to Front to move the currently selected field(s) in front of other fields. (You can also select the Move to Front button on the Graphics editor toolbar.)

Deleting a Graphic Field

- 1. Select all the fields you want to delete (see "Selecting Multiple Fields at Once" on page 490).
- 2. From the Edit menu, select Delete. The selected fields are deleted.



Saving Graphics

You can save a graphic using the Save Graphic button on the Graphics editor toolbar or using the Save Graphic command from the File menu. When saving a graphic, keep in mind the following:

- For custom graphics, your changes overwrite the current graphic file.
- For standard graphics, your changes do not overwrite the original standard graphic. Instead, they are saved into a graphic file of the same name in the Graphics \Custom folder, which will override the standard graphic.
- To save a graphic file to a new name or a different location, you can use the Save Graphic As command. For custom graphics, refer to "Saving a Custom Graphic to a New Location or File Name" below. For standard graphics, refer to "Saving Edited Standard Graphics" on page 496.
- The first time you save a custom graphic you created from a blank graphic, you must specify the name and location of the graphic file. Refer to "Saving a Custom Graphic to a New Location or File Name" below.

To save a graphic:

• On the Graphics editor toolbar, click Save (see Figure 427). The graphic file is updated with your changes.

Figure 427. Save Button



Saving a Custom Graphic to a New Location or File Name

To save a custom graphic to a new name or location, you can use the Save Graphic As command. The steps are the same for the first time you save a custom graphic created from a blank graphic, because you need to specify the name and location of the graphic file.

To save a custom graphic to a new location or file name:

- 1. From the File menu, select Save Graphic As. If this is your first time saving a graphic, select Save Graphic. The Save As Graphic dialog box displays (see Figure 428 on page 497).
- 2. In the Graphic Object Name field, enter a name for this graphic. The name appears in the list of custom graphic objects and, possibly, on the navigation tree. Do *not* use an object name that is already in the system.
- 3. In the HTML File Name field, enter an HTML name for the graphic file. Tracer Summit uses this file name to locate the graphic. Do not use an HTM file name that is already in use. (If you do not type the .HTM extension, Tracer Summit automatically adds it.)



- 4. Select either Global Graphics or Site Graphics. If you select Global Graphics, this graphic is saved to the Graphics \Custom folder and is available for assignment to any site. If you select Site Graphics, you must also identify the particular site to which you want to assign this graphic. This graphic is saved in the Graphics *site name* folder and cannot be used for any other site. If you are saving an existing site graphic, you cannot change it to a global graphic or change to another site.
- 5. To change the security access for this graphic, click the Security Classes button to display the Change Security Classes dialog box.
- 6. At the Save As Graphic dialog box, click OK to create the graphic object in the location you specified.

If the graphic has no template fields, it is added as a node on the Tracer Summit root node (if you selected Global Graphics in step 4) or below the site you identified (if you selected Site Graphics in step 4).

Saving Edited Standard Graphics

When you edit a standard graphic and use the Save Graphic command to save it, the edited standard graphic is stored in the Graphics \Custom folder (which makes the graphic a global graphic available to all sites). Tracer Summit automatically displays this edited standard graphic when you select its associated object. The next section "How Tracer Summit Searches for and Displays Standard Graphics" explains how this works.

If you want to make the edited standard graphic a site graphic that is available only to the current site, you need to use the Save Graphic As command to save the edited graphic to the Graphics *site name* folder. Refer to "Saving an Edited Standard Graphic as a Site Graphic" on page 497.

For information on saving an edited standard graphic to a new name (as a custom graphic), refer to "Saving an Edited Standard Graphic as a Custom Graphic" on page 498.

How Tracer Summit Searches for and Displays Standard Graphics

When you click on an object in the navigation tree, Tracer Summit follows a search sequence to locate the object's graphic file. To have Tracer Summit use an edited version of a standard graphic, it is helpful to know how Tracer Summit searches for standard graphics. The program looks for the HTML file that matches the name of the original standard graphic and searches in this order:

- 1. The Graphics \site name folder for the current site.
- 2. The Graphics \Custom folder.
- 3. The Graphics \Standard folder where graphics originally included with Tracer Summit are stored.

Knowing this search sequence allows you to store graphics in locations and with names so that Tracer Summit first finds the one you want to display.



For example, the original standard graphic for an area is called *area.htm* and is stored in the Graphics\Standard folder. Let's say you open this graphic and modify it, then use the Save Graphic command to save it. Tracer Summit automatically saves the modified graphic to a file called *area.htm* (the same name) in the Graphics\Custom folder. Now, when you display the standard graphic for an area on any site, Tracer Summit displays the modified version of the graphic because it looks in the Graphics\Custom folder.

To save a modified standard graphic in the Graphics*site name* folder, you need to use the Save Graphic As command (as described in the next section).

Saving an Edited Standard Graphic as a Site Graphic

- 1. Display the standard graphic in the Graphics editor and make the necessary edits.
- 2. From the File menu, select Save Graphic As. The Save As Graphic dialog box displays (see Figure 428).

The Graphic Object Name and HTML File Name fields already contain the appropriate names for the standard graphic. Do *not* change the names or Tracer Summit will not locate the modified graphic's file at runtime.

Save As Graphic		×
Name Graphic Object Name: HTML File Name:	Finance Department Area FINDEPT.HTM	
Location	• · · · · · · ·	
C Global Graphics	 Site Graphics TRANE 	<u> </u>
Graphic Object Name	HTML File Name	
Applications graphic	apps.htm	▲
Applications, page 2	auto htm	
Auto Insertion, page 2	autoinp2.htm	
BASD Building Areas	BASDAREA.HTM	
Billing graphic	billing.htm	
Billing, page 2 Cafeteria graphic	Dillingp2.ntm cafe.htm	
Cafeteria, page 2	cafep2.htm	
Chiller #1 graphic	chiller1.htm	▼
Path: c:\program files\t	racer summit\graphics\trane	
		Create Expanded Message
Security Classes	OK	Cancel Help

Figure 428. Save As Graphic Dialog Box

- 3. Select either Global Graphics or Site Graphics:
 - If you select Global Graphics, this graphic is saved to the Graphics\Custom folder and is available for assignment to any site. (Selecting Global Graphics at the Save Graphic As dialog box has the same effect as using the Save Graphic command.)



- If you select Site Graphics, you must also identify the particular site to which you want to assign this graphic. This graphic then cannot be used for any other site.
- 4. To change the security access for this graphic, click the Security Classes button to display the Change Security Classes dialog box.
- 5. At the Save As Graphic dialog box, click OK to save the graphic object in the location you specified. (Do *not* check the Fill in Template Fields check box.)

Saving an Edited Standard Graphic as a Custom Graphic

To create a custom graphic, you can edit a standard graphic (rather than starting with a blank graphic). To save an edited standard graphic as a custom graphic, you simply use the Save Graphic As command to change its object and HTML file name. When you change the name of the edited standard graphic, the graphic is no longer the standard graphic for the specified object. The graphic can be used as a modified standard graphic (it won't appear in the navigation tree) or saved with no template fields (it will appear as a node on the tree).

To save an edited standard graphic as a custom graphic:

- 1. In the Graphics editor, display the standard graphic for the UCM, application, or site object and make the necessary edits.
- 2. From the File menu, select Save Graphic As. The Save As Graphic dialog box displays (see Figure 428 on page 497).
- 3. In the Graphic Object Name field, specify the name of the object. This name may appear on the navigation tree.
- 4. In the HTML File name field, enter a new name for the custom graphic.
- 5. Select either Global Graphics or Site Graphics:
 - If you select Global Graphics, this graphic is saved to the Graphics \Custom folder and is available for assignment in any site.
 - If you select Site Graphics, you must also identify the particular site to which you want to assign this graphic. This graphic will be saved to the Graphics *site name* folder for the selected site and cannot be used for any other site.
- 6. To change the security access for this graphic, click the Security Classes button to display the Change Security Classes dialog box.
- 7. At the Save As Graphic dialog box, click OK to save the custom graphic in the location you specified.
 - If the graphic is to be used as a modified standard graphic, do not check the Fill in Template Fields check box.



• If the graphic is to be used with no template fields, then check the Fill in Template Fields check box.

If the graphic has no template fields, it is added as a node on the Tracer Summit root node (if you selected Global Graphics in step 5) or below the site you identified (if you selected Site Graphics in step 5).

Note:

When you save a graphic that contains template fields, the graphic is not included on the navigation tree. See "Creating and Modifying Graphics with Template Fields" on page 510 for more information about template fields.

Restoring an Original Standard Graphic

A set of standard graphics are shipped with Tracer Summit. These original standard graphics are stored in the Graphics \Standard folder. By default, these standard graphics display when you click an item on the navigation tree or click the Graphic button in a UCM editor.

When you edit a standard graphic, the edited version is automatically saved as a global graphic in the Graphics\Custom folder, unless you use the Save Graphic As command to save it as a site graphic in the Graphics*site name* folder specific to the current site. The file name is the same as the original standard graphic.

As described in "How Tracer Summit Searches for and Displays Standard Graphics" on page 496, Tracer Summit first looks for an object's graphic in the Graphics*site name* folder, then in the Graphics\Custom folder, and finally in the Graphics\Standard folder.

If you want to return to using an original standard graphic rather than your edited version, you simply have to delete the edited versions in the Graphics*site name* and Graphics\Custom folders.

To restore an original standard graphic, you first identify the location of the custom HTML file and then delete it.

To restore an original standard graphic:

- 1. In the Graphics editor, display the edited standard graphic that you no longer want to use the object's standard graphic.
- 2. From the Edit menu, select Properties. The Graphic Properties dialog box displays.
- 3. Click the Graphic Information tab of the Graphic Properties dialog box (see Figure 429 on page 500).



Using the Graphics Editor

Graphic Properties	×
Background Image Graphic Information Context Object	
HTML Path: c:\program files\tracer summit\graphics\trane\findept.htm	
Security Classes	

Figure 429. Graphic Properties Dialog Box-Graphic Information Screen

- 4. Note the file name and path to the file.
- 5. Using Windows Explorer, locate and delete the file.

Note:

You can also rename the HTML file, which has the same effect as deleting the file because Tracer Summit will not be able to locate it. You should rename a graphic file when you are not sure whether you may need the custom graphic again in the future.

6. In Tracer Summit, display the graphic for the object.

You may need to repeat these steps again if there was a copy of the graphic file in both the Graphics \Custom and the Graphics *site name* folders. When the Graphics Information screen of the Graphics Properties dialog box displays the graphic's folder as \Program Files \Tracer Summit\Graphics \Standard, then you have restored the original standard graphic.



About Site and Global Graphics

Tracer Summit classifies most graphics into two categories:

- Site graphics are specific to a site and are not available to be assigned to other sites. These graphics are objects that reside in the site database and initially have their corresponding HTML file stored in the Graphics *site name* folder.
- Global graphics are available to all sites. These graphics are objects stored in the system site database and initially have their corresponding HTML files stored in the Graphics \Custom folder.

Many customers have only one site on their Tracer Summit system and so will usually save their custom graphics as site graphics.

Global graphics are most useful when you have multiple sites within your Tracer Summit system and want to set up your own standard graphics or have graphics appear above sites as group of sites nodes on the navigation tree. Group of sites nodes help you navigate when you have multiple sites.

All graphics in a system are set up as either global graphics or site-specific graphics. If a graphic is set up to be a global graphic, it is stored at the system site and is available for use at one or more additional sites. All global graphics can be selected from the Open Graphic or Edit Graphic dialog box with any active site. If a graphic is associated with a specific site, then it may be accessed and edited only when you are logged onto the appropriate site.

Within global graphics, there are two categories of existing graphics that you may access using the Graphics editor: standard graphics and custom graphics. All graphic objects have corresponding HTML files. Whenever you save a graphic or save it under a new name, you create or update the associated HTML file as well.

A standard graphic is a graphic that is shipped with Tracer Summit. Tracer Summit provides these ready-made graphics stored in the system site for many UCMs and applications. These standard graphics are for your convenience, if you do not have the time or resources to invest in creating all new graphics for your system. Standard graphic HTML files are always stored in the Graphics\Standard folder for the system. If a standard graphic is modified, the modified HTML file is stored in the Graphics\Custom or Graphics*site name* folder, depending upon the location you choose in the Save As Graphic dialog box.

A custom graphic is a graphic that you have previously created in the Graphics editor, or which you have created based on a standard graphic. Custom graphic objects can be stored in either the global site or a specific site. The corresponding HTML file is saved in the Graphics\Custom folder (for the global location) or the Graphics*site name* folder for the site-specific location.



Creating Images for Use in Graphics

Using the Graphics editor, you can import images you create in other software applications into graphics used in Tracer Summit. The file types that Tracer Summit can import include the following:

- Graphics Interchange format (GIF)—version 89a is recommended because version 87a does not support transparent colors
- JPEG File Interchange (JPG)—Hoffman compressed and progression encoding
- Bitmap (BMP)—RGB encoded, RLE encoded
- Audio-Video Interleave (AVI)

To create these image files, you can use a variety of graphics packages, including Paintshop Pro versions 5 and 6, AutoCAD, CorelDRAW, or Windows Paint.

Saving Image Files

For optimal performance, save each image file in the same directory as the HTML file that use the image. For site-specific images (used by only one site), store the image files in the Graphics *site name* folder. For images used by more than one site, store the image files in the Graphics \Custom folder.

Name image files using up to 32 characters. Choose a name that is as specific and informative as possible, especially if you may use this image several times within a site or for other sites.





Window and Image Sizes

Table 26 lists window sizes for different window options within Tracer Summit. This information is helpful if you are designing images that you want to cover the entire screen (such as background images). If you have a background image set to the indicated height and width for the given window display options, then no information will be hidden and require scrolling to see.

Table 26. Image Sizes for Different Window Options(Based on 800 x 600 display settings)

Window or	Window Display Options			
Image Size (Width x Height in Pixels)	Navigation Tree Displayed?	Status Bar Displayed?	Summit Task Bar Displayed?	Windows Task Bar Auto Hide Enabled?
594 x 452	Yes	Yes	Yes	No
594 x 480	Yes	Yes	Yes	Yes
594 x 512	Yes	Yes	No	No
594 x 540	Yes	Yes	No	Yes
594 x 470	Yes	No	Yes	No
594 x 498	Yes	No	Yes	Yes
594 x 530	Yes	No	No	No
594 x 558	Yes	No	No	Yes
780 x 452	No	Yes	Yes	No
780 x 480	No	Yes	Yes	Yes
780 x 512	No	Yes	No	No
780 x 540	No	Yes	No	Yes
780 x 470	No	No	Yes	No
780 x 498	No	No	Yes	Yes
780 x 530	No	No	No	No
780 x 558	No	No	No	Yes



Creating a Custom Graphic from a Blank Graphic

One way to create a custom graphic is to edit an existing graphic, then use the Save Graphic As command to save it under a new name (see "Saving Graphics" on page 495).

Another way to create a custom graphic is to start with a blank graphic. You may wish to do this if there is no standard graphic for the object you want to illustrate, or if the standard graphic is so different from what you need that it is more efficient to start with a blank graphic.

To create a custom graphic from a blank graphic, you must open the blank graphic, build the custom graphic, then save it.

Opening a Blank Graphic

You can open a blank graphic from the Tracer Summit main menu or from the Graphics editor.

Opening a Blank Graphic from the Main Menu

- 1. If your system includes multiple sites, make sure you are logged onto the correct Tracer Summit site (so that graphics are saved to the appropriate site).
- 2. From the Setup menu, select Graphics editor. The Edit Graphic dialog box displays (see Figure 430).

Figure 430. Edit Graphic Dialog Box

Edit Graphic	×
Graphic Graphic: AHU #1 Graphic AHU #2 Graphic AMS Area Boiler Plant Building Areas Chiller Plant Graphic Customer Support Area Enserge Subteme	~
Energy Systems Engineering Area Finance Department Area IAQ System IAQ System P2	
✓ Non-Template Graphics	
Edit New Cancel Help	

3. Click New to display a blank graphic in the Graphics editor (see Figure 431 on page 505).



Creating a Custom Graphic from a Blank Graphic

1 Tranor Summit - IEdit Grank	in New Crashiel		
<u>File Connect Status Edit</u>	Layout ⊻iew <u>G</u> o S <u>e</u> tup <u>I</u> ools <u>W</u> i	ndow <u>H</u> elp	_82
← → △			
			1
		Palette	
•	Promotion and a second s		
For Help, press F1	User: TRACER	Site: COMTEL	

Figure 431. Graphics Editor-New Graphic Window

4. Insert fields, images and background as described in "Building a Custom Graphic" on page 505.

Opening a Blank Graphic from the Graphics Editor

• On the Graphics editor toolbar, click New Graphic (see Figure 432) to display a blank graphic (see Figure 431).

Figure 432. New Graphic Button



Building a Custom Graphic

The first step in creating a new graphic is to add the main image(s) over which you will add fields. There can be more than one image per graphic object. For example, this image could be a floor plan or a drawing of a chiller, or both.

Selecting the Background Image

The background image is an image that fills the entire graphic window. Often, you may want to select the same background image for all custom graphics you create to provide a standard look for all graphics. Typically, this background image is simply a solid color screen.



To select a background image, refer to "Changing the Background of a Graphic" on page 468.

Note:

This is the only image a grid displays over.

Inserting Other Images

- 1. Use a third-party graphics creation tool to generate a graphic in GIF, JPG, or BMP format.
- 2. Save the image in the Graphics \Custom or Graphics *site name* folder.
- 3. With your custom graphic displayed in the Graphics editor, on the Graphics editor palette, click Image (see Figure 433). The cursor becomes an insert prompt.

Figure 433. Image Button



- 4. Make a selection:
 - To create an image that keeps its proportion (or aspect ratio) the same as you created it, click once on the graphic at the approximate place you want to insert the image.
 - To create an image of a specific size, drag the insert cursor to create a box where you will insert the image. Choosing this option may distort the image's aspect ratio (the image, for example, may be stretched wider than it was when you created it). This may adversely affect the quality of the image.

When you release the mouse button, the Image dialog box displays (see Figure 434).

Figure 434. Image Dialog Box

Image		×
Setup		
Image Name:		Browse
Image Sample:		
	OK Cancel	Help



- 5. Click Browse to select a file name and path of the image from the Locate Image dialog box (see "Using the Locate Image Dialog Box" on page 470).
- 6. At the Image dialog box, click OK. The graphic displays with the new image inserted.
- 7. Change the size or position of the image as necessary. Follow the directions for moving or sizing fields (see "Moving a Graphic Field" on page 491 or "Resizing a Graphic Field" on page 491).

Inserting Fields

The task of inserting and configuring fields on a new custom graphic is the same as on an existing standard graphic (see "Inserting a Graphic Field" on page 474).

Saving Custom Graphics

Graphic objects in Tracer Summit are stored with corresponding HTML files. You can save custom graphics as either global graphics or site graphics:

- To make a graphic a site graphic that is available only to the current site, choose the site as the location to save the graphic.
- To make a graphic a global graphic that you can assign to any site, choose the global location to save the graphic.

Use the Save Graphic command or the Save Graphic As command to save the graphic. For more information, refer to "Saving Graphics" on page 495.



Creating Expanded Messages

An expanded message is a graphic object that you can assign an analog or binary input. When the input goes into alarm, the alarm is displayed in the event log with a small envelope to indicate it has an expanded message. Users can click on the envelope to view the expanded message. You can use an expanded message to give operators detailed information about an alarm and show (in text or images) an action they should take.

To create an expanded message, you create a graphic with text and images, just as you would for any graphic. When you save it, you save it as an expanded message (an option at the Save Graphic As dialog box).

When you save the graphic with the expanded message option, Tracer Summit saves both the HTML file for the graphic and an expanded message object that links back to the graphic object. This graphic then displays when the expanded message object is viewed.

After you have created an expanded message, the expanded message object is available to be assigned in the analog or binary input editors for alarming and viewing in the event log.

Note:

A graphic that has template fields cannot be an expanded message.

You can use the same steps for creating an expanded message whether you are working with a new graphic or an existing graphic.

To create an expanded message:

- 1. Display the Graphics editor and make a selection:
 - Open an existing graphic that you want to use as an expanded message.
 - Create a graphic to use as the expanded message. Include text fields and images as appropriate. You can create a custom graphic from a blank graphic or edit a standard graphic.
- 2. From the File menu, select Save Graphic As. If you are saving the graphic for the first time, select Save Graphic. The Save As Graphic dialog box displays (see Figure 435 on page 509).



Save As Graphic				×
Name Graphic Object Name: HTML File Name:	Chiller Plant Message ChillerPlantMess.htm			
C Global Graphics	Site Graphics	TRANE		•
Graphic Object Name	I	HTML File Name		
Applications graphic Applications, page 2 Auto Insertion, page 2 BASD Building Areas Billing graphic Billing, page 2 Cafeteria graphic Cafeteria, page 2 Chiller #1 graphic		apps.htm appsp2.htm autoinp2.htm 3ASDAREA.HTM billing.htm billing02.htm cafe.htm cafep2.htm cafep2.htm		4
Path: c:\program files\	racer summit\graphics\tra	ne	🔽 Create Exp	oanded Message
Security Classes	[ОК	Cancel	Help

Figure 435. Save As Graphic Dialog Box-Expanded Message

- 3. Click the Create Expanded Message dialog box.
- 4. Complete the other fields as appropriate (for more information, see "Saving Graphics" on page 495).
- 5. Click OK. The graphic file is saved and the expanded message object is created.



Creating and Modifying Graphics with Template Fields

Template fields allow you to create your own standard graphics. They look at the context of the graphic for the necessary information to display data in the field. Because graphics containing template fields do not have a fixed context object, they do not automatically appear on the navigation tree. From within the Graphics editor, you can recognize a template field because the Site Name and Object Name properties to which it refers are listed as <default>.

Because template fields do not have a fixed context object, you can use graphics with template fields in several places on the same site or on other sites. The standard graphics included with Tracer Summit use template fields.

Fields that can be used as template fields are:

- Graphical status
- Status text
- Analog in 5 color
- Binary text
- Animation
- Target text
- Target image
- Target button
- Setpoint control
- Override control
- Binary check box control
- Selection list control

A target field set up as a template field will pass the context object of the current graphic to the graphic being opened. Graphics with template fields being launched from a target on another graphic must have the appropriate context object passed via the target. For example, the system will display "no such property" for all template fields on a graphic if those templates were for VAV II/III/IV and the target context object was for an IntelliPak Rooftop.

Note:

Graphics that were on the tree and were modified to include template fields will no longer appear on the navigation tree.

To assign a graphic with template fields to a UCM or an application, use the Navigation Tree editor (see Chapter 26, "Using the Navigation Tree").



Inserting a Template Field on a Graphic

- 1. Display the graphic to which you want to add a template field.
- 2. Make a selection:
 - To insert a new field, click the appropriate button on the Graphics editor palette and then click on the graphic (see "Inserting a Graphic Field" on page 474). The editor for that field displays.
 - To change an existing field into a template field, click on the field and then click the right mouse button. Select Edit Properties from the pop-up menu. The editor for that field displays.
- 3. Display the Property screen or the Context Object screen as appropriate. Figure 436 shows the Property screen for the Status Text editor and Figure 437 shows the Context Object screen for the Target Text editor.

Figure 436. Status Text Editor – Property Screen

St	tatus Text		х
	Property Setup S	tyle Border	
	Site Name:	TRANE	
	Object Type:	Analog Input	
	Object Name:	AHU #1 Discharge Air Temp	
	Property Name:	Acknowledged	
		OK Cancel Help	

Figure 437.	Target	Text Editor –	Context	Object	Screen
-------------	--------	---------------	---------	--------	--------

Target Text	×
Destination Setup	Style Border Context Object
Site Name:	<default></default>
Object Type:	<default></default>
Object Name:	<default></default>
	OK Cancel Help



4. In the Site Name field, select <default>.

Note:

For the Property screen, the Object Name field is automatically assigned a value of <default>. For the Context Object screen, the Object Type and Object Name fields are assigned a value of <default>.

- 5. Edit the information on the other screens as desired.
- 6. Click OK. The specified graphic field is created.

Saving a Graphic with Template Fields

Saving a graphic with template fields is the same as saving any graphic. Use the Save Graphic or Save Graphic As command on the File menu. At the Save Graphic As dialog box, make sure you do not select the Fill In Templates check box, which hard codes the information and changes the template fields back to regular fields. For detailed information on saving graphics, refer to "Saving Graphics" on page 495.

When you save a graphic with template fields, the graphic object does not appear on the navigation tree or in the Open Graphic dialog box. You can assign the graphic to a UCM, application or site node on the navigation tree using the Navigation Tree editor.

To edit a graphic with template fields, you must follow the steps in "Editing a Graphic With Template Fields" on page 513.



Editing a Graphic With Template Fields

If you have assigned a graphic with template fields to a UCM or application using the navigation tree, then you can open the graphic for editing as you would other graphics. See "Accessing the Graphics Editor" on page 463.

If you have not assigned the graphic to the navigation tree, you must open it from the Edit Graphic dialog box, as described in the following steps.

To edit a graphic with template fields:

- 1. From the Setup menu, select Graphics editor.
 - If you have a graphic currently displayed, then that graphic is opened for editing. From the File menu, select Open Graphic. The Edit Graphic dialog box displays.
 - If no graphic was displayed, then the Edit Graphic dialog box displays.

See Figure 438.

Figure 438. Edit Graphic Dialog Box

dit Graphic	×
Graphic:	
Absorption, 1 Stage, Hot Water Absorption, 1 Stage, Steam Absorption, 1 Stage, Steam, P2 Absorption, 2 Stage, Not Water, P2 Absorption, 2 Stage, Steam Absorption, 2 Stage, Steam, P2 Area Area, P2 BCHA Horiz Elec. Heat, Mix Box, P2 BCHA Horiz, 2 Pipe Mix Box, P2 BCHA Horiz, 2 Pipe Mixing Box BCHA Horiz, 2 Pipe No Mix Box, P2 BCHA Horiz, 2 Pipe No Mixing Box	▲ ▼
Non-Template Graphics	Template Graphics
Edit New	Cancel Help

- 2. Click the Template Graphics check box. The list updates to include all template graphics.
- 3. Click the name of the graphic, then click Edit. The selected graphic displays in the Graphics editor.
- 4. Edit and save the graphic.



Putting Permanent Information into Template Fields on a Graphic

You may decide you no longer want a graphic to have template fields. Instead, you want it to contain permanent information. You can have Tracer Summit fill in the information based on the context from which you launch the graphic.

To put permanent information into a graphic's template fields:

- 1. Open the graphic that has template fields in the Graphics editor. Make sure you choose the appropriate context from which to launch the graphic:
 - To launch from an object on the navigation tree, click on the object in the navigation tree to display the graphic, then on the Setup menu select Graphics editor.
 - To launch from a UCM editor, display the editor for the associated UCM (on the Setup menu, select Unit Controllers, then the UCM type). At the UCM editor Status screen, click Graphic to display the graphic. Then on the Setup menu, select Graphics editor.
 - To launch from a target field on other graphic, click on the target field to display the associated graphic with template fields. Then on the Setup menu, select Graphics editor.
- 2. From the File menu, select Save Graphic As. The Save As Graphic dialog box displays (see Figure 439).

Save As Graphic	2
Name Graphic Object Name: WSHP, Console, 1 HTML File Name: WSHPRF3A.htm	Comp., P2
C Global Graphics © Site Grap	phics BASD
Graphic Object Name	HTML File Name
BASD Building Areas Binary Override IPAK CV RTU, Cool only, Stat, P2 Main Display Template test Tree Test	BASDAREA.HTM binaryoverride.htm ipakr2a.htm Mainmenu.htm temptest.htm treetest.htm
Path: c:\summit\graphics\basd	Fill in Template Fields
Security Classes	OK Cancel Help

Figure 439. Save As Graphic Dialog Box-Fill In Template Fields

3. Complete the Object Name and HTML File Name fields with different names for standard graphic objects. (Overriding a standard graphic object with permanent information for template fields will do so for all objects that use the same standard graphic object.)



- 4. Click the Fill In Template check box.
- 5. Click OK. The graphic is saved with the object name and HTML file name provided. All of the template fields are hard-coded to the context object of the graphic you launched in step 1. Because the graphic no longer has template fields, Tracer Summit assigns it to the navigation tree. The graphic is also available at the Open Graphic dialog box.

If the name of the graphic object was changed, you must use the Navigation Tree editor to assign the new graphic to a UCM, application or site node on the tree.

Deleting a Graphic

There are two steps to deleting a graphic:

- Deleting the graphic object
- Deleting the HTML file associated with it

To delete a graphic object:

Use the Delete Object utility on the Tools menu. See Chapter 39, "Deleting Objects and Sites."

To delete an HTML file associated with a file:

In Windows Explorer, use standard procedures to delete the associated HTML file from the Graphics*site name* folder or from Graphics\Custom folder. When displaying the object, Tracer Summit will revert to the graphic stored in the Graphics\Standard folder, if there is one. (If there is no standard graphic file, the user will see an error message indicating that the file does not exist or cannot be found.)

Note:

Renaming a graphic file to a name that is not called by Tracer Summit has the same effect as deleting the HTML file. Tracer Summit cannot find this file. Rename a graphic file only when you are not sure whether you may need a custom graphic again in the future.



Using the Graphing Control Editor

From the Graphing Control editor, you can create graphs for either live properties or historical data trends from Tracer Summit. You can have as many graphs on a graphic that you want and plot up to four properties per graph.

Note:

The Trend viewer provides an easier method for creating and viewing graphs for live or historical trend data (see Chapter 28, "Using the Trend Viewer").

Live Property Graphs

A live property graph shows the value of any property in Tracer Summit in real time. The sampling of data starts when the graphic is opened and stops when the graphic is closed. Using a right-mouse-click, you can choose to start and stop sampling, as well as, change the style of the graph or print it out. Live graphs are valuable for monitoring building conditions in real time.

Historical Graphs

A historical graph shows values that have been stored by the BCU in a trend object. Graphs that display trend objects are static since the data is historical. Using a right-mouse-click, you can refresh the data, change the style of the graph, or print it out.

Accessing the Graphing Control Editor

With the Graphics Control editor open, click the graphing symbol button on the tool palette, then click anywhere in the Graphics editor. The Graphing Control editor displays (see Figure 440).




0 1: 0								
Graphing Co	introl						<u>></u>	٢.
Members	Graph Settings Axis							
Site: Type: Name: Property:	BASDAUTO VariTrane UDM 1 Production Manager VAV Active Heat Setpoint	▼ 001 003 ▼ ▼	Add >> << Remove	Graph Pr Pr Pr Pr Graph	Member oduction 	S Manager VAV// Manager VAV// Manager VAV// Type: VariTrane Name: Productio Yoane: Active Color: Green d Text: Productio 1	Active Coo Active Hea UCM I on Manage Heat Setp on Manage	
			Le	gena: Jrio	Junction	Manayer VAV/A	cuve nea	l
			Ax	is: 💿	Y1	O Y2		
				0	К	Cancel	Help	J

Figure 440. Graphing Control Editor—Members Tab



Selecting Graph Members

From the Graphing Control Members tab, you can add items to the Graph Members tree to create a live property or single trend object graph (see Figure 441).

Figure 441. Graphing Control-Selecting Live Property members

Site: Type: Name: Property:	BASDAUTO VariTrane UCM 1 Production Manager VAV Active Heat Setpoint	001	Add >>		araph Members → Production → Production → Site Na → Object 1 → Object 1 → Property → Graph (1 → Legend → Axis: Y1	Manager VAV/A Manager VAV/A me: BASDAUTC Type: VariTrane Name: Productic y Name: Active H Color: Green Text: Productio	ctive Coo ctive Hea UCM I in Manage Heat Setp n Manage
				Color:	Green		-
				Legend:	Production N	fanager VAV/Ad	stive Hea

To set the graph members for live properties:

- 1. With the Graphics Control editor open, click the graphing symbol button on the tool palette, then click anywhere in the Graphics editor. The Graphing Control editor displays with the Members tab active.
- 2. In the Site box, select the site name. Once the name is selected, the Type, Name, and Property fields are filtered to only display those objects defined in the site.
- 3. In the Type list box, select the object type for the graph.
- 4. In the Name list box, select the name of the object.
- 5. In the Property list box, select the property to be sampled.
- 6. Click Add to add the selected property to the Graph Members tree.

Note:

You are only allowed to add up to four properties to the tree. Then the Add button is not available. Clicking on the plus (+) sign, expands the list to show the selected graph properties.



- 7. Repeat steps 2-6 above to add other properties to the list of members, as necessary.
- 8. To remove properties from the Graph Members tree, highlight the selection and click Remove.
- 9. To add a Trend member and select graph plot properties, see the following sections.
- 10. Click OK to create the graph and return to the Graphics editor's main screen, where the Graph field is displayed (see Figure 443 on page 520).

To set the graph members for a single Trend object:

- 1. In the Site box, select the site name.
- 2. In the Type list box, select a Trend (see Figure 442).

Figure 442. Graphing Control-Selecting Trend Object Members

a <mark>phing Cor</mark> 1embers G	ntrol iraph Settings Axis			
Site:	BASDAUTO	Y	Add >> Graph Members	
Туре:	Trend	V		
Name:	test	001 002 🔽		
Property:	W1 Temp Present Value	•		
			Color: Green Legend: test/W1 Temp Present Value	•
			Axis: © Y1 C Y2	
			OK Cancel	Help

- 3. In the Name list box, select the name of the object.
- 4. In the Property list box, select the property to be sampled. Only members of the selected trend can be added to the graph.
- 5. Click Add to add the selected property to the Graph Members tree.
- 6. Repeat steps 2-5 above to add other properties to the list of members, as necessary.
- 7. To remove properties from the Graph Members tree, highlight the selection and click Remove.



- 8. To select graph plot properties, see "To select graph plot properties:" on page 520
- 9. Click OK to create the graph and return to the Graphics editor's main screen, where the Graph field is displayed (see Figure 443).

Figure 443. Graph Field



To select graph plot properties:

- 1. In the Graph Members tree, highlight the graph member property name to assign color, Y1/Y2, and legend text.
- 2. In the Color list box, select a color for the graph and legend text. You should select different colors for each item graphed. For pie and bar charts, an automatic color generation is used to color each of the samples on the plot.
- 3. The Y1-axis is the default selection. Use Y1 for single trend items and similarly grouped items. Use Y2 for dissimilar items that you need to show resolution on.

Note:

Y2 items will always be a line drawn on the graph, except for Area (3D). In Area (3D), Y2 selections are graphed against the Y1-axis.

4. Click OK to save the information and return to the Graphics editor, where the Graph field is displayed (see Figure 443).

Selecting the Graph Type

Select the graph type on the Graph Settings tab. There are six graph types to choose from (line, pie, area, scatter, and bar).

Note:

All except the line graph can be viewed in two or three dimensions.



To choose a graph type:

- 1. Open the Graphing Control editor.
- 2. Click the Graph Settings tab to display the graph types (see Figure 444).
- 3. In the Graph Title field, type the title you want to appear above the graph.

Graphing Control Members Graph Settings Axis		
Graph Type:		Graph Properties
Line Pie	Pie (3D)	Graph Title:
Area (3D) Scatter	Color:
		Refresh Rate: 0 = 10 = 10 = Hr : Min : Sec
Scatter (3D) Bar	Bar (3D)	
		OK Cancel Help

Figure 444. Graphing Control—Graph Settings Screen

- 4. In the Background Color field, select the background color that the graph title, plot, and time stamps will appear on.
- 5. In the Refresh Rate field, select the sampling rate for the graphed properties. The selected and plotted properties are all sampled at this rate. The time stamp appears in military time.
- 6. Click OK to save the information and return to the Graphics editor, where the Graph field is displayed (see Figure 443 on page 520).

Note:

This tab can be accessed at any time in the runtime mode from a pop-up menu item by right-clicking on the graph. This allows you to quickly change graph types, while keeping the graphic field open.



Setting up Graph Samples

When setting up a graph, you can also set the axis labels of the object. The default is to place ticks and time stamps on the graph once per sample. At this screen you can also assign a title to the X/Y-axis.

To assign titles and set up graph samples:

- 1. Open the Graphing Control editor.
- 2. Click the Axis tab to display the Axis screen (see Figure 445)

Figure 445. Graphing Control—Axis Screen

Graphing (Control						×
Members	Graph Settings	Axis					
	Y1 Title:						
	Y2 Title:						
-× Av	0					_	
	Title:			-			
			_				
	Ticks Every:	1	Samples				
	Labels Every:	10	Samples				
					ок 1	Cancel	Help
						Canobi	

- 3. In the Y1 Title field type a title. The title is automatically centered to the left of this axis. If you are also using the Y2-axis, type a title. The title is automatically centered to the right of this axis.
- 4. In the X-axis Title field, type a title. The title is automatically centered below the X-axis.
- 5. In the Ticks Every field, type the number of samples to be counted before a tick is placed on the graph.
- 6. In the Labels Every field, type the number of samples to be counted before a label is placed on the graph. Labels are the sampled time stamps in HH.MM.SS format.
- 7. Click OK to save the information and return to the Graphics editor, where the Graphic field is displayed (see Figure 443 on page 520).



Chapter 31 Using the Calculations Editor

You can create calculation objects that perform calculations based on selected system data, such as the information provided in property referencer edit controls. Calculations can be performed and saved for a time period that you define. The resulting calculated data can then be used in trends, graphic displays, and alarms.

You create and edit calculations using the Calculations editor. The following section describes the calculation types and their formulas.



About Calculation Types

Tracer Summit includes the following calculation types:

- Average
- Cool Flow Rate
- Heat Flow Rate
- Maximum
- Minimum
- Meter Totalization
- Peak for *X* Minute Intervals (X = 5, 15, 30, or 60)
- Total Cooling Degree Days
- Total Heating Degree Days
- Total Run Hours/Starts

These calculation types and their respective calculation formulas are defined as in the sections that follow.

Average

The Average calculation returns the average value for the current day and the current billing period.

```
Today's Avg = A / N
```

A = Running total N = Counter for number of samples Today's Avg = New Average

Processing: Once per minute. If the enable referencer is on, the referenced analog value is added to the running total (A), and the counter (N) is incremented. The running total (A) is divided by the counter (N) to obtain the average. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Cool Flow Rate

The Cool Flow Rate calculation typically measures the total energy required to provide cooling to a building or area. This calculation looks at two factors: the flow rate of the fluid (air or water) and the temperature differential across the process.

Total = Total + (Flow Rate x Conv x (Temp 2 - Temp 1))

Flow Rate = Measured Flow Rate Conv = Edited Conversion Factor Temp 2 = Entering Temperature Temp 1 = Leaving Temperature



Note:

The Cool Flow Rate calculation requires a conversion factor to scale the flow measurement device and account for the heat content of the fluid. If the calculation is for a constant volume process, you must assign an analog output with a default value of the volume for the Flow Rate referencer.

Processing: If the enable referencer is on and temperature 2 (Temp 2) is greater than temperature 1 (Temp 1), the cool flow value (*Flow Rate x Conv x [Temp 2 - Temp 1]*) is added to the total cool flow value (*Total*). The calculation is evaluated each minute, provided the temperature differential (*Temp 2 - Temp 1*) remains positive. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Typical Application: You can use Cool Flow Rate calculations to accumulate the BTU output of chillers, VAV boxes, fan coils, air handling units, and so on. You can use the calculated results for energy reports or tenant billing. The following illustrations demonstrate some typical applications.

For air flowing through a coil:

Temp 2 = (1)Temp 1 = (4)

For coil water:

Temp 2 = 3Temp 1 = 2



For condenser water:

Temp 2 = (3)Temp 1 = (4)

For chilled water:

Temp 2 = (1)Temp 1 = (2)





Heat Flow Rate

The Heat Flow Rate calculation typically measures the total energy required to provide heating to a building or area. This calculation looks at two factors: the flow rate of the fluid (air, water, or steam) and the temperature differential across the process.

Total = Total + (Flow Rate x Conv x (Temp 1 - Temp 2)

Flow Rate = Measured Flow Rate Conv = Edited Conversion Factor Temp 2 = Entering Temperature Temp 1 = Leaving Temperature

Note:

The Heat Flow Rate calculation requires a conversion factor to scale the flow measurement device and account for the heat content of the fluid. If the calculation is for a constant volume process, you should assign an analog output with a default value of the volume for the Flow Rate referencer.

Processing: If the enable referencer is on and temperature 1 (*Temp 1*) is greater than temperature 2 (*Temp 2*), the heat flow value (*Flow Rate x Conv x* [*Temp 1 - Temp 2*) is added to the total heat flow value (*Total*). The calculation is evaluated each minute, provided the temperature differential (*Temp 1 - Temp 2*) remains positive. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Typical Application: You can use Heat Flow Rate calculations to accumulate the BTU output of boilers, fan coils, or air handling units. You can use the calculated results can be used for energy reports or tenant billing. The following illustrations demonstrate some typical applications.



About Calculation Types



Maximum

The Maximum calculation returns the highest value for the current day and current billing period.

Processing: If the enable referencer is on, the current analog value is compared to the present maximum value. If the current analog value is greater than the present maximum value, then the current analog value is saved as the new maximum value. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Note:

If the current analog value is equal to the present maximum value, the current value is *not* saved as the new maximum value.

Typical Application: The Maximum calculation typically determines the highest space temperature that has occurred in a tenant space.

Minimum

The Minimum calculation returns the lowest values that have occurred during the current day and current billing period.

Processing: If the enable referencer is on, the current analog value is compared to the present minimum value. If the current analog value is less than the present minimum value, the current analog value is saved as the new minimum value. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Note:

If the current analog value is equal to the present minimum value, the current value is *not* saved as the new minimum value.

Typical Application: The Minimum calculation typically determines the lowest temperature that has occurred in a space overnight.

Meter Totalization

The Meter Totalization calculation totals metered flow rates, such as gas, electric, and water.

Total = Total + (Meter Value x Conv)

Total = Meter Total Meter Value = Referenced Value Conv = Edited Conversion Factor

Processing: If the enable referencer is on, the meter value conversion factor (*Meter Value x Conv*) is added to the meter total (*Total*). The referenced value (*Meter Value*) is added to the total (*Total*) each minute. Calcu-



Using the Calculations Editor

lated values are saved for the current and previous day and the current and previous billing period.

Note:

To set up this calculation, you must connect a metered input (pulse or analog) to a BCU I/O Module, PCM, UPCM, or MP580/ 581. You need to know the operating specifics, such as type or scaling for the selected meter, to determine the appropriate conversion factor (*Conv*). A typical pulse meter input, for example, is attached to a PCM binary input and configured to measure electrical usage in KW. This rate (in KW) is stored in the PCM object as a Pulse Accumulator property and is referenced by the Meter Totalization calculation object. To total this in KW, the conversion factor is 0.01667, or KW/60 samples per hour.

Typical Application: The Meter Totalization calculation typically totals quantities that are metered by utilities, such as gas, electric, or water.

Peak for X Minute Interval

The Peak for X Minute Interval calculations combine a maximum and an average to determine the highest value that has occurred over a specified interval. An average value is collected over the specified time interval and compared to an existing maximum. If the sampled average is greater than the existing maximum, it becomes the new peak value. Peaks are calculated for the current day and current billing period.



X = Number of Minutes in the Selected Interval Sum X = Sum of Last X Values New Value = New Value To Be Averaged Temp Peak = Temporary Peak Value

Processing: If the enable referencer is on, the temporary peak (*Temp Peak*) calculation is performed. If the calculated temporary peak value (*Temp Peak*) is greater than the present peak value, the peak value is set equal to the temporary peak value (*Temp Peak*). If the temporary peak value (*Temp Peak*) is less than or equal to the peak value, the peak value retains its current value and is not reset. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Typical Application: Peak calculations typically record the maximum electrical usage in kilowatts. The logic used in the Peak calculation mimics the logic that electrical utilities use to bill customers for electrical usage over a shifting time frame.

Note:

Electrical meters are typically pulse meters. If brought into a PCM, UPCM, or MP580/581, the controller can calculate a KWH rate that the calculation object can reference.



Total Cooling Degree Days (CDD)

Cooling degree days indicate the external environmental conditions and measure the amount of time in a day that the outside air temperature was warmer than the base temperature. The Total Cooling Degree Days calculation compares the outside air temperature to a base temperature each minute and increments the cooling degree days value when the outside air temperature is above that base temperature. Typically, 65° F is the base temperature, but the break-even temperature of the building may be a better value for calculating cooling degree days.

OAT - Base Temp CDD = Deg Total + 24 Hours x 60 Min

Deg Total = Total Degrees Cool Today Base Temp = Edited Base Temperature OAT = Outside Air Temperature

Processing: If the enable referencer is on and the base temperature (Base Temp) is less than the outdoor air temperature (OAT), the difference of the outdoor air temperature and base temperature (OAT - Base Temp) is divided by the total cooling minutes $(24 Hours \ x \ 60 \ Min)$. The resulting value is then added to the degree total $(Deg \ Total)$ for that day and the degree total for the billing period. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Typical Applications: Cooling Degree Day calculations compare weather conditions. They are valuable as a means of accounting for changes in the cooling load from one year to the next.





Total Heating Degree Days (HDD)

Heating degree days indicate the external environmental conditions and measure the amount of time that the outside air temperature was cooler than the base temperature. The Total Heating Degree Days calculation compares the outside air temperature to a base temperature each minute and increments the heating degree day value when the outside air temperature is below that base temperature. Typically, 65°F is the base temperature, but the break-even temperature of the building may be a better value for calculating heating degree days.

Base Temp - OAT HDD = Deg Total + 24 Hours x 60 Min

Deg Total = Total Degrees Heat Today Base Temp = Edited Base Temperature OAT = Outside Air Temperature

Processing: If the enable referencer is on and the value of the outdoor air temperature (OAT) is less than the base temperature (Base Temp), the difference of the base temperature and outdoor air temperature (Base Temp - OAT) is divided by the total heating minutes $(24 Hours x \ 60 Min)$. The resulting value is then added to the degree total $(Deg \ Total)$ for that day. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Typical Applications: Heating Degree Day calculations compare weather conditions. They are valuable in energy reporting to account for changes in the heating load from one year to the next.



Total Run Hours/Starts

The Total Run Hours/Starts calculation monitors the value of a binary referencer and accumulates Run time when the referenced input is on. Whenever the referenced input changes from off to on, a Start is accumulated.

N = N + 1 T = T + 1/60

N = Number of Starts T = Total Number of Run Hours

Processing for Starts: If the enable referencer is on and the binary referencer transitions from Off to On, the number of starts (N) is incremented. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Processing for Run Hours: If the enable referencer is on and the property referencer is on, the total number of run hours (T) is incremented. Calculated values are saved for the current and previous day, and for the current and previous billing period.

Typical Application 1: Run hours and starts typically determine equipment maintenance schedule.

Note:

For typical application 1, you should *not* clear run hour and start calculations at the end of the billing period. These calculations typically reference an analog input, which generates an alarm when a defined run hour limit or starts limit has been exceeded. For example, a chiller might be set to generate an alarm when it has run for 100 hours, or when it has more than 200 starts.

Typical Application 2: Use the Run hours calculation to determine how many hours an area has been in timed override. For this application the property reference should be "Timed Override In Control" for an area.



Accessing the Calculations Editor

1. From the Setup menu, click Calculations. The Select Calculation dialog box displays (see Figure 446).

Se	elect Calculation
	Name Average CDD ICS BCU Cooling Degree Day Heat Flow Rate Heating Degree Day Max Temperature Minimum Temperature Peak for 30 Minute Interval RTA Total Run Hours/Start
	OK New Cancel Help

- 2. Click the desired calculation object.
- 3. Click OK. The Calculations editor Status screen displays. Figure 447 shows the editor for the Heat Flow Rate calculation.

Figure 447. Calculations Editor for Heat Flow Rate

Status Setup Classes		
Calculation Name: Heat Flow Rate		
	BTU	
History		Clear
Today's Total Heat Flow Rate:	0.000	
Yesterday's Total Heat Flow Rate:	0.004	
Current Billing Period Heat Flow Rate:	0.010	
Last Billing Period Heat Flow Rate:	0.000	
- BCU		
Name: ICS University BCU		
Communications: BCU Online		



Creating a New Calculation Object

To create a new calculation object, you must:

- Open and name a new calculation object and choose a calculation type (as described in this section)
- Set up the calculation object, including choosing whether the calculation will be controlled by a referencer and choosing whether to reset the calculation at the end of the billing period (see "Setting Up a Calculation Object" on page 535)
- Define security access (see "Setting Security Access for a Calculation Object" on page 538)
- Save the calculation object

To create a new calculation object:

- 1. From the Setup menu, select Calculations. The Select Calculation dialog box displays.
- 2. Click New. The New Calculation Name dialog box displays (see Figure 448).

Figure 448: New Calculation Name Dialog Box

New Calculation Na	ne		×
Calculation Name:			
	OK	Cancel	Help

3. In the Calculation Name field, enter a name. Use a maximum of 32 characters.

Note:

You must enter a name before you can save the new calculation object. You can modify the name from the Setup screen of the Calculations editor.

4. Click OK. The Select Calculation Type dialog box displays (see Figure 449 on page 534).



Using the Calculations Editor

Average Peak for 05 minute interval Peak for 15 minute interval Peak for 30 minute interval Peak for 60 minute interval Minimum Maximum Total Run Hours/Starts Total Heating Degree Days Total Cooling Degree Days Heat Flow Rate Cool Flow Rate
Meter Totalization

Figure 449. Select Calculation Type Dialog Box

- 5. Select the type of calculation you want to create.
- 6. Click OK. The Calculations editor displays.
- 7. To set up the calculation, follow the steps in "Setting Up a Calculation Object" on page 535.



Setting Up a Calculation Object

When you set up a calculation object, you must select a property for each referencer field. (For detailed information on using referencers, see Chapter 3, Using Referencer Edit Controls).

To set up a calculation object:

1. From the Calculation editor, click the Setup tab to display the Setup screen. Figure 450 shows the Calculation editor Setup screen for the Heat Flow Rate calculation.

Figure 450. Calculation Editor Setup Screen

Status Setup Classes
Calculation Name: Heat Flow Rate
Flow Rate Referencer: Chiller B / Absorber Water Flow Rat
Temp 2 Referencer: Chiller B / Absorber Water Temp: L
Temp 1 Referencer: Chiller B / Absorber Water Temp: E
Conversion Factor: 0.0000080
Calculation active when Temp 1 < Temp 2
Reset at End of Billing Period
C Last Day of Month
In Define Day of Month 30 ★
C End of Billing Period
Units: BTU
Liose Save Upen Another Heip

2. For each referencer field, click the referencer button (...) to the right of the field. The Select Property Reference dialog box displays (see Figure 451 on page 536).



Using the Calculations Editor

Select Property	Reference	x
<u>T</u> ype:	Absorption Chiller (UCP2)	
<u>N</u> ame:	Chiller B	•
Property:	Absorber Water Flow Rate	•
	OK Cancel	Help

Figure 451. Select Property Reference Dialog Box

- 3. In the Type field, select the type of object.
- 4. In the Name field, select the object's name.
- 5. In the Property field, select an analog property.
- 6. Click OK to return to the Setup screen. The referencer field now displays the name and property of the chosen referencer. The status of the referenced property is now displayed.
- 7. In the Conversion Factor field, keep the default value or enter a new conversion factor value for the calculation.
- 8. In the Enable field, choose whether the calculation will be enabled, disabled, or controlled by a referencer.

To enable the calculation process:

• Select Enabled to allow the calculation process to continue.

To discontinue the calculation process:

• Select Disabled to stop the calculation process.

To control the calculation process by a referencer:

- Click the Mode button to the left of the Enabled/Disabled field. The referencer field changes to "???."
- To select a property referencer, click the referencer button (...). The Select Property Reference dialog box displays. Select a binary property and click OK.
- In the On Delay for Referencer field, specify the amount of time the referencer must be on before analog property referencer data is included in the calculation.
- 9. To reset the calculation object at the end of the billing period, select the Reset at End of Billing Period check box.
- 10. In the Units field, select the units to display for the calculation.
- 11. Click Save.



Clearing Calculation Data

You should clear the historical information stored in a calculation object after any property on the Setup screen is changed. The historical information displays in the History group of the Status screen. The Status screen's Clear button is available whenever non-zero data is displayed.

To clear calculation data:

- 1. From the Calculations editor, click the Status tab to display the Status screen.
- 2. Click Clear. The Clear Calculation Data dialog box displays (see Figure 452).

Figure 452. Clear Calculation Data Dialog Box

Clear Calculation Data
Clear Today's Calculation
Clear Yesterday's Calculation
Clear Current BP Calculation
Clear Last BP Calculation
<u>D</u> K <u>C</u> ancel <u>H</u> elp

- 3. Click the check box next to the quantities you want to clear.
- 4. Click OK to save and reset the quantities to 0.000.

Note:

Clearing of data occurs the next time the calculation is run. This may occur as much as one minute following the clearing of data.



Setting Security Access for a Calculation Object

1. From the Calculations editor, click the Classes tab to display the Classes screen (see Figure 453).

Figure 453. Calculations Editor Classes Screen

Status Setup Classes	
Security Classes	

2. Click Security Classes. The Change Security Classes dialog box displays (see Figure 454).

lass	Class Name	Access
1	System Operator	N
2	Day Operator	V
3	Night Operator	
4	Security	
5	Chiller Plant	
6	Administration	
7	Manufacturing	
8	ICS University	
9	Engineering	
10	Applications	
11	Marketing	
12	Finance	
13	Training	
14	Product Commun.	
15	Human Resources	
16	Production	

Figure 454. Change Security Classes Dialog Box

- 3. Click the Access field next to each class to grant or deny access. A check in the field grants access. No check denies access.
- 4. Click OK to display the Classes screen.
- 5. Click Save.

Deleting a Calculation Object

You cannot delete a calculation object from the Calculations editor. Use the Delete Object function from the Tools menu to delete a calculation object (see Chapter 39, "Deleting Objects and Sites").



Chapter 32 Designing Reports

The ability to create reports that are tailored to your facility is a key benefit of the Tracer Summit system. Reports provide the information you need to make decisions about building operations. Reports help you manage utility costs, equipment efficiency, and tenant billings.

The Report editor allows you to design easy-to-run, easy-to-read reports. You can use any information available in Tracer Summit to create a report. You can define report elements such as titles, footers, fonts, and page orientation. You can also instruct the system to automatically generate custom reports at regular intervals. Automatically generated reports can be printed and stored to disk for data archiving.

Use reports for:

- Record keeping and documentation
- Energy monitoring
- Troubleshooting

You run reports using the Reports Viewer, which is accessed from the Status menu or from the Reports button on the toolbar. For instructions on running reports, refer to the *Tracer Summit Daily Operations* guide.

Note:

For Tracer 100 sites, you can only use the Reports Viewer to see the Diagnostic Report for the site. You cannot use the Reports editor to create a report. Tracker sites do not have reports to view or edit.



Report Types

Tracer Summit supports two types of reports—live and trend.

- **Live Reports**. Live reports display selected values at a particular point in time (see Figure 455 on page 541).
- **Trend Reports**. Trend reports use trend objects to display historical data obtained over a period of time (see Figure 456 on page 542).

Live Reports

Live reports display values of selected properties at the time the report is run. Each line in a live report contains a row heading, followed by the current value(s) for the property. A live report can display three types of members:

- Any single displayable property in the system
- A calculation object with predefined properties
- A blank row

When a calculation object is used in a live report, the report displays data based on the calculation type it is performing. The current value, today's value, yesterday's value, current billing period's value, and last billing period's value are displayed on the same row. See Figure 455 on page 541.



Live Reports

Figure 455. Sample Live Report

AS	SHRAE Guideline 3 Report	
Model Number: Serial Number:		
	Current	
	Value	
hiller Name	Chiller E	
resent Value	Uccupied	
Derating Mode	Stop: Diagnostic Shutdown	
∶hilled Water Setpoint	53.00	
Current Limit Setpoint	88.00	
Refrigerant Management		
rvenig Concentration Purge Purpout Rate	0.00	
Total Purge Run Time	0.00	
Puroe Status	Idle	
Total Purge Pumpout Time	0.00	
ompressor Data		
Discharge Reffig Temp Compressor Rup Time	0.00	
Compressor Starts	85	
Dil Diata		
Oil Temperature	112.50	
High Side Oil Pressure	- 14,90	
Oil Press: Differential	0.00	
Evaporator Data		
Saturated Refrig Temp	46.50	
Approach Temperature	3.00	
Chilled Water Data		
EnteringWater Temp	54.10	
Leaving Water Temp Entering Water Pressure	4850	
Leaving Water Pressure	0.00	
	Page 1 of 2	



Trend Reports

Trend reports allow you to view, print, and save the historical data collected in trend objects (see Figure 456). For information about setting up a trend object, see Chapter 29, "Trending Data".

Figure 456. Sample Trend Report

	Slandard Fend Papel Critical Room Tempeolues		10289
Date / Time	Auditorium NW VAV Zone Temperature	Auditorium SE VAV Present Value	Auditorium Stage VAV Present Value
10/20/98 5:00 PM	81.20	Occupied	Occupied
10/23/98 6:00 PM	79.40	Occupied	Occupied
10/23/98 7:00 PM	81.20	Occupied	Occupied
10/23/98 8:00 PM	82.60	Occupied	Occupied
10/23/98 9:00 PM	83.60	Occupied	Occupied
10/23/98 10:00 PM	84.40	Occupied.	Occupied
10/23/98 11:00 PM	84.00	Occupied	Occupied
10/24/98 12:00 AM	84.70	Occupied	Occupied
10/24/98 1:00 AM	85.10	Occupied	Occupied
10/24/98 2:00 AM	85.20	Occupied	Occupied
10/24/98 3:00 AM	85.00	Occupied	Occupied
10/24/98 4:00 AM	85.70	Occupied	Occupied
10/24/98 S:00 AM	85.70	Occupied	Occupied
10/24/98 6:00 AM	85.80	Occupied	Occupied
10/24/98 7:00 AM	84.20	Occupied	Occupied
10/24/98 8:00 AM	82.00	Occupied.	Occupied
10/24/98 9:00 AM	82.50	Occupied	Occupied
10/24/98 10:00 AM	83.80	Occupied	Occupied
10/24/98 11:00 AM	80.40	Occupied	Occupied
10/24/98 12:00 PM	81.60	Occupied	Occupied
10/24/98 1:00 PM	83.10	Occupied.	Occupied
10/24/98 2:00 PM	81.00	Occupied	Occupied
10/24/98 3:00 PM	80.70	Occupied	Occupied
10/24/98 4:00 PM	82.50	Occupied	Occupied
10/24/98 S:00 PM	83.90	Occupied	Occupied
10/24/98 6:00 PM	84.30	Occupied	Occupied
10/24/98 7:00 PM	84.70	Occupied	Occupied
10/24/98 8:00 PM	80.40	Occupied.	Occupied
10/24/98 9:00 PM	81.00	Occupied.	Occu pied
10/24/98 10:00 PM	81.70	Occupied.	Occu pied
10/24/98 11:00 PM	82.70	Occupied.	Occu pied
10/25/98 12:00 AM	80.20	Occupied.	Occu pied
10/25/98 1:00 AM	80.70	Occu pied	Occupied
10/25/98 2:00 AM	84.10	Occupied	Occupied

A trend report can display data collected over multiple time periods, such as a trend of space temperatures and relative humidity. It can also display multiple properties over the same time period, such as a 12-month chiller summary report. A custom trend report may contain information from multiple trend objects, even at different intervals.

A trend report displays the date and time in the left column, and values from the selected trends in subsequent columns. You can use as many trend members as you would like in a report. If a sample does not exist for an object and property for a given time, the data cell is blank. For example, a custom report contains a trend object with a five-minute interval, and a trend object with a 30-minute interval. The trend object with the five-minute interval displays data for each five-minute interval. The trend object with the 30-minute interval displays data only at half-hour intervals. The rows that contain five-minute intervals contain blank areas. If a trend sample was unable to be collected, the report will display "???".

Running a Report



Standard Reports

Tracer Summit includes a set of predefined standard live and standard trend reports.

Standard live reports provide status information for a single object. Most objects in the system have at least one associated standard live report. You can create your own standard live reports. You can also edit predefined standard live reports.

Standard trend reports (known as quick trend reports in previous versions of Tracer Summit) display a pre-formatted trend report containing all the trend members in a trend object. Standard trend objects cannot be edited. You can, however, create your own custom trend reports.

Running a Report

You run a report using the Report Viewer, which you can access by clicking the Reports button on the toolbar or selecting Reports from the Status menu. You can also run a standard report from a UCM or application editor by clicking the Report button on the editor's Status screen.

After you run the report, you can print it, saved it to a Report (.rpt) file, or export it to a tab delimited text file (.TXT). For more information about running a report, see the *Tracer Summit Daily Operations* guide.

Note:

For Tracer 100 sites, you can only use the Reports Viewer to see the Diagnostic Report for the site. You cannot use the Reports editor to create a report. Tracker sites do not have reports to view or edit.

Accessing the Report Editor

When you design a new report or edit an existing report, Tracer Summit allows you to select from three report types—standard live, custom live, or custom trend. When you select a report type, you have access to all existing reports of that type. You can open an existing report to edit it. You can also use an existing report as a template for a new report or open a blank report.

The procedures for selecting a standard live report and for selecting a custom live or custom trend report are slightly different. After you select the report, the Report editor displays.

Note:

For Tracer 100 sites, you can only use the Reports Viewer to see the Diagnostic Report for the site. You cannot use the Reports editor to create a report. Tracker sites do not have reports to view or edit.



Selecting a Standard Live Report

1. From the Setup menu, select Report editor. The Select Report to View dialog box displays (see Figure 457).

Note:

If you need help with reports, click the Tutorial button to open the Tracer Summit Daily Operations Tutorial.

Figure 457. Select Report to View Dialog Box

Select Report to View		x
Run Report Type:		
C Standard Live	C Recent Reports	
Standard Trend	All Objects In Override Report - BMTX Sit 📃 💌	
C Custom		
Open a Saved Report		
O Historical Trend		
O Mean Kinetic Temperature	(MKT)	
C Tracer Summit Audit Trail		
	OK Cancel Help	

- 2. Click the Standard Live option.
- 3. Click OK to display the Select Standard Live Report dialog box (see Figure 458).

Figure 458. Select Standard Live Report Dialog Box

Select Standard Live Report	×
Standard Report Type: Area	Units: C Inch-Pound (I-P) International System
Report Name: Standard Area Report	
OK New	Cancel Help

- 4. Click the arrow to the right of the Standard Report Type field to select a report type. The available reports that match the selected type appear in the Report Name list.
- 5. In the Units field, select the units of measure (either Inch-Pound or International System) for the report. The default selection is the units of measure defined for the site in site configuration.



- 6. If you wish to open a blank report containing default selections, click New to display the Report editor.
- 7. If you wish to edit an existing report or use an existing report as a template for a new report, click the name of the report you wish use in the Report Name list.
- 8. Click OK to display the Report editor for the selected report.

To edit the report, follow the instructions in "Designing or Editing a Report" on page 548.

Selecting a Standard Trend or Custom Report

1. From the Setup menu, select Report editor. The Select Report to View dialog box displays (see Figure 459).

Figure 459.	Select Report	Type Dialog	Box
-------------	---------------	--------------------	-----

Select Report to View		×
Run Report Type: C Standard Live Standard Trend C Custom C Open a Saved Report C Historical Trend	Recent Reports All Objects In Override Report - BMTX Sit	
C Mean Kinetic Temperature C Tracer Summit Audit Trail	(MKT)	

- 2. Click the Standard trend or Standard Trend option.
- 3. Click OK to display the Select Report dialog box (see Figure 460).

Figure 460. Select Report Dialog Box

Select Report	×
Chiller Analog Report	
Chiller Binary Report	
l emperature Report	
1	
OK Naw	
New New	Laricei Help



- 4. If you want to create a new report containing default selections, click New to display the Report editor.
- 5. If you wish to edit an existing report or use an existing report as a template for a new report, click the name of the report you wish to use.
- 6. Click OK to display the Report editor for the selected report. To edit the report, follow the instructions in "Designing or Editing a Report" on page 548.

Opening a Saved Report

1. From the Setup menu, select Report editor. The Select Report to View dialog box displays (see Figure 461).

Figure 461. Select Report to View Dialog Box

Select Report to View		X
Run Report Type: C Standard Live C Standard Trend C Custom Open a Saved Report C Historical Trend C Mean Kinetic Temperature C Tracer Summit Audit Trail	Recent Reports All Objects In Override Report - BMTX Sit	
	OK Cancel Help	

- 2. Click the Open a Saved Report option.
- 3. Click OK to open the Reports folder (see Figure 462 on page 547).



Figure 40	62. Reports	s folder
-----------	-------------	----------

Open					<u>? ×</u>
Look jn:	C Reports		•	+ 🗈 💣 🎟-	
My Recent Documents Desktop	Analog input.rpt				
My Documents					
My Computer					
My Network	File <u>n</u> ame:	*.rpt		•	<u>O</u> pen
	Files of type:	Report (*.rpt)		•	Cancel

4. Highlight the report you want, and then click the Open button to display the report in the Reports editor.

Opening a Previously Viewed Report

1. From the Setup menu, select Report editor. The Select Report to View dialog box displays (see Figure 463).

Figure 463. Select Report to View Dialog Box

Select Report to View
Run Report Type: Standard Live • Recent Reports Standard Trend All Objects In Override Report • BMT× Sit Custom Open a Saved Report Historical Trend MKT) Tracer Summit Audit Trail
OK Cancel Help

- 2. Click the Recent Reports option.
- 3. Click the arrow to the right of the field to select a report.
- 4. OK to display the Report Editor for the selected report.



Designing or Editing a Report

When designing or editing a report, you can:

- Edit the report's name or page orientation (see "Editing the Name or Orientation of the Report" below.)
- Define the members to be included in the report (see "Defining Report Members" on page 548)
- Format the layout of the report (see "Entering Titles and Formatting the Report" on page 552)
- Specify when the report will run (see "Scheduling a Report" on page 554)

Editing the Name or Orientation of the Report

1. From the Report editor, click the Setup tab (see Figure 464).

Figure 464. Report Editor Setup Screen

	Setup Members Layout	
Γ	Report Name: Standard Area Report	
	Orientation Portrait A C Landscape	

- 2. Enter a name for the report in the Report Name field. Make the name as informative as possible. Use a maximum of 32 alphanumeric characters.
- 3. Choose the report's page orientation (portrait or landscape).

Defining Report Members

The information presented in the body of the report is defined in the Members screen of the Report editor. You select the type of data and the specific properties of the data that you want to include in the report. Your selections become the *report members*. You define the row (for a live report) or column headings (for a trend object), and the order in which the data is displayed. You can also add blank rows between report members. Blank rows add space between the data rows and make the report more readable. Blank rows may also contain row headings, which are generally used for section titles.



The procedures for defining the body of the report vary for a standard live report, a custom live report, and a custom trend report.

Note:

There are a few membership rules unique to the standard live report type. When you run a standard live report, you should understand these rules:

- Standard live reports may contain properties from a single object type.
- If a new report is created, the Type field will be available until the first report member is defined.
- Subsequent report members must be the same object type.

Defining the Members of a Standard Live Report

1. From the Report editor, click the Members tab (see Figure 465).

Figure 465. Report Editor Members Screen

Setup Members Layout	
Type: Area Absorption Chiller (UCP2) Analog Input Analog Output Analog Value Area Property: Present Value Occ Cool Setpoint Occ Heat Setpoint Occ Heat Setpoint Outdoor Sensor Present Value	Order Report Members: Area / Auto Heat Cool Input ************************************

- 2. To insert a property to the Report Member list, click the member immediately above where you want to add the new member.
- 3. Click the name of the property you wish to add in the Property list.
- 4. Click Add to add your selection to the Report Members list.
- 5. With the member you just added highlighted in the Report Members list, enter the label you want the report to display for that member in the Row Heading field. You can enter one or two row headings.
- 6. Continue to define the report members, repeating steps 2 through 5 for each member you wish to add.



Defining the Members of a Custom Live Report

1. From the Report editor, click the Members tab (see Figure 466).

Figure 466. Report Editor Members Screen

Setup Members Layout Schedule	
Type: Analog Input Analog Dutput Area Binary Output Centrifugal Chiller (UCP2)	Customer Support / Present Value
Name: AHU #1 Discharge Air Temp AHU #1 Discharge Air Temp	Add >> << Remove
Property: Present Value Object Name Object Type Offset Out Of Service Present Value	Add Calculation >> Row Heading: Add Blank Row >> Customer Support Present Value Present Value

- 2. Click the object type in the Type list. Available objects of the selected type are displayed in the Name list.
- 3. Click the object name in the Name list. Available properties of the selected object are displayed in the Property list.
- 4. Click the name of the property in the Property list.
- 5. Click Add to add your selection to the Report Members list.
- 6. With the member you just added highlighted in the Report Members list, enter the label you want the report to display for that member in the Row Heading field. You can enter one or two row headings.
- 7. Continue to define the report members, repeating steps 2 through 6 for each member.
- 8. To add a calculation object to the Report Members, click Add Calculation.



Defining the Members of a Custom Trend Report

1. From the Report editor, click the Members tab (see Figure 467).

Figure 467. Report Editor Members Screen

Setup Members Layout Schedule	
Trend: Trend2 Trend1 Trend2	Report Members: Trend1:Area 1 / Present Value Trend1:Area 1 / Occ Heat Setpoint Trend1:BOP1 / Present Value Trend1:BCU 1 / Analog Input 1[1] Trend2:IntelliPak Rooftop / Present Value Trend2:IntelliPak Rooftop / Auxiliary Temperature
Trend Members: IliPak Rooftop / Auxiliary Temperature Input	Add >>
A0P1 / Present Value 80P1 / Present Value 8CU 1 / Analog Input 2[1] IntelliPak Rooftop / Present Value	<< Remove
IntelliPak Rooftop / Outdoor Air Humidity Av IntelliPak Rooftop / Auxiliary Temperature In IntelliPak Rooftop / Chilled Water Valve Ro	
	Add Blank Row >> IntelliPak Rooftop
	Auxiliary Temperature Input

- 2. Click the name of the trend in the Trend list. Available Trend members for the selected trend are displayed in the Trend Members list.
- 3. Click the name of the member in the Trend Members list.
- 4. Click Add to add your selection to the Report Members list.
- 5. With the member you just added highlighted in the Report Members list, enter the label you want the report to display for that member in the Column Heading field. You can enter one or two column headings.
- 6. Continue to define the report members, repeating steps 2 through 5 for each member.



Changing the Report Member Order

When you run a report, the body of the report will display the member data in the order that they appear in the Report Members list. You can change the order using the Order arrow keys.

To change the report member order:

- 1. From the Report editor's Members screen, click the member name you wish to move in the Report Members list.
- 2. Click the up arrow in the Order field to move the member up one row. Click the down arrow to move the member down one row.

Adding a Blank Row in the Report

- 1. From the Report editor's Member screen, click the member name in the Report Members list immediately before where you wish to add a blank row.
- 2. Click Add Blank Row.
- 3. Provide a row heading for the blank row, if you wish.

Entering Titles and Formatting the Report

Use the Layout screen of the Report editor to format the report, and to prepare the report for display and printing. The Layout screen allows you to enter titles, headings, and footers and format the fonts used in the report. You can use special functions to insert the date, page number, time, and security information in the report (see Table 27). You can enter these functions in any cell in the Header, Column Headings, and Footer fields of the Layout screen.

To Do This:	Enter This:
Insert the current Date	\$D
Insert current report page	\$P
Insert total number of pages in the report	\$N
Inserts the current time	\$⊤
Inserts the Security Information (Site Name, User Name, and Job Title	\$S

Table 27. Entering Date, Page, Time, and Security Functions in a Report

If you are editing an existing report or using an existing report as a template, the current titles will appear in the Layout screen when you open it. If you are creating a new report, the Tracer Summit default layout


selections will appear in the Layout screen. To change the existing settings, select the cell contents and enter a new entry.

To set the page orientation (portrait or landscape) of the report, refer to "Editing the Name or Orientation of the Report" on page 548.

Entering and Formatting the Report Titles

1. From the Report editor, click the Layout tab (see Figure 468).

Figure 468. Report Editor Layout Screen

Setup	Members	Layout	Schedule]			
Heade	er:						
	Left A	igned		Centered	Right Aligned		Font
				Title1		\$D	
				Title2			
Sub	Title1						
Sub	Title2						
Colum	n Headings:						
Sam	nple Headi	ng					Font
<u> </u>							
Body:							
Sam	nple Data						Font
Footer	r:						
	Left A	igned		Centered	Right Aligned	<u> </u>	Font
						<u> </u>	
						Þ	

- 2. Click the desired cells in the Header section and enter the titles you want to display in the report.
- 3. To change the font for a cell, select the cell and click the Font button to the right of the Header section. The Font dialog box displays.
- 4. Select the font, font styles, and size.
- 5. Click OK to close the Font dialog box and display the Layout screen.

Entering and Formatting the Column Headings

- 1. Display the Report editor's Layout screen.
- 2. Click the desired cells in the Column Headings section and enter the column headings you want to display in the report.

Note:

Column headings 2 through 5—which are Today, Yesterday, Last billing period, and Current billing period—only appear in a custom live report that contains calculation report members.



- 3. To change the font for a cell, select the cell and click the Font button to the right of the Column Headings section. The Font dialog box displays.
- 4. Select the font, font style, and size.
- 5. Click OK to close the Font dialog box and display the Layout screen.

Formatting the Body Text

- 1. Display the Report editor's Layout screen.
- 2. To change the font for the body text in the report, click the Font button to the right of the Body section. The Font dialog box displays.
- 3. Select the font, font style, and size.
- 4. Click OK to close the Font dialog box and display the Layout screen.

Entering and Formatting the Report Footer

- 1. Display the Report editor's Layout screen.
- 2. Click the desired cells in the Footer section and enter the footer text you want to display in the report.
- 3. To change the font for a cell, select the cell and click the Font button to the right of the Footer section. The Font dialog box displays.
- 4. Select the font, font style, and size.
- 5. Click OK to close the Font dialog box and display the Layout screen.

Scheduling a Report

Tracer Summit allows you to instruct the system to run custom live and custom trend reports automatically at specific times. You can schedule a report to run daily, weekly, monthly, or annually. You schedule a report in the Schedule screen of the Report editor.

Selecting a Reporting Interval

- 1. From the Report editor, click the Schedule tab. The Schedule screen displays.
- 2. Click the Enable Auto Reporting check box. The rest of the fields on the screen become active.



Setting Up Daily Reports

1. Click Daily in the Auto Schedule Interval field. The field to the right of the Auto Schedule Interval displays options for setting the time for daily reports (see Figure 469).

Figure 469. Report Editor Daily Schedule Options

Setup Members Layout Schedule									
Enable Auto Reporting									
Auto Schedule Interval	Daily								
• Daily	Time 1: 08:00 AM								
C Weekly	Time 2: 08:00 AM								
C Monthly									
O Annually									
Output Ta	108:00 AM								
Uutput To									

- 2. Click the arrows to the right of the Time 1 field to set a time for the first daily report.
- 3. If you want to schedule times for more than one daily report, check the associated check box and set a time in the Time 2, Time 3, and/or Time 4 fields.

Setting Up Weekly Reports

1. Click Weekly in the Auto Schedule Interval field. The field to the right of the Auto Schedule Interval displays options for setting the time for weekly reports (see Figure 470).

Figure 470. Report Editor Weekly Schedule Options

Setup Members Layout Schedule]							
Enable Auto Reporting								
Auto Schedule Interval	Weekly							
C Daily	Time: 12:00 PM							
Weekly	Day: Monday							
C Monthly								
C Annually								
Output To								

2. Click the arrows to the right of the Time field to set a time for the weekly report.



3. Click the arrow to the right of the Day field to set a day for the weekly report.

Setting Up Monthly Reports

1. Click Monthly in the Auto Schedule Interval field. The field to the right of the Auto Schedule Interval displays options for setting the time for monthly reports (see Figure 471).

Figure 471. Report Editor Monthly Schedule Options

Setup Members Layout Schedule	
Enable Auto Reporting Auto Schedule Interval Daily Weekly Monthly Annually Dutput To	Monthly C Use Last Day of Month Define Day of Month Time: 12:00 PM

- 2. Click Use Last Day of Month or Define Day of Month.
- 3. If you select Define Day of Month, click the arrow to the right of the day field to set a day for the monthly report.
- 4. Click the arrow to the right of the Time field to set a time for the monthly report.



Setting Up Annual Reports

1. Click Annually in the Auto Schedule Interval field. The field to the right of the Auto Schedule Interval displays options for setting the time for annual reports (see Figure 472).

Figure 472. Report Editor Annual Schedule Options

Setup Members Layout Schedul	e							
F Enable Auto Reporting								
Auto Schedule Interval C Daily C Weekly C Monthly C Annually	Annually Month: January T Day of Month: 1 Time: 12:00 PM							
Output To								

- 2. Click the arrows to the right of the Month field to set a month for the annual report.
- 3. Click the arrow to the right of the Day of Month field to set a day for the annual report.
- 4. Click the arrow to the right of the Time field to set a time for the annual report.



Setting Output Options for a Report

1. From the Report editor's Schedule screen, click the Output To button. The Output To dialog box displays (see Figure 473).

Figure 473. Output To Dialog Box

0.	ıtput To	X
	Printer –	
	Printer Name:	<default printer=""></default>
		(currently)
	l	
	🔽 Output to	File
	Directory:	C:\Program Files\Tracer Summit\Reports Browse
	File Name:	Auto Generated
		C Specified: Untitled.rpt
		Append to File
	Save as Type:	Report (*.rpt)
		UK Lancel Help

- 2. To direct the system to print the report automatically when it is run, check Printer. The Printer Name field becomes active. The report will be printed to the default Windows printer shown below the Printer Name box.
- 3. Click the arrow to the right of the Printer Name to select a different printer.
- 4. To direct the system to save the report automatically when it is run, check Output to File. The remaining Output to File fields become active.
- 5. To change the default save directory, click Browse to display the Browse for Folder dialog box.
- 6. Select the folder where you want the file saved and click OK. The Output To dialog box displays again.
- 7. In the File Name field, select Auto Generated or Specified. Auto Generated report files are stored in the format *YYMMDD0X*, where *YY* is the year, *MM* is the month, *DD* is the day, and *0X* is the counter for the report. For example, the first report generated on March 23, 1999, is saved to the file name *99032301*.
- 8. If you select Specified, enter the file name you want the system to assign to the report in the field to the right of the Specified field. This file is overwritten each time the scheduled report is generated.



- 9. To add a report to the end of a previous report, select Append to File.
- 10. To change the file type, select a new type in the Save as Type field.
- 11. Click OK to close the Output To dialog box and display the Schedule screen.

Saving the Report

To save a report:

• To save your report, click Save at the bottom of the Report editor, or select Save Report from the File menu.

To copy a report to a new report name:

• With the new report open in the Report editor, select Save Report As from the File menu.

Deleting Reports

Occasionally, you may want to delete reports from the Tracer Summit system. For example, you may want to delete specific reports you created for site setup and troubleshooting.

Note:

After you delete reports from the system, you cannot recover them unless you have a report backup file. Before deleting reports, we recommend backing up all reports that you may want to use again. See the *Tracer Summit Daily Operations Guide* for information on backing up reports, or see Chapter 38, "Restoring into the Tracer Summit Workstation", of this guide for information on restoring reports.

To delete reports:

- 1. Display the Report editor (see "Accessing the Report Editor" on page 543).
- 2. From the File menu, select Delete Reports. The Delete Reports Select Site dialog box displays.
- 3. Select the site that contains the report you want to delete and click OK. The Delete Reports dialog box displays.
- 4. In the Type field, select the type of the report you want to delete. You can delete custom reports or user-defined standard reports. (Pre-defined standard reports included with Tracer Summit may be edited, but cannot be deleted.)
- 5. In the Existing Reports list, select the report names you want to delete.



- 6. Click the Add button. The reports display in the Selected Reports to Delete list. You can also click Add All to add all reports of the selected type to the list of reports to delete.
- 7. To remove any reports from the Selected Reports to Delete list, select the report name and click Remove. You can also click Remove All to clear the list.
- 8. Click the Delete button. You are prompted to confirm the deletion.
- 9. Click Yes. The selected reports are deleted.



Chapter 33 Setting System Options

The System Options editor allows you to customize or change screen, file, and print options to fit your preferences. The selected options affect only the PC Workstation you are working on. Event log capacity settings, however, might affect the performance of multiple workstations in a shared database.

The System Options editor allows you to

- Select the home graphic, (screen that displays when you click Home)
- Display override status from an override button on a graphic
- Display category alarms icons in the toolbar
- Display Alarm pop-up dialogs for event category alarms
- Select the event log printer and alarm options
- Change the default file directories
- Change the workstation device ID for event routing
- Select whether object and property IDs are displayed throughout the Tracer Summit system
- Set up basic e-mail message forwarding services
- Configure connection options for the navigation tree
- Change e-mail profile
- Configure how long to store harvested trend data on the workstation



Changing the Home Graphic

The home graphic displays when you click Home in the Tracer Summit toolbar.

To change the home graphic:

1. From the Tools menu, select Options to display the System Options editor General screen (see Figure 474).

Figure 474. System Options Editor-General Screen

ocations.	Advance	d]						
Graphics Home Graphic: Site I Display Override Status								
To pory 1	olbar V	Max Popups 3	Event Log Capacity	5,000 💌				
jory 2 jory 3 jory 4		3	BCU Event Log Capacity Error Log Capacity	5,000 •				
nter: \\bas e Event Pri	sbns07\TR	3 IN430PS	l	Change				
 ✓ Show Connection Dialog on Incoming Alarms ☐ Disable Workstation Alarm 								
rd Alarms - ilass: iress:		T	Refresh Rate: 1 Minu	ite 💌				
	Locations aphic: Sit isplay Ove Jory 1 Jory 2 Jory 3 Jory 3 Jory 4 Jory 5 Attent Pri Connectio le Worksta ard Alarms illass:	Advance	.ocations Advanced aphic: Site tisplay Override Status jory 1 ✓ jory 2 ✓ jory 3 ✓ jory 5 ✓ apher: \\basbns07\TRN430PS ie Event Printing Connection Dialog on Incoming Alarm ie Workstation Alarm and Alarms	.ocations Advanced aphic: Site tisplay Override Status Event Log Capacity jory 1 ✓ 3 jory 2 ✓ 3 jory 3 ✓ 3 jory 4 ✓ 3 jory 5 ✓ 3 ite: \\basbns07\TRN430PS ie Event Printing Connection Dialog on Incoming Alarms le Workstation Alarm ✓ and Alarms ✓ ifferss: ✓				



2. Click Change button to the right of the Home Graphic field to display the Select Home Graphic dialog box (see Figure 475).

Figure 475. Select Home Graphic Dialog Box

Select Home Graphic	×
Graphic Object Name	
Absorption, 1 Stage, Hot Water Absorption, 1 Stage, Steam Absorption, 1 Stage, Steam, P2 Absorption, 1 Stage, Hot Water,P2 Absorption, 2 Stage, Steam Absorption, 2 Stage, Steam Absorption, 2 Stage, Steam, P2 Area Area, P2 BCHA Horiz, 2 Pipe No Mix Box,P2 BCHA Horiz, 2 Pipe No Mix Box,P2 BCHA Horiz, 2 Pipe, No Mix Box, P2 BCHA Horiz, 2 Pipe, Mix Box, P2 BCHA Horiz, 4 Pipe No Mix Box,P2 BCHA Horiz,P2 BCHA Horiz,P2	Ĩ
OK Cancel	Help

3. In the Graphic Object Name list, click the name of the graphic you wish to select.

Note:

The Select Home Graphic dialog box lists all available system graphics stored in the C:\Program Files\Tracer Summit\Graphics\Custom directory.

4. Click OK to select the graphic and display the General screen.



Displaying Override Status

You can enable a "hand" icon to display on an override button when the object has been manually overriden (see Figure 476).



	Area Hame: AREA TEST		
	Operating Mode		
	Heat/Cool Mode: Present Value:	Heatir Occup	ng pied 🖉 Override
	Timed Override	_	<u> </u>
	Status	Not Ad	ctive- Not In Control
_	 Time Remaining	0	Minutes
Object in manual	Setpoints		
override	Active Setpoint:	71.0	Deg
	Unoccupied Cooling Setpoint:	85.0	Deg

To display override status:

- 1. Click on Tools from the menu bar, then select Options. The Systems Options screen displays. with the General tab open (see Figure 477).
- 2. Check the Display Override Status dialog box.
- 3. Click Save.

Figure 477. Override Status Checkbox

	General File Locations Advanced	
Display override status checkbox	Category Toolbar Max Popups Category 0 Category 0	Event Log Capacity: 5,000 V Event Log Capacity: 5,000 V Error Log Capacity: 5,000 V
	Event Printer: \\basbns07\TRN430 Enable Event Printing Show Connection Dialog on Incoming Alarms Disable Workstation Alarm	Change



Configuring Category Alarm Buttons and Pop-up Dialog Boxes

Use the Events table to configure the category alarm buttons on the tool bar and alarm pop-up dialogs for event categories (see Figure 478).

Note:

Alarm categories are set up in Site Configuration. For more information, refer to Chapter 6, *Systems Programming* guide, "Setting up Event Classes."

Figure 478. Events table

vents						
Category	Toolbar	Max Popups				
🔔 Category 1		3				
🔔 Category 2		3				
🗘 Category 3		3				
🔔 Category 4		3				
🔔 Category 5	Image: A start and a start	3				

To configure category alarms:

- 1. From the Tools menu, select Options to display the System Options editor General screen (see Figure 474 on page 562).
- 2. To display alarm categories on the toolbar, check the toolbar checkbox next to the category. Figure 479 shows an example of category icons displayed on the toolbar.

Figure 479. Category Alarms Displayed on Toolbar





To configure alarm pop-up dialog boxes:

- 1. To set up the workstation to display a pop-up dialog box when an alarm comes into the system, edit the Max Popup field. (see Figure 478 on page 565). Figure 480 shows an example of a category alarm popup.
- 2. In the Events table, type the number of alarm pop-up dialog boxes you want to display for incoming alarms.

Note:

If the Max Popups field is zero (0), no popups will display.

Figure 480. Category Alarm Pop-up Dialog Box

Рорир								
Comment:	ime: 3/24/2006 10:06:2 Type: Analog Control BMTW TestSite Fancoil Fan Speed 3.0	2 AM D						
Silence	Acknowledge	Save						
Graphic	Expanded Message	Dismiss						

Using the Category Alarms on the Toolbar

Use the category alarms to quickly filter and view problem alarms.

1. From the first drop-down list, click the down arrow to select whether to show all alarms in a site, only unacknowledge alarms, or no alarm count. Figure 481 shows no alarm count for category alarms.

Figure 481. Category alarms by alarm count

	<u>_8</u> 2
🌲 🔔 🗘 🔔 🌲 Are	UnAck 🔥 In site
	All
	UnAck
	No Count
CER SUMMIT [®]	



Configuring Category Alarm Buttons and Pop-up Dialog Boxes

2. From the second drop-down list, select to show category alarms for all sites, current site, or a particular site (see Figure 482).

▲ ↓ ↓ ↓ Ar	e UnAck 💌	In si All All All An	te Groups Sites Sites Irrent Site tietam	
CER SUMMIT*		B/ Bl Gr sit	ASD-AMS MTXsite roup1 te	•
lame: BASD-AMS		T		

Figure 482. Category alarms by site or group

3. To quickly view all alarms in an alarm category, click an alarm category button. The alarm category (1–5) appears when you move the cursor over the button (see Figure 483). The Event log displays showing only alarms for that alarm category (see Figure 484).

Figure 483. Category Alarm number

	<u>_8</u>
▲ ▲ ↓ ▲ A	re UnAck 💌 In Current Site, 💌
Category 1	_
CER SUMMIT®	

Figure 484. Event Log Displaying Category Alarms

Event Log	BCU Event Lo	g Error L	og						
 Enable Filte Select Filter Cr Time Period Entire Period alarms matc 	ring <u>s</u> iteria d ned criteria	Set As Default	Filter S All Sit	ite/Group es <u> </u>	Status / F All Events	Event Type	L Alarm/	og Entries: 86 Event	3
Category	Date/Time	Event Type	Detail	Ack. Regd.	Priority Operator	From	Site	Panel Type	Comment
•	3/13/2006 10:08:56 AM	Analog Control	Office Setpoint 73.50 Degrees Fahrenheit		Priority= 4 -User - High by TRACER	BMTW	TestSite	BCU	
	1/1/2000 12:01:24 AM	Watchdog Timeout				BMTW	TestSite	BCU	
	Event Log Calcolor Filter Category Category	Event Log BCU Event Log ✓ Enable Filtering S Select Filter Criteria Ime Period S Time Period ✓ 36 alarms matched criteria Category Date/Time 3/13/2006 10:08:56 AM 1/1/2000 12:01:24 AM	Event Log BCU Event Log Emor L ✓ Enable Filtering Set As Default Select Filter Criteria Time Period ▼ 36 alarms matched criteria ▼ ✓ Date/Time Event Type ▲ 3/13/2006 10:08:56 AM Analog Control ▲ 1/1/2000 12:01:24 AM Watchdog Timeout	Event Log BCU Event Log Emor Log ✓ Enable Filtering Set As Default Filter Select Filter Criteria Time Period S Entrice Period ✓ 36 alarms matched criteria All Sil Category Date/Time Event Type Detail 0 3/13/2006 Analog 10:08:56 AM Office Septoint 73:50 Degrees Fahrenheit 1/1/2000 Watchdog 12:01:24 AM Utrice	Event Log BCU Event Log Error Log ✓ Enable Filtering Set As Default Filter Select Filter Criteria Time Period Site/Group All Sites All Sites 36 alarms matched criteria Venet Type 0 Date/Time 9 Date/Time 10:08:56 AM Control 0 12:01:24 AM 0 Timeout	Event Log BCU Event Log Error Log ✓ Enable Filtering Set As Default Filter Select Filter Criteria Time Period Site/Group Status / I Entrie Period ✓ All Sites ✓ All Sites ✓ All Events 36 alarms matched criteria Office 36 alarms matched criteria Category Date/Time Event Type Detail Ack. Reqd. Priority Operator 3/13/2006 Analog Setpoint 73.50 Priority= 4 -User - High by TRACER ↓ 1/1/2000 Watchdog ↓ 1/1/2000 Timeout 0ffice	Event Log BCU Event Log Error Log ✓ Enable Filtering Set As Default Filter Select Filter Criteria Time Period Site/Group Status / Event Type Entrie Period Image: Site/Group Status / Event Type Gategory Date/Time Event Type Detail All Sites Site/Group From 36 alarms matched criteria Office Priority 3/13/2006 Analog Office Setpoint 73.50 Priority= 4 User - High by TRACER 1/1/2000 Watchdog - BMTW 12:01:24 AM Office - BMTW	Event Log BCU Event Log Error Log ✓ Enable Filtering Set As Default Filter L Select Filter Criteria Time Period Status / Event Type Alarm/ Entrie Period ✓ All Sites All Events ✓ 36 alarms matched criteria Office Priority From Site 0 3/13/2006 Analog Office Priority = 4 User - High 10/08:56 AM Control Fahrenheit - BMTW TestSite 1/1/2000 12/01:24 AM Watchdog - BMTW TestSite	Event Log BCU Event Log Error Log ✓ Enable Filtering Set As Default Filter Log Entries: 86 Select Filter Criteria Time Period All Sites All Events All Time Period ✓ All Sites All Events All All 36 alarms matched criteria Office Priority Panel Type 0 3/13/2006 Analog Office Priority=4 User - High BMTW TestSite BCU 1/1/2000 1/1/2000 Watchdog - BMTW TestSite BCU



Viewing Alarm Pop-up Dialog Boxes from the Event Log

Incoming alarms can be configured to display in a pop-up dialog box (see configuring pop-up alarms on page 566). An alternate way to access alarm pop-up dialogs is from the event log (see Figure 484 on page 567).

- 1. From the event log, righ-click anywhere in the event row, a pop-up menu displays (see Figure 485).
- 2. Click View Popup. The alarm pop-up dialog box displays.

Note:

You can also view the alarm pop-up dialog box by double-clicking anywhere in the event row.

Figure 485. Popup Menu

Enable Filtering	Enable Filtering Set As Default Filter Log Entries: 54								
Stelect niler Citlena Site/Group Status / Event Type Alarm/Event Entire Period Image: Category 1 Image: Category 1 Image: Category 1 54 alarms matched citleria Image: Category 1 Image: Category 1 Image: Category 1									
Category ⊽ Dat	te/Time	Event Type	Ack. Reqd.	Priority Operato	ır	From	Site	Panel Type	Comment
A 3/2	24/2006 06:22 AM	Analog Contrc <mark>i A</mark>	 cknowledge Al	Priority= Day Sch larm	15 -Time of hedules by	BMTW	TestSite	вси	
▲ 3/2 10:1	24/2006 06:22 AM	Analog V Contro	iew <u>M</u> essage		15 -Time of jedules by	BMTW	TestSite	BCU	
4 3/2	24/2006 06:22 AM	Analog D Contro	<u>S</u> elect All Delete		15 -Time of edules by	BMTW	TestSite	BCU	
▲ 3/1 3:1-	14/2006 4:04 PM	Analog V Contro V	ave As iew Object Gra iew Popup	phics	15 -Time of iedules by	BMTW	TestSite	BCU	Power Outage
▲ 3/1	4/2006	Analog		Priority=	4 -User -	50170 I	co	2011	

Figure 486. Category Alarm Pop-up Dialog Box

Рорир				
Date/Time: 3/24/2006 10:06:22 AM Event Type: Analog Control From: BMTW Site: TestSite Detail: Fancoil Fan Speed 3.00 Comment:				
Silence	Acknowledge	Save		
Graphic Expanded Message Dismiss				



Setting Up the Events Printer, Message Forwarding, and Event Log Settings

Setting Up the Events Printer, Message Forwarding, and Event Log Settings

When Tracer Summit BCUs or Tracer 100 and Tracker panels generate alarms and events, you can have those alarms and events sent to a printer as well as updated in the alarm and event log. Tracer Summit uses printers installed in the Windows operating system to print events.

The System Options editor allows you to select a default printer and change settings related to event printing. The editor also allows you to specify who should receive an alarm or event by means of e-mail or e-mail enabled cell phone/pager. Through the editor, you can also modify the size of the event log.

For more information about alarms and events, refer to the *Tracer Summit Daily Operations* guide.

Setting Up the Events Printer

1. From the Tools menu, select Options. The System Options editor displays (see Figure 487).

Figure 487. System Options Editor – General Screen

General File Locations Advanced					
Graphics Home Graphic: SiteChange					
Events					
Category Toolbar Max Popups ▲ Category 1 ✓ 3 ▲ Category 2 ✓ 3 ▲ Category 3 ✓ 3	BEVent Log Capacity: 5,000 ▼ BCU Event Log Capacity: 5,000 ▼				
Category 4 ✓ 3 Category 5 ✓ 3 Event Printer	Error Log Capacity: 5,000				
Event Printies Change Change Change Change Show Connection Dialog on Incoming Alarms					
	Refresh Rate: 1 Minute				
Harvested Trend Keep Harvested Trend Data for 10	Vear(s)				





2. To change the events printer, in the Events group click the Change button (see Figure 488). The Print Setup dialog box displays (see Figure 489).

Note:

The Print Setup dialog box varies depending upon the printer selected.

Figure 488. System Options Editor



Figure 489. Print Setup Dialog Box

P	rint Setup		? ×
	Printer —		
	<u>N</u> ame:	HP LaserJet 5000 Seri (Copy 2)	▼ <u>P</u> roperties
	Status:	Default printer; Ready	
	Type:	HP LaserJet 5000 Series PS	
	Where:	\\Basbnd01\mkt5000	
	Comment:		
	Paper		Orientation
	Size:	Letter	• Portrait
	<u>S</u> ource:	AutoSelect Tray	C L <u>a</u> ndscape
			OK Cancel

3. In the Name field, select the printer that Tracer Summit will use to print events and alarms.

Note:

- Tracer Summit sends alarm and event information to the printer one line at a time. A tractor-feed (or line-feed) printer works best as the events printer so that you can view the events as they are generated and printed. If you select a sheet-feed printer (such as a laser printer), you do not see the events until a complete page is printed.
- Typically, the events printer is connected directly to the PC Workstation (on the LPT1: port).
- 4. Select additional printer setup options as necessary. For more information on setting printer options, see the instructions provided with Microsoft Windows or with your printer.
- 5. Click OK. The System Options editor General tab displays.



Setting Up the Events Printer, Message Forwarding, and Event Log Settings

- 6. To have events print to the printer, make sure Enable Event Printing is selected.
- 7. If you want to be able to connect to a remote site when an incoming alarm is received, select Show Connection Dialog on Incoming Alarms.
- 8. If you want to have incoming alarms be silent (rather than sounding a beep), select Disable Workstation Alarm.

IMPORTANT

Selecting Disable Workstation Alarm keeps the workstation from beeping when an alarm comes in, regardless of how Alarm and Message Routing is setup.

Setting up Message Forwarding

- 1. From the Tools menu, select Options. The System Options editor displays (see Figure 488 on page 570).
- 2. Select the alarm class from the list, and type an e-mail address in the To email address field (see Figure 490).

When you select and save the Forward Alarm Class and To e-mail address fields, alarms that match the selected alarm class from all sites in the database are e-mailed. Also, all Tracer 100 critical (priority 2) and Tracker alarms are automatically e-mailed if your workstation receives such alarms from Tracer 100 and Tracker sites.

Figure 490. Forward Alarms Fields



IMPORTANT

Your workstation must be set up as an event receiver in BCU sites, with a telephone number defined in Tracer 100 and Tracker sites, and other requirements for alarms must be satisfied, as described in Chapter 6, "Configuring Tracer Summit BCU Sites."

Setting Up Automatic Refresh

- 1. From the Tools menu, select Options. The System Options editor displays (see Figure 488 on page 570).
- 2. Click the Enable Auto Refresh check box (see Figure 491). Select the refresh rate from the list.

For performance tuning, you can select a custom auto refresh interval. This interval can range from 30 seconds to 5 minutes (see Figure 491). If you are expecting a lot of alarms, set the refresh rate to a higher value. If you are troubleshooting one piece of hardware,

Setting System Options



and these are the only alarms you expect to see, set the refresh rate to a lower value.

Note:

If you set the refresh rate value too low, the user may experience what appear to be screen lockups.

Figure 491. Enable Auto Refresh Rate Fields

ſ	- 🔽 Enable Auto Refresh			
	Refresh Rate: 1 Minute			

Note:

- The BCU event log and the error log viewers cannot be automatically refreshed. Selecting Enable Auto Refresh has no effect on these viewers.
- In a shared SQL database, workstations do not share this setting. Each workstation has its own setting.
- If you change the database source from SQL to an existing Microsoft Access Tracer Summit database, the refresh rate is restored to its previous value. However, when you change the database source from SQL to a blank Microsoft Access Tracer Summit database, the refresh rate is reset to its default Microsoft Access value when Tracer Summit starts up.
- 3. Select the event log capacity from the Event Log Capacity list.

For system performance and manageability, you can modify the storage capacity of the event log with your selection of the Event Log Capacity. The Tracer Summit software will not allow the number of events saved in the database to exceed this limit.

If you do insert a new event in the database that exceeds this limit, the Tracer Summit software deletes the oldest events in the database until the number of events in the database comes within the limit.



Setting Up the Events Printer, Message Forwarding, and Event Log Settings

The type of database that you are using determines the maximum limits

Note:

- If the new event log capacity value is less than the number of existing events in the log, the following warning message appears: You will lose events from your Event Log! It is recommended that you cancel and first back up the Event Log. Continue with save and lose events? <Yes> <No>.
 - If you click Yes, the new capacity value is saved, and the log is truncated to the new value when a new event is inserted in the log.
 - If you click No, changes are not saved, and the capacity is restored to the original value.
- In a shared SQL database, workstations share this setting. Each workstation cannot have its own setting because the database is shared.
- If you change the database source from SQL to an existing Microsoft Access Tracer Summit database, the event log capacity value is restored to its previous value. However, when you change the database source from SQL to a blank Microsoft Access Tracer Summit database, the event log capacity value is reset to its default Microsoft Access value when Tracer Summit starts up.
- 4. From the BCU Event Log Capacity list, select the record size and change it to the appropriate value.

When the new value is less than the number of existing records in the log, a warning appears, as described in the note for step 3.

5. From the Error Log Capacity list, select the record size and change it to the appropriate value.

When the new value is less than the number of existing records in the log, a warning appears, as described in the note for step 3.

6. Click Save.

Harvested Trend Data Field

This field determines how long Tracer Summit should keep the data in the Trend Viewer database (see Figure 492). Any data that is older than the selected number of years will be purged from the Trend Viewer database. This applies for both Access database users and SQL database users. The purge process occurs once a month. (So, technically, the database retains no more than x years + one month.) For example, if this field is set to keep harvested trend data for 1 year starting January 1st, 2007, then the first purge of data will occur Feburary 1st, 2008.



Setting System Options

Figure 492. Harvested Trend Field



To set the purge date:

• Click the down arrow and select the number of years to keep the data before it is automatically purged.

Changing Default File Directories

Tracer Summit uses many directories or folders to store files. Typically, you will want to accept the system defaults. You can modify the default locations to store graphic files on a common file server, for example.

IMPORTANT

When you are using a shared SQL database, you might have to store these files in a shared folder on your LAN. This is to ensure that all Tracer Summit users can access these files.

To change default directories:

- 1. From the Tools menu, select Options. The System Options editor displays.
- 2. Click the File Locations tab. The File Locations screen displays (see Figure 493).

Figure 493. System Options Editor File Locations Screen

General File Locations	Advanced
File Types CPL Text Files Custom Graphics PCM Edit Data Files Saved Event Logs Saved Reports Site Graphics Standard Graphics UPCM Edit Data Files	Location C:\Program Files\Tracer Summit\CPL\ C:\Program Files\Tracer Summit\CPL\ C:\Program Files\Tracer Summit\PCME ditConsoleData\ C:\Program Files\Tracer Summit\Peports C:\Program Files\Tracer Summit\Graphics C:\Program Files\Tracer Summit\Graphics\Standard C:\Program Files\Tracer Summit\UPCME ditConsoleData\
	Modify

3. Click the file type whose location you wish to modify in the File Types list.



4. Click Modify to display the Browse for Folder dialog box (see Figure 494 on page 575).

Figure 494. Browse for Folder Dialog Box

Browse for Folder 🛛 😯 🗙
Directory Selection
Image: My Computer Image: Starting of the system
OK. Cancel

- 5. Select a new location in which to save files.
- 6. Click OK to select the location and display the File Locations screen.

Changing Advanced Settings

The System Options editor allows you to change the workstation device ID and to set options for how objects and properties are displayed. These options are most often used when doing advanced troubleshooting. Use these options only if you are an advanced user.

Changing the Workstation Device ID

The workstation device ID identifies the workstation to the rest of the Tracer Summit system, primarily for the purposes of alarm and message routing, notification, and acknowledgment. Take care when you change the device ID. Changing the ID can result in intercepting messages





meant for another workstation or not receiving messages intended for the workstation.

Note:

Tracer Summit provides a default workstation device ID that is based on the number assigned during the software installation. Generally, the first workstation created is ID 80. Each additional workstation number is increased in increments of one.

Typical workstation addressing is as follows:

- 80 100 for on-site workstations
- 101 120 for remote workstations
- 121 140 Trane-reserved addressing

To change the workstation device ID:

- 1. From the Tools menu, select Options. The System Options editor displays.
- 2. Click the Advanced tab to display the Advanced screen (see Figure 495).

Figure 495. System Options Editor Advanced Screen

General File Locations Advance	ed						
🔲 Show Object and Device IDs	Show Object and Device IDs						
🔲 Disable Property Filtering							
Workstation	Message Forwarding						
Device ID: 80	E-Mail Profile: NO PROFILE SET						
Change	Change						
Double Clicks on Navigation Tree	Nodes Dialing Prefix						
 Connect Automatically 	C None						
C Prompt for Connection	Site Defined						
O No Connection	C Custom						

3. In the Workstation Device ID field, click the Change button. The Change Workstation Device ID dialog box displays (see Figure 496).



Figure 496. Change Workstation Device ID Dialog Box

Change Worksta	tion	Devio	e ID			×			
Current Device ID	:	80							
New Device ID	80		•			-			
Changing the Di event messages	WARNING: Changing the Device ID may cause alarm and event messages to be misrouted.								
ОК		Cance	ł		Help				

- 4. In the New Device ID field, select a new ID number.
- 5. Click OK.



Selecting Whether Object and Device IDs Display

The Advanced screen of the System Options editor allows you to select whether object and device identification numbers (IDs) are displayed throughout the Tracer Summit system. If you select to display the IDs, then whenever you select or view a UCM, area, device, object or property, the item's object and device IDs, as well as its name, are displayed.

This information is valuable for troubleshooting BACnet interface projects. Most of the time, however, you do not need to display the object and device IDs. For more information on BACnet interfaces, refer to Chapter 37, "Using BACnet for Non-Trane Devices".

An example of where the object and device IDs display within Tracer Summit is at the Object and Properties Selection dialog box (accessed through the Status menu's Object and Properties item). See Figure 497.

ame:			Selected Proper	ties:	
3ASD 2020	▼				
Туре	Type ID				
Absorption Chiller (UCP2)		I			
		Add >>			
Name	Object Device				
Chiller B	•	<< Remove			
roperties:					
Property Name	Property ID				
Absorber Water Flow Rate	29CC -	<< Remove All			
Absorber Water Flow Status	29CD				
Absorber Water Press: Delta	29CE				
Absorber Water Press: Entering	29CF				
Absorber Water Press: Leaving	29D0				
Absorber Water Pump Output	29D1				
Absorber Water Temp: Delta	29D2				
Absorber Water Temp: Entering	29D3				
Absorber Water Temp: Leaving	29D4 🔤				
AL E LCL [01]	27D7 🔼		•		

Figure 497. Objects and Properties Selection Dialog Box

To display device and object IDs:

- 1. From the Tools menu, select Options. The System Options editor displays.
- 2. Click the Advanced tab to display the Advanced screen (see Figure 495 on page 576).
- 3. Check the Show Object and Device IDs check box to enable this option. To disable the option, uncheck the check box.



Selecting an E-mail Profile for Message Forwarding

The e-mail profile is the one associated with the From e-mail address of users which appears in the From field of e-mails that they send.

To select an e-mail profile:

1. From the Advanced tab in the System Option editor, click the Change button in Message Forwarding E-Mail Profile (see Figure 498). The Profile Select dialog box appears (see Figure 499). Existing e-mail profiles display in the Profile list.

Figure 498. Change Profile Button

Message Forwarding E-Mail Profile	
Currently: AASY	Change

- 2. Select a profile. The Username and Password fields of the mailbox are blank.
- 3. If required, type the correct username and password to access the mailbox of the profile on the server. The password displays as a series of asterisks (see Figure 499).

IMPORTANT

If no profiles display, contact your IS or system administrator for help in creating a new e-mail profile for your PC.

Figure 499. Profile Select Dialog Box

Profile Select		×
Profile:		
AASY		-
I		
Username:	aasy	
Password:	******	
		I
OK	Cancel	Help

4. Click OK to select the profile.



Setting Connection Features of the Navigation Tree

When you double-click a site node in the navigation tree, the Tracer Summit software can do one of three things:

- Connect immediately
- Prompt you whether you want to connect
- No immediate connection

The response to the double-click on a site node is determined by what you set in system options. For more information about the navigation tree and connecting to sites, see "Connecting to a Site from the Tree" on page 401.

To set connection features for the navigation tree:

- From the Advanced tab in the System Options editor (see Figure 495 on page 576), in the Double Clicks on Navigation Tree Nodes group:
 - Click Connect Immediately if you want Tracer Summit to connect immediately to a site after a double-click on a site node
 - Click Prompt for Connection if you want Tracer Summit to prompt the user with a dialog box that asks whether they want to connect to the site after a double-click on a site node
 - Click No Connection if you want Tracer Summit not to connect immediately to a site after a double-click on a site node



Chapter 34 The BCU Operator Display

The BCU operator display is a liquid crystal display (LCD) touch screen that is installed in Tracer Summit BMTX or BMTW BCU as an option. The operator display makes it possible for the occasional daily user to perform most of the Tracer Summit daily activities at the BCU.

Initially, the Tracer Summit software and PC Workstation are needed to set up the operator display for operations. After setup is complete, the operator display can serve as a stand-alone operator interface between the user and the building automation system (BAS) equipment.

At the PC Workstation, the following site objects are set up for monitoring at the BCU operator display:

- Equipment and applications
- Time of day schedules
- Alarms and events

For information on using the operator display, see the Tracer Summit *BCU Operator Display Operations* guide.



Accessing the BCU Operator Display Editor

- 1. From the Setup menu, select Operator Display. A list of all the operator displays that have been set up in site configuration displays (see Figure 500).
- 2. Select the name of the operator display that you want to edit.

Figure 500. Select Dialog Box

S	elect Operator Dis	play		×
	Name			
	BCU 1 LD			
	,		I	
			Cancel	Help

3. Click OK to display the Operator Display editor (see Figure 501). The editor opens up to the Status tab. View this screen to see the number of objects that has been selected for monitoring at the operator display.

Figure 501. Operator Display Editor – Status Screen

Status	Setup	Devices	Object Types	Members	Main Screen	Load Custom Screens	
Current (Operator	Display:	BCU 1	LD			
Current N	Number	of Objects S	Selected: 0				



Creating a New BCU Operator Display

To create a new BCU operator display object, you perform the following tasks:

- Add an operator display object to the selected device (as described in this section).
- Add a BCU event log object to the device (optional). Adding a BCU event log object enables users to view and acknowledge system alarms and events at the operator display (see "Adding a BCU Event Log object" on page 60).
- Select objects for viewing and editing at the operator display (see "Setting Up the BCU Operator Display" on page 586).

The following steps show you how to create a BCU operator display object from the Site Configuration editor. You can create an operator display object while configuring a site (see Chapter 6, "Configuring Tracer Summit BCU Sites"), or you can add it to a specified BCU (as described in this section).

Note:

The operator display buttons are only available for BMTX and BMTW BCUs.

To create a new operator display object:

- 1. From the Setup menu, select Site Configuration.
- 2. From the Site Configuration editor, click the Devices tab to display the Devices screen (see Figure 502).

Figure 502.	Site	Configuration -	– Devices Screen
-------------	------	-----------------	------------------

Setup	Devices	Event Routing	Control Priorities	Units	Date/Time	Comm	iunications			
Device	es		Workstations		No	on-Trane	BACnet devi	ice		
bcu			ws1		В	AUnet D	evice U			
	Create D	evice	Create Work	station.	Cr	eate No	n-Trane BACr	net dev	ice	
	Edit De	vice	Edit Works	tation		Edit Non	-Trane BACne	et devic	:e	
	Delete D)evice	Delete Wo	kstatior	n 🛛) elete N	on-Trane BAC	Cnet de	vice	
UCMs	in Selected I	Device		Lir	nk Adr	tress	Neuron			
DAC MP58 SCC- SCC- SCC- SCC- VariT VariT	UCM Name UC DAC Di MP580/581-11-1-6 Mi MP580/581-11-7 Mi SCC-1-1-1 Sr SCC-1-1-2 Sr SCC-1-1-3 Sr SCC-1-1-4 Sr SCC-1-1-5 Sr SCC-1-1-4 Sr VariTrane UCM VariTrane UCM		Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro VanTrane UCM VanTrane UCM VANT VANT VANT VANT VANT VANT	1 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1	2	1		00000 00000 00000 00000 00000 00000 0000		
	Create l	JC <u>M</u>								
	<u>A</u> ssign Ne	euron ID								
	<u>D</u> elete	UCM								



- If the appropriate BCU is listed, select it. Then click the Edit Device button. The Edit Device dialog box displays (see Figure 503).
- If the appropriate BCU is not listed, click the Create Device button to display the Create Device screen.

Figure 503. Site Configuration – Edit Device

Edit Device Device Name: BCU-1 Device ID: 4 Network Number: 1 Panel Tune: Enhanced BCU (BMTX)		×
Communication Links Link 1: Isolated Comm 3 Link 2: Non-Isolated Comm 4	Modem Add Edit Delete	Operator Display Add Edit
Link 3: Non-Isolated Comm 4		BCU Event Log
Security Classes	Cancel Help]

3. Click the Operator Display Add button. The Create New Operator Display dialog box displays (see Figure 504).

Figure 504. Create New Operator Display Dialog Box

Create New Operator Display							
Operator Display Name:	Operator Display 1						
Security Classes	OK	Cancel	Help				





4. Type a name in the Operator Display Name field. Make the name as informative as possible. Use a maximum of 32 characters.

Note:

You must enter a name before you can save the new operator display object. You can modify the name at any time from the Edit Operator Display dialog box. You can access the dialog box from the Operator Display Edit button.

- 5. To change the default security access for the operator display, click Security Classes (see "Setting Up Security—Tracer Summit System" on page 135).
- 6. Click OK to close the Create New Operator Display dialog box.
- 7. From the Edit Device screen, click OK.
- 8. From the Devices screen, click Save. The operator display object is not created until you save.
- 9. Click OK to return to the main screen.



Setting Up the BCU Operator Display

Setting up the operator display is as easy as selecting a device and customizing the operator display home screen. To set up the operator display for daily operations, perform the following tasks:

- Select a device from the Devices tab or select individual object types and their members from the Object Types tab and Members tab.
- Use the Main Screen tab to customize the operator display home screen.

Operator Display Options

To set up security for the operator display, or to enable custom screens, see "Setup Options for the Operator Display" on page 593.

Selecting a Device

From the Devices screen, you can quickly select all of the objects residing in a device. The objects will then be available at the operator display for monitoring.

1. From the Operator Display editor, click the Devices tab. The Devices Screen displays (see Figure 505).

Figure 505. Operator Display Editor-Devices Screen

	Status	Setup	Devices	Object Types	Members	Main Screen	Custom Screens	
Γ	Devices	selecte	d on this tab	affect the items	selected on	the Object Type	es tab and the Memb	ers tab.
	Availabl	e Devic	es				Selected Device	\$
	BCU3				- F	Add >	BCU1 BCU2 BCU4	
						Add All >>		
					Re	move All <<		



- 2. From the Available Devices list, select the name of the device.
- 3. Click the Add button to add the device to the Selected Devices list.

Note:

The Tracer Summit software automatically moves all the object types in that device to the Selected Objects list on the Object Types screen (see Figure 506 on page 588). Also, the members associated with those object types are automatically moved to the Selected Objects list on the Members screen (see Figure 507 on page 589).

4. Click Save to save your changes.

Removing a Device

- 1. From the Selected Devices list, select the name of the device.
- 2. Click the Remove button to move the device back to the Available Devices window.

Note:

The Tracer Summit software automatically moves all the object types in that device back to the Available Objects list on the Object Types tab. Also, the members associated with those object types are automatically moved back to the Available Objects list on the Members tab. All of the objects for that device will no longer be available at the operator display for monitoring.

3. Click Save to save your changes.



Selecting Individual Object Types

Use this screen to quickly select all of the members of an object type.

To select individual object types:

1. From the Operator Display editor, click the Object Types tab. The Object Types screen displays (see Figure 506).

Figure 506. Operator Display Editor–Object Types Screen

Status	Setup	Devices	Object Types	Members	Main Screen	Custom Screens						
Object (Object types selected on this tab affect the items selected on the Devices tab and the Members tab.											
Availabl	e Object	Types				Selected Object	Types					
Absorp Analog Area Binary I Centrifu Chiller F Helical IntelliPa Thermo VariTra	tion Chilli Output Dutput Igal Chilli Plant Rotary C ak Roofti Istat Con ne UCM	er (UCP2) er (UCP2) Chiller (UCP op trol Module 11/11/1V	2) \$ (TCM)		Add >	Schedule						
VAV AI Voyage	r System r Roofto	(VAS J P			Add All >>							
				Re	move All <<							

- 2. From the Available Object Types list, select the name of the object.
- 3. Click the Add button to add the object to the Selected Object Types list.

Note:

When you select objects from the Available Object Types list, the Tracer Summit software automatically moves all of the members belonging to that object type from the Available Object list to the Selected Objects list on the Members screen (see Figure 507 on page 589). Also, the software automatically moves the associated device from the Available Devices list to the Selected Devices list on the Devices screen (see Figure 505 on page 586).

4. Click Save to save your changes.


Removing Individual Object Types

- 1. In the Selected Object Types list, select the name of the object you want to remove.
- 2. Click the Remove button to move the object type back to the Available Object Types list.

Note:

The Tracer Summit software automatically moves all of the members belonging to that object type from the Selected Objects list to the Available Objects list on the Members tab. The members of the object type will no longer be available for monitoring at the operator display.

3. Click Save to save your changes.

Selecting Members

Use this screen to quickly select and remove members of an object type from the object lists.

To select members of an object type:

1. From the Operator Display editor, click the Members tab. The Members screen displays (see Figure 507).

Figure 507. Operator Display Editor – Members Screen

Status	Setup	Devices	Object Types	Members	Main Screen	Custom Screens	
Objects Availab	selecteo le Object	d on this tab s) affect the items	selected on t	he Devices tab	and the Object Type Selected Objects	es tab. s
Alarm I Chiller I-Pak Powerl The Bi The Ju Therm Therm Therm UCP2 Unicor VariTra	nput Plant retu Plant sup ul Absori ul Centra g Bopper gg Bopper gg Bopper gg Bopper gg Bopper gg Bopper gg Bopper stat Cor ostat Cor	urn water te oply water te avac f ntrol Module ntrol Module ntrol Module 1trol Module Plant II/III/IV-1-	mp emp e-2-1 e-2-2 e-2-3 e-2-3 e-2-4 e-2-5 65	F F	Add > Remove < Add All >>	Offices Shipping	
Object i	s Locate	d on Devic	e:			Object is Located Current Number (d on Device: BCU1 of Objects Selected: 2

2. From the Available Objects list, select the name of the member.



3. Click the Add button to add the member to the Selected Objects list.

Note:

When you select objects from the Available Objects list, the Tracer Summit software automatically moves the object type associated with that member from the Available Object Types list to the Selected Object Types list on the Object Types screen (see Figure 506 on page 588). Also, the software automatically moves the associated device from the Available Devices list to the Selected Devices list on the Devices screen (Figure 505 on page 586).

4. Click Save to save your changes.

Removing Members

- 1. In the Selected Objects list, select the name of the member you want to remove.
- 2. Click the Remove button to move the member back to the Available Objects list. That member will no longer be available for monitoring at the operator display.

Note:

If you remove all of the members belonging to an object type, the Tracer Summit software will automatically move the object type back to the Available Object Types list on the Object Types tab. The members of that object type will no longer be available for monitoring at the operator display.

3. Click Save to save changes.



Customizing the Operator Display Home Screen

From the Main Screen you can customize the information on the operator display home screen. Use this screen to add a title and custom data points to the operator display (see Figure 508). Figure 509 on page 592 shows an example of a customized home screen.

Status Setup Devi	ces Object Types Members Ma	ain Screen	n Screens
Tale.			
nae.			
Line One:	r	-	
Description:			
Object Type:	Absorption Chiller (UCP2)	•	
Object Name:	<none></none>	•	
Property Name:	Absorber Water Flow Rate	Y	
Right of Decimal:	1		
Line Two:			
Description:		_	
Object Type:	Absorption Chiller (UCP2)	•	
Object Name:	<none></none>	•	
Property Name:	Absorber Water Flow Rate	7	
Right of Decimal:	1		

Figure 508. Operator Display Editor Screen





Figure 509. Example of Customized Operator Display Home Screen

To customize the operator display home screen:

All fields on the Main Screen editor are optional and can be left blank (refer to Figure 508 on page 591).

- 1. In the title field, type text that will display as the title of the home screen. If this field is left blank, the title will default to the site name.
- 2. In the Line One Description field, type text that describes the custom data point. If this field is left blank, no information will be displayed.
- 3. In the Object Type field, use the selection arrow to select the object type from the list.
- 4. In the Object Name field, use the selection arrow to select the object name from the list.
- 5. In the Property Name field, use the selection arrow to select the property whose value will appear on line one as the first custom data point.
- 6. Repeat steps 1-5 for adding the second custom data point to the operator display.
- 7. Click Save to save your changes.

Setup Options for the Operator Display



Setup Options for the Operator Display

The following tasks are optional when setting up the operator display:

- Setting up BCU operator display security access (see "Setting Up Security for the Operator Display" on page 147)
- Enabling security for the BCU operator display (as described in this section)
- Choosing operator display options (as described in this chapter)
- Creating custom screens (see Chapter 35, "Using the Custom Screen Editor")
- Setting up a custom screen (as described in this chapter)

Enabling Security at the Operator Display

Use the following procedure to set security at the operator display. When security is enabled, users need a password and edit access to edit system information. Passwords and edit access are set up in the Site Security editor (see "Setting Up Security for the Operator Display" on page 147).

To enable security at the operator display:

- 1. From the Setup menu, select Operator Display. The Select Operator Display dialog box displays.
- 2. Select the operator display you want to set up security for and click OK. The Operator Display editor displays.
- 3. Click the Setup tab. The Setup screen displays (see Figure 510).

Figure 510. Operator Display Editor-Setup Screen

Status	Setup	Devices	Object Types	Members	Main Screen	Load Custom Screens]
	ator Displa Enable S	ay Security ecurity					
Operation of the second	ator Displa Disable C	ay Options Confirmation	n Screens				
	Disable A	Audible Ala	rm				
	Enable C	iustom Sicr	eens				
First Displayed Custom Screen:						7	
_ Inclue	de All Mer	nbers for T	уре				
	Schedule	•					
🗖 Area							
🔲 VAV Air System (VAS)							
Chiller Plant Control (CPC)							
	Heat Pur	np Loop C	ontrol (HPLC)				



4. Click the Enable Security checkbox to place a check in the box (see Figure 511).

Note:

The software will automatically place a check in this box when an operator display password is assigned in the Site Security editor (see "Setting Up Security for the Operator Display" on page 147).

Figure 511. Setup Screen – Enable Security

Operator Display Security	
🔽 Enable Security	

5. Click Save to save your changes.

Disabling Security at the Operator Display

- 1. From the Operator Display editor, click the Setup tab (see Figure 510 on page 593).
- 2. With the Enable Security checkbox checked, click the checkbox to remove the check and disable security. With security disabled, users have edit access to all functions at the operator display.
- 3. Click Save to save your changes.

Operator Display Options

From the Setup tab, you can enable or disable certain items on the operator display touch screen. These items are shown in Figure 512. A description and procedures for how to enable or disable each item follows.

Figure 512. Setup Screen-Operator Display Options







Disabling Non-Critical Confirmation Screens

Confirmation screens display to confirm that you want to proceed with an operation, for example, making a change to a schedule or set point.

To disable non-critical confirmation screens:

- 1. From the Operator Display editor, click the Setup tab (see Figure 510 on page 593).
- 2. Click the Disable Confirmation Screen checkbox to place a check in the box. Only non-critical confirmation screens are disabled.
- 3. Click Save to save your changes.

Disable Audible Alarm

An audible alarm will beep when certain types of events and alarms are received at the operator display. If the user exits the event log with an unacknowledged alarm or event that has been set up to beep, the system will reset the beep-timer to beep again in 60 minutes. If an unacknowledged alarm or event exists, but that type of event does not beep, the beep-timer will not reset. Alarms and events are set up to beep in Site Configuration event routing (see "Setting Up Event Classes" on page 81).

To disable the audible alarm:

- 1. From the Operator Display editor, click the Setup tab (see Figure 510 on page 593).
- 2. Click the Disable Audible Alarm checkbox to place a check in the box.
- 3. Click Save to save your changes.

Enabling Custom Screens

This option is available when custom screens have been saved to the site database. You must first create custom screens before they are available, (see Chapter 35, "Using the Custom Screen Editor").

To enable custom screens:

- 1. Click the Enable Custom Screens checkbox (see Figure 512 on page 594).
- 2. Click the selection arrow. The list expands to display all custom screens saved to the site database.
- 3. Select a custom screen from the list. This screen will be the first custom main screen to display after the View button is pressed on the operator display home screen (see Figure 509 on page 592).
- 4. Click Save to save your changes.



Enabling the Quick-Select Function

The quick-select function automatically adds members of a selected application to the operator display object list. Figure 513 shows applications that use the quick-select function.

Figure 513. Setup Screen—Applications that Use the Quick-select Function

Include All Members for Type	
🗖 Area	
🗖 VAV Air System (VAS)	
Chiller Plant Control (CPC)	
Heat Pump Loop Control (HPLC)	

To enable the quick-select function:

- 1. Click the application for which you want to automatically add members. A dialog box displays asking you to confirm your selection.
- 2. Click OK.
- 3. Click Save. From this point forward, when the application is selected to be included in the operator display object list, the members of that application will automatically be included in the object list.

Note:

When the quick-select function is disabled (checkbox not checked), only the application will be moved in the operator display object list.





Selecting Custom Screens

Use the following procedure to select custom screens for use at the operator display. Custom screens are created in the Custom Screens editor (see Chapter 35, "Using the Custom Screen Editor").

To add a custom screen:

1. From the Operator Display editor, click the Custom Screens tab. The Custom Screens screen displays (see Figure 514).

Figure 514. Operator Display—Custom Screens Screen

_	Status	Setup	Devices	Object Types	Members	Main Screen	Custom Screens	
ſ	Once so	reens h	ave been s	aved to the BCU's	s object list, j	you must use To	pols>Delete Objects to	delete the screens.
l	Availabl	e Screer	ns				Screens Available	e at the Operator Display
	Custom Custom	Screen	1 4			Add >	Custom Screen 3	
l						Remove <		
l								
l								
l								
						Add All >>		
					Re	move All <<		
							An asterisk(*) indi hasn't yet been sa	cates that the custom screen aved to the BCU's object list.

- 2. In the Available Screens list, select one or more custom screens.
- 3. Click Add to add the custom screen. An asterisk appears behind the name of the screen, indicating that it has been added but not saved to the site database. You will need to save the custom screen in order for it to be available at the operator display.
- 4. Click Save to save your changes.

To remove a custom screen:

1. In the operator display list, select the custom screen you want to remove.

Note:

Only custom screens that have not been saved (an asterisk appears after the name) are moved back to the Available Screens list.

2. Click Save to save your changes.

To add all available custom screens:

1. Click the Add All button to add custom screens to the operator display list.



2. Click Save to save all custom screens to the site database.

To remove all unsaved custom screens:

- 1. Click the Remove All button. Only custom screens that have not been saved (asterisk appears after the name) are moved back to the Available Screens list.
- 2. Click Save to save your changes.

Deleting Saved Custom Screens

• To delete saved custom screens from the operator display list, go to the Tools menu and select Delete Objects.



Chapter 35 Using the Custom Screen Editor

The BCU Custom Screen editor enables you to create custom screens that you can download to a BCU operator display. Using the Custom Screen editor, you can develop screens that meet the unique needs of users and sites.

Situations when you might create custom screens include those where different levels of users access the operator display during daily operations. For example, at a site where the users are not advanced, you can create a screen that fits their needs and uses. For sites where more advanced users access the operator display, you can create more sophisticated screens than the standard screens.

Custom screens often provide quick access to frequently used information, as well as to information that is not available on standard operator display screens. With custom screens, for example, you can insert a graphic of your equipment and then apply graphic and text fields that report the status of the equipment and let you perform overrides.

With custom screens, you can:

- Create a library of custom screens and navigation schemes that can be used at multiple job sites
- Use a combination of custom and standard screens in the BCU operator display
- Navigate from a custom screen to a standard screen
- Create a monochrome bitmap unique to your site and import it and display it
- Define custom reports to display
- Define which object/properties that you can view on text and graphic screens

Creating custom screens for the operator display uses procedures similar to those for creating other Tracer Summit graphics. For more information about creating Tracer Summit graphics in general, see "Using the Graphics Editor Tools" on page 463.



About Custom Screen Graphics

Custom screen graphics are similar to graphics created with the Tracer Summit Graphics editor. With the Custom Screen editor, you can create a site or equipment graphic that includes text, images, target links to other graphics, and fields that display control values.

Each time you create a custom screen, you will see a custom graphic template (see Figure 520 on page 604). Starting with this template you add graphics or fields that display the information you need.

A custom screen graphic template always displays two icons: the Home target and the Back target. The Home target takes you to the main screen of the operator display (see Figure 509 on page 592). On the Home screen you can access the View, Alarms, and Schedules buttons. The Back target takes you to the last screen you viewed.

You add and delete custom screens to the operator display module using the Operator Display editor (see "Enabling Custom Screens" on page 595). In that editor, you can assign a custom screen as the first screen that appears when the View button is pressed (see "Selecting Custom Screens" on page 597).

Access the custom screen graphic tools using the tool bar (see "The Custom Screen Toolbar and Palette" on page 605). The tool bar provides formatting buttons that delete, paste, align, snap items to the grid, etc. The tool palette contains the buttons that you click to insert fields and other graphics, including text fields, control value fields, or bitmaps.

If you are connected to the operator display while you are creating a custom screen, you can view what values will appear in the graphic fields. Switch to run-time screen view (see "Switching to Run-Time (Live) Screen View" on page 617) to see these real-time values.

The graphics in Figure 515 and Figure 516 on page 601 display the example types of graphics and fields you can insert on custom screens. Figure 515 shows an example of an equipment status custom screen, while Figure 516 shows an example of a custom screen that was linked to from the first custom screen (Figure 515).





Figure 515. Example Custom Screen







Accessing the Operator Display Custom Screen Editor

1. From the setup menu, select Operator Display Custom Screen. The Select Custom Screen dialog box appears (see Figure 517).

Figure 517. Select Custom Screen Dialog Box

S	elect Custom Scre	en		×
	Name			
	Custom Screen 1			
	Custom Screen 3			
	OK	New	Cancel	Help

- 2. Select the screen you want to access.
- 3. Click OK to access the Custom Screen editor. The selected screen displays in the editor.



Creating Custom Screens

- 1. From the Setup menu, select Operator Display Custom Screen. The Select Custom Screen dialog box appears (see Figure 517 on page 602).
- 2. Click New. The New Operator Display Custom Screen Name dialog box appears (see Figure 518).

Figure 518. New Operator Display Custom Screen Name Dialog Box

New Operator Disp	lay Custom Scre	en Name	X
Operator Display Cust	om Screen Name:		
	OK	Cancel	Help

- 3. Type the name of the new custom screen.
- 4. Click OK. The Save Operator Display Custom Screen dialog box displays (see Figure 519).

Figure 519. Save Operator Display Custom Screen Dialog Box

Save Operator Display	Custom Screen	×
Operator Display Custom Screen Name:	Custom Screen 4	
BCU Name:	BCU1	
	Cancel Help	

5. From the BCU Name list, select the BCU operator display that you are creating the custom screen for.

Note:

Tracer Summit only allows you to assign the screen to a BCU that already has an operator display created for it.

6. Click OK to display the custom screen template (see Figure 520 on page 604).





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Custom Screen 4

Creating a Custom Screen from Another Custom Screen

You can create a custom screen based on one that you have already created.

To create a custom screen from an existing custom screen:

- 1. From the File menu, select Save Custom Screen As. The New Operator display Custom Name dialog box appears (see Figure 518 on page 603).
- 2. Perform steps 3-6 of "Creating Custom Screens" on page 603.



Using the Custom Screen Editor Tools

When the Custom Screen editor is open, two groups of tools display (see Figure 521): a graphics toolbar and a floating tool palette that you can move around the screen using the mouse.

Table 28 lists the toolbar buttons and what they do. Table 29 on page 607 lists palette buttons and their functions.

Figure 521. Custom Screen Editor Toolbar and Tool Palette



The Custom Screen Toolbar and Palette

The toolbar and palette contain text and graphic design buttons that help you create custom screens.

 Table 28. Toolbar Buttons and Descriptions

Toolbar Button	Description
Cut Selected Field(s)	Click to place the selected fields on the clipboard for use in this custom screen or another custom screen.
Copy Selected Field(s)	Click to place the selected fields on the clipboard for use in this custom screen or another custom screen without removing them from their current location.
Paste Selected Field(s)	Click to insert in the custom screen any fields that are currently held on the clip- board.
Delete Selected Field(s)	Click to remove the field from the custom screen. The item is not placed on the cus- tom screen clipboard.
Undo	Click to undo the last modification to the custom screen.



Toolbar Button	Description				
Redo	Click to redo the last modification to the custom screen.				
Align Left	Click to align all selected fields along the left side of the primary field. The primary field is the last field you selected when pressing CTRL and clicking one or more additional fields.				
Align Right	Click to align all selected fields along the right side of the primary field. The primary field is the last field you selected when pressing CTRL and clicking one or more additional fields. This menu selection has no effect on the y-coordinate of the selected field.				
Align Top	Click to align all selected fields along the top of the primary field. The primary field is the last field you selected when pressing CTRL and clicking one or more additional fields.				
Align Bottom	Click to align all selected fields along the bottom of the primary field. The primary field is the last field you selected when pressing CTRL and clicking one or more additional fields.				
Make Same Height	Click to make all selected fields the same height as the primary field. The primary field is the last field you selected when pressing CTRL and clicking one or more additional fields. This menu selection has no effect on the width of the selected field.				
Make Same Width	Click to make all selected fields the same width as the primary field. The primary field is the last field you selected when pressing CTRL and clicking one or more additional fields. This menu selection has no effect on the height of the selected field.				
Make Same Size	Click to make all selected fields the same dimensions as the primary field. The pri- mary field is the last field you selected when pressing CTRL and clicking one or more additional fields.				
Center Horizontally on Screen	Click to align the horizontal center of one or more fields with the horizontal center of the screen. If you select only one field, its horizontal center coincides exactly with the horizontal center of the screen. If you select multiple fields, their average horizontal center coincides exactly with the horizontal center coincides exactly with the horizontal center of the screen. This menu selection has no effect on the y-coordinate of the selected field.				
Center Vertically on Screen	Click to align the vertical center of one or more fields with the vertical center of the screen. If you select only one field, its vertical center coincides exactly with the vertical center of the screen. If you select multiple fields, their average vertical center coincides exactly with the vertical center of the screen.				
Move Field to Front	Click to place the selected field on top of any other fields that it overlaps.				
Move Field to Back	Click to place the selected field behind any other fields that it overlaps.				
Snap to Grid	Click to quickly align fields in the custom screen. When the Snap To function is enabled (see "Snapping a Bitmap or Field to the Grid" on page 617), the upper-left corner of any field that is new, or has been repositioned, will be aligned with the nearest grid intersection. The reference point is the upper left-hand corner of the field that is being positioned on the screen. The snap-to function is activated when you release the mouse button to insert the field onto the custom screen.				
Set X/Y Snap	Click to modify the grid spacing to any value between 4 and 32 pixels. The default spacing is 8 pixels. You can select separate horizontal and vertical spacing for the grid. They do not have to be the same.				

Table 28. Toolbar Buttons and Descriptions (Continued)



Toolbar Button	Description
Screen Name	Click to change the name of the custom screen object. This will change the name of the custom screen in the Tracer Summit database.
View Live Screen	Click to view the run-time version of the custom screen. Run-time view simulates what the custom screen will look like when it is viewed at the BCU operator display. The system will also validate the objects/properties that have been added to the cus- tom screen. Warning messages display when items are not available at the site with which the custom screen has been associated.

Table 28. Toolbar Buttons and Descriptions (Continued)

Table 29. Custom Screen Palette Buttons

Field Type	Field Name	Palette Button	Description
Status Fields	Status text	ß	Inserts text drawn from the property you specify.
	Binary	4	Inserts text drawn from the binary property you specify.
Control	Override control	P	Inserts a button that can override the present value for vari- ous objects within a Tracer Summit site.
Fields	Setpoint control	[123]	Inserts a numeric text field. The field allows users to change settings of numerical data.
Text or	Static text	Α	Inserts text that you specify.
Fields	Bitmap		Inserts a monochrome bitmap image, no larger than 320 x 240 pixels in size
Target Fields	Target button		Inserts a button that links to another custom or standard screen.
Cursor	Default cursor	5	Changes the cursor from an insertion point back to a selec- tion cursor.



Using the Custom Screens Pop-Up Menu

In the Custom Screens editor, you can select options from the menu bar or select them from a pop-up menu. To display a pop-up menu, right-click on a custom screen field or on the custom screen background. You can then make a selection from the pop-up menu (see Figure 522).

If the mouse button is positioned over a field, the pop-up menu items are specific to the field. Otherwise, the pop-up menu is specific to the custom screen.

Figure 522. Custom Screen Pop-Up Menu

BASD101 Equipment Screen			
Inactive			
	Edit Properties Set Size		
	Move to Back Move to Front Print	Unoccupied	

BASD101

Displaying the Custom Screen Palette

Use the following procedure to display the custom screen palette (see Figure 521 on page 605).

To display the custom screens palette:

- 1. From the Custom Screen editor, select Palette from the Layout menu. A submenu appears.
- 2. Select the palette mode you desire.
 - Click Show to display the palette
 - Click Hide to hide the palette





Configuring and Using the Grid

The Custom Screen editor has a grid that helps you place screen elements precisely on the custom screen template. Use the following procedures to configure the grid and snap to settings that help you lay out custom screens.

Displaying the Grid

- 1. From the Layout menu, select Grid Options.
- 2. Select On from the Grid Options submenu. The grid appears on the Custom Screen editor and enables the Grid Spacing and Snap To menu items. A check mark appears next to the On menu item in the Grid Options submenu of the Layout menu.
- 3. To remove the grid and remove the check mark next to the On menu item, repeat steps 1 2.

Configure Grid Color

- 1. With the grid displayed on the Custom Screen editor, from the Layout menu, select Grid Options.
- 2. Select Color from the Grid Options submenu.
- 3. Click the color that you want the grid to display.

Configuring Grid Spacing

- 1. With the grid actively displayed on the Custom Screen editor, from the Layout menu, select Grid Options. The Tracer Summit software displays the Grid Options submenu.
- 2. Click Spacing. The Snap Settings dialog box appears (see Figure 523).

Figure 523. Snapping Dialog Box

Snapping	×
Snap X Value: 8 💌	
Snap Y Value: 8 💌	
OK Cancel Help	

- 3. Scroll through the values in the Snap X Value list and/or click a new value from the Snap Y Value list. The newly selected snap X value and/or snap Y value displays in the corresponding fields of the dialog box.
- 4. Click OK to redisplay the grid with the modified grid settings.



Adding Status Text, Binary Text, and Setpoint Control Field(s)

Use the following procedure to add fields that can display information from sensors or equipment installed at your site.

To add control value fields:

1. From a custom screen, click the palette button associated with the type of field you want to insert (see Table 29 on page 607). The cursor turns into an insert prompt (see Figure 524).

Figure 524. Insert Prompt



2. Position the cursor at the location on the graphic where you want to insert the field and click. The field is inserted and an editor that is appropriate for that field displays.

From the dialog box, select the appropriate values as described in "Selecting Property Reference and Setup Information for Status Text, Binary Text, and Setpoint Control Fields" below.

Selecting Property Reference and Setup Information for Status Text, Binary Text, and Setpoint Control Fields

On the Property screen, you can specify the site name, object type, object name, and property for the field.

- Status text displays information about a single selected property for a specific UCM or for all UCMs of a specific object type that are installed at a single site.
- Binary text displays a text view of the binary property of an object that you specify. You can define which of the two logical states (0 and 1) will display.
- Setpoint control text is information that comes from a sensor or HVAC unit. Inserting this field allows you to change the values in this field at the operator display.

To select a property reference for these fields:

- 1. In the Object Type list, select an object type. The list displays only those property types and instances that are defined for the site.
- 2. In the Object Name field, select the name of the object from the list.
- 3. In the Property Name list, select the property name. (You must complete this field to exit the screen.)
- 4. Type or select the setup information for the field. After you enter this information, the Editor Text field displays the values you enter.
 - If you are entering Status text, use the arrow to select the right of decimal value.



- If you are entering binary text, type the text that will appear when the apparatus is in an inactive and/or active state.
- If you are entering setpoint information, type the minimum and maximum value.

Note:

Using this field you can restrict the acceptable range of values. For instance, a valid zone temperature setpoint might be between 50 and 90°F. However, for either energy-conservation or comfort reasons, you might want to restrict the setpoint that can be entered from the BCU operator display to a range of 65–85°F.

5. Click OK to insert the information on the custom screen.

Inserting an Override Control Field

Use the following procedure to select one of the six preselected control class names from the expanded selection list. The override field lets you override the present value for various objects within a Tracer Summit site.

To add an override control field:

- From a custom screen, select the Override Control Field button (see Table 29 on page 607). The cursor turns into an insert prompt (see Figure 524 on page 610).
- 2. Position the cursor at the location on the graphic where you want to insert the field and click. The field is inserted and the Override Control Field dialog box displays (see Figure 525 on page 612).

From the dialog box, select the appropriate values as described in "Defining the Properties of an Override Control Field" on page 612.



Using the Custom Screen Editor

Override			×
- Priority: -		- Object Selection	:
	Available on System:	Object Type:	Absorption Chiller (UCP2)
	1 - User - Emergency 2 - Custom Programming - No Min 2 - Minimum Op /0#	Object Name:	Powerful Absorber
	4 - User - High 5 - Custom Programming - High	Editor Text:	Unoccupied
	6 - Miscellaneous 7 - Demand Limiting 8 - Miscellaneous 9 - VAV Air Systems 10 - Chiller Plant Control 11 - Area Control 12 - User - Low 13 - Miscellaneous 14 - Timed Override 15 - Time of Day Schedules 16 - Custom Programming - Low		
Current:	12 - User - Low		
	ОК	Cancel	Help

Figure 525. Override Control Field Dialog Box

Defining the Properties of an Override Control Field

Note:

During daily operations, the user can override this value at the operator display.

- 1. In the Object Type list, select the object type.
- 2. In the Object Name list, select the object name or list of objects. The Editor Text displays the current value of the object in edit mode and as it exists at the operator display.
 - Select a specific object by its name if you want to display a present value override control for a single unit control module (UCM).
 - Select <List Of> if you want to display a present value override control for all UCMs of the selected object type. When you select this value, an override button displays on the custom screen for all UCMs configured at the BCU.
- 3. In the Current list, select the priority for the override control. The BCU operator display uses pre-defined priority controls for overrides.

Note:

The default is control class 12.

When you press the override button at the operator display, the priority of the override is evaluated to see whether it cancels the priority that is currently controlling the property.

Use the names in the Available on System list as a reference when assigning the current control class for the override control. The list



displays the 16 control class names that were set up in site configuration (see "Setting Up Control Priorities" on page 630).

4. Click OK to insert the information on the custom screen.

Inserting a Static Text Field

Use the following procedure to add a static text field. Static text is information on the custom screen that does not change. Examples of static text include a screen title, field title, or other item that adds information to the screen and remains unchanged.

To add a static text field:

- 1. From a custom screen, click the Static Text palette button (see Table 29 on page 607). The cursor turns into an insert prompt (see Figure 524 on page 610).
- 2. Position the cursor at the location on the graphic where you want to insert the Static Text field and click. The field is inserted and the Static Text dialog box displays (see Figure 526).

Figure 526. Static Text Dialog Box

	×
Enter Text:	
OK Cancel Help	

- 3. Type the text that you want displayed on the custom screen.
- 4. Click OK to add the text to the custom screen. The static text string displays on the custom screen.

Inserting a Custom or Standard Bitmap

Use the following procedure to add a custom or standard bitmap to the custom screen. Custom bitmaps are created using third-party graphics packages and imported into Tracer Summit (see "Creating and Importing Bitmaps" on page 620). Standard bitmaps are a set of standard equipment images that ship with Tracer Summit.

To insert a bitmap:

- 1. From a custom screen, click the Bitmap palette button (see Table 29 on page 607). The cursor turns into an insert prompt (see Figure 524 on page 610).
- 2. Position the cursor at the location on the screen where you want to insert the field and click. The Bitmap dialog box displays (see Figure 527 on page 614).

From the dialog box, select the appropriate values as described in "Selecting a Bitmap" described below. The field is inserted and the



Override Control Field dialog box displays (see Figure 525 on page 612).

From the dialog box, select the appropriate values as described in "Selecting a Bitmap" described below.

Figure 527. Standard Bitmap Dialog Box

Bitmap	×
	Absorption Chiller - Steam Centrifugal Chiller - Air Coole Centrifugal Chiller - Dual Comp Commercial Self Contained Helical Rotary Chiller Horizon Chiller - Steam IPAK AHU IPAK AHU IPAK RTU SCC Blower Coil - 2 Pipe SCC Generic Fan Coil SCC Generic VSHP SCC Generic WSHP SCC VestIP SCC WSHP SCC WSHP SCC WSHP SCC WSHP SCC WSHP
	O Custom 💿 Standard
OK Cancel Help	

Figure 528. Custom Bitmap Dialog Box

Bitmap		×
	projector screens	
	Custom	C Standard
OK Cancel Help	Browse	

Selecting a Bitmap

- 1. Select the type of graphic you are entering:
 - If you are inserting a custom bitmap that you have created and saved in a directory, click the Custom button.
 - If you are inserting a standard bitmap, click the Standard button.



- 2. Select the desired bitmap.
 - If you are inserting a standard bitmap, select it from the bitmap list (see Figure 527 on page 614).
 - If you are inserting a custom bitmap, click the Browse button and select the bitmap in the directory where you saved it (see Figure 528 on page 614).
- 3. Click OK to add the bitmap to the custom screen. The bitmap displays on the custom screen.

Linking a Target Button Field to a Custom or Standard Screen

Use the following procedure to link a target button with a custom or standard screen. During run-time mode at the BCU operator display, the user can press this target button and the LCD displays the custom screen that is the button's target.

To link a target button with a custom or standard screen:

- 1. From a custom screen, click the palette button associated with the type of field you want to insert (see Table 29 on page 607). The cursor turns into an insert prompt (see Figure 524 on page 610).
- 2. Position the cursor at the location on the screen where you want to insert the field and click. The field is inserted and the Target Button dialog box appears (see Figure 529).

Figure 529. Target Button Dialog Box

Target Button		×
Button Text:		
	Custom Screens	C Standard Screens
Button Target:		•
	C Object Name	🖸 Туре
Object Type:	<none></none>	•
Oł	< Cancel	Help

Defining the Properties of a Target Button

- 1. In the Button Text field, type the text that you want to display in the button as it appears on the custom screen.
- 2. Select the button target custom screen.
 - To link the field to a custom screen, click the Custom Screens button. In the Button Target list, all of the custom screens that are available appear. Select the custom screen that you want to display when the button is pressed at the operator display.



• To link the field to a standard screen, click the Standard Screens button. Selecting this button causes the Button Target selection list to display only the standard screens to which the target button may be linked. At this time, you can only link to the Main View standard screen. Selecting this target places the Main View bitmap on the target button (see Figure 530).

Note:

Remember that if you want to use the standard screens to view all the equipment at your site, include a target button with the Main View on one of your custom screens. If you do not include this button, you will only be able to access the custom screens you set up in the Operator Display editor as the first screen to display ("Enabling Custom Screens" on page 595), as well as the Home, Alarms, and Schedule screens.

Figure 530. Main View Bitmap



- 3. If you are linking to a custom screen, from the Object Name/Type list, select the type of object contained on the custom screen. Click None if you are linking the target button to another custom screen that has been developed for the site.
 - Click the Object Name button to sort the Object/Name/Type by the name of the object. The list orders the objects by alphanumeric name.
 - Click the Type button to sort the Object Name/Type list by type of object.
- 4. Click OK to insert the target button on the custom screen.





Saving Custom Screens

• From the File menu, select Save Custom Screen to save your changes.

Note:

The custom screens are not added to the operator display until you add them in the Operator Display editor and save them to the database ("Selecting Custom Screens" on page 597).

Switching to Run-Time (Live) Screen View

Use the following procedure to see how the custom screen displays realtime values in the fields you have added. You must be connected to the operator display to access real-time values.

To switch to a live-screen view:

- Click Run-Time (Live) Screen View on the Custom Screen editor toolbar (see Figure 531). The editing mode is deactivated and you cannot edit the custom screen while in live-screen mode.
 - If the sensors or equipment are working correctly, their values display. Otherwise, question marks (???) display, indicating that the present value for the field is unknown.
 - If the tools palette is active, the Tracer Summit software hides the palette. The rest of the screen maintains the same appearance.

Figure 531. Run-Time (Live) Screen View Button



Organizing Custom Screen Fields

Organizing fields includes such procedures as moving, copying and pasting, resizing, and related processes. For information on using the Custom Screen editor tools, see "Organizing Graphic Fields" on page 490. The following procedures describe how to use tools that are unique to the Custom Screen editor.

Snapping a Bitmap or Field to the Grid

Use the following procedure when you want to precisely place bitmaps on the grid, also called "snapping to grid."

To snap a bitmap to the grid in the custom screen template:

1. Use the default cursor to click the bitmap or field you want to edit. A cross-hatched border displays around the bitmap or field. (You can also select multiple fields to copy simultaneously. See "Selecting Multiple Fields at Once" on page 490.)



2. Click Snap to Grid on the Custom Screen editor toolbar (see Figure 532). The upper left hand corner of the item is snapped vertically and horizontally to the closest grid line.

Figure 532. Snap to Grid Button



Centering a Bitmap or Field Horizontally

- 1. Use the default cursor to click the bitmap or field you want to edit. A cross-hatched border displays around the bitmap or field. (You can also select multiple fields to copy simultaneously. See "Selecting Multiple Fields at Once" on page 490.)
- 2. Click Center Horizontally on the Custom Screen editor toolbar (see Figure 533). The bitmap or field aligns horizontally in the template.

Figure 533. Center Horizontally



Centering a Bitmap or Field Vertically

- 1. Use the default cursor to click the bitmap or field you want to edit. A cross-hatched border displays around the bitmap or field. (You can also select multiple fields to copy simultaneously. See "Selecting Multiple Fields at Once" on page 490.)
- 2. Click Center Vertically on the Custom Screen editor toolbar (see Figure 534). The bitmap or field aligns vertically in the template.

Figure 534. Center Vertically



Editing Custom Screens

Use the following procedures to select custom screens to edit and to select graphic elements on those screens for editing.

Selecting a Custom Screen to Edit When You Have Another Screen Open

1. With a custom screen open, from the File menu, select Open Another Custom Screen. The select Custom Screen dialog box displays (see "Select Custom Screen Dialog Box" on page 602).

When you have not yet saved the current custom screen, the Save Changes dialog box gives you the option to save the screen.



- 2. Select an available screen.
- 3. Click OK to edit the custom screen.

Selecting a Bitmap or Field to Edit

- 1. Click the bitmap or field you want to edit. A cross-hatched border displays around the element.
- 2. Right-click the bitmap or field. The custom screen pop-up menu appears (see Figure 535).

Figure 535. Example pop-up Menu with Edit Properties Selected



BASD101 Wireless Receiver Screen

- 3. Select Edit Properties from the pop-up menu. The property dialog box for the item appears.
 - If you are editing a Status Text field, the Status Text property dialog box appears.
 - If you are editing a Binary Text field, the Binary Text property dialog box appears.
 - If you are editing an Override Control field, the Override Control property dialog box appears (see "Defining the Properties of an Override Control Field" on page 612).
 - If you are editing a Setpoint Control field, the Setpoint Control property dialog box appears.
 - If you are editing a Static Text field, the Static Text property dialog box appears (see Figure 526 on page 613).
 - If you are editing a Bitmap, the Bitmap property dialog box appears (Figure 527 on page 614).
 - If you are editing a Target Button, the Target Button property dialog box appears (Figure 529 on page 615).
- 4. Change the properties as required.
- 5. From the File menu, select Save to store your changes in the database.





Changing the Custom Screen Name

Use the following procedure to change the name of the custom screen. This is the name of the custom screen as it appears beneath the custom screen template and in the Operator Display editor.

To change the name of the custom screen:

1. Click Screen Name on the Custom Screen editor toolbar (see Figure 536). The Screen Name dialog box appears (see Figure 537).

Figure 536. Screen Name Button



Figure 537. Custom Screen Name Change Dialog Box

Name		×
Screen Name:		
OK	Connect	1
UK	Lancel	Help

- 2. In the Screen name field, type the new name for the custom screen.
- 3. Click OK to change the name of the screen. The custom screen name that appears beneath the custom screen template changes to the new name.

Creating and Importing Bitmaps

Using the Custom Screen editor, you can import images you create in other software applications into graphics used in the Custom Screen editor. Tracer Summit can import bitmap (BMP) images that have been saved as monochrome and are no larger than 320x240 pixels.

To create these image files, you can use a variety of graphics packages, including Paintshop Pro versions 5 and later, AutoCAD, CorelDRAW, or Windows Paint.

Once you save the files to the appropriate directory, you can insert them into your custom screens in the same way as graphic BMP images are inserted (see "Inserting a Custom or Standard Bitmap" on page 613).

Closing a Custom Screen

- 1. With a custom screen actively displayed in the custom screen editor, from the File menu, select Close Custom Screen.
- 2. When you have not yet saved the custom screen, the Save Changes dialog box appears.
- 3. Click Yes to store your changes.



Chapter 36 Using Rover in Tracer Summit

You can use the Rover Comm5 service tool within your Tracer Summit software to configure unit controllers. There are two ways to do this:

- Start the full version of Rover from the Tracer Summit Tools menu
- Open Rover configuration screens from Tracer Summit UCM editors

You can use Rover to configure all supported Comm5 controllers through Tracer Summit. The Rover Comm5 service tool must be purchased and installed separately from Tracer Summit. Tracer Summit Version 15.0 or higher and Rover Version 5.0 are required.

Note:

Rover Comm4, the Rover Flash Download application, and the Air and Water Balancing application are not available through Tracer Summit. All other Rover functions are available.

For more information, see "About Using Rover in Tracer Summit" on page 623.

Starting Rover in Tracer Summit

Rover is available in Tracer Summit only when:

- Rover Comm5 Version 5.0 and Tracer Summit Version 15.0 or higher are installed on your computer.
- The site security supervisor has granted you access to Rover (full access).

To start Rover in Tracer Summit:

- 1. Connect locally or remotely to a Tracer Summit site.
- 2. From the Tools menu, select Rover. The BCU Selection dialog box appears.

If the Rover menu item is not available, check the requirements above.

- 3. Select the BCU that connects to the Comm5 link with the controllers you want to configure.
- 4. Click Configure with Rover. Rover Comm5 starts.



Accessing Rover Configuration Screens from UCM Editors

Rover configuration screens are available in Tracer Summit only when:

- Rover Comm5 Version 5.0 and Tracer Summit Version 15.0 or higher are installed on your computer.
- The site security supervisor has granted you access to Rover (configuration only).
- The software plug-in for the unit controller is available in Rover.
- The UCM is communicating with the BCU.

To open Rover configuration screens:

- 1. Connect locally or remotely to a Tracer Summit site.
- 2. On the Setup menu, point to Unit Controllers, then select the type of Comm5 controller you want to configure. The Select controller dialog box appears.

You can use Rover to configure the following types of controllers: Discharge Air Controller (DAC), Generic LonTalk Device (GLD), Tracer MP580/581, and Space Comfort Controller (SCC).

- 3. Select the controller you want to configure, then click OK. The appropriate UCM editor appears.
- 4. On the Setup tab, click the Configure with Rover button. The Rover Configuration dialog box appears.

If the Configure with Rover button is not available, check the requirements above.

- 5. Make changes as needed, then click the Download button to save your changes to the controller.
- 6. Click Close.



Setting up Security for Rover

Because the Rover Comm5 service tool makes available all configuration options for Comm5 controllers, you'll want to restrict access to qualified technicians and operators. Only site security supervisors can add or remove access to Rover.

To set up security for Rover:

- 1. From the Setup menu, select Site Security.
- 2. In the Select Security dialog box, select the user for whom you want to grant access to Rover.
- 3. On the Functions tab, select the Rover (Configuration Only) check box and/or the Rover (Full Access) check box.

The Configuration Only option grants access to configuration screens only (from a UCM editor). The Full Access option grants access to the complete Rover service tool so that bindings can be created between controllers.

- 4. Click Save.
- 5. Click the Open Another button to add access for other users.
- 6. Click Close when you are finished.

About Using Rover in Tracer Summit

Why should I use Rover in Tracer Summit?

By using Rover in Tracer Summit, you can:

- Configure Comm5 controllers remotely on links with BCUs
- Create and view bindings remotely on links with BCUs
- Use Rover and Tracer Summit on the same computer

Do I need Rover to manage my building automation system?

You probably don't need Rover to manage your building automation system on an ongoing basis. Rover is a configuration and troubleshooting tool for individual controllers—it doesn't have the sophisticated system-level reporting or scheduling capabilities of Tracer Summit.

If you're a Trane technician, using Rover in Tracer Summit makes it much easier to work with Comm5 controllers on Tracer Summit sites. You can connect your computer to a BCU locally or remotely and then use Rover to set up and troubleshoot connected Comm5 controllers.



Who can access Rover from Tracer Summit?

The site security supervisor must grant access to appropriate technicians and operators before they can use Rover through Tracer Summit. There are two levels of access:

- Rover (Configuration Only), which offers access only to Rover configuration screens from UCM editors
- Rover (Full Access), which offers access to the full version of Rover, including the ability to create bindings between controllers

Note:

An operator with full Rover access can configure all supported Comm5 controllers, even if that operator does not have access to certain types of Comm5 controllers in Tracer Summit.


Chapter 37 Using BACnet for Non-Trane Devices

BACnet (Building Automation Control network) is a standard communication protocol adopted by ASHRAE for sharing data between various manufacturers' equipment and building automation systems. Tracer Summit uses the BACnet protocol for all communications between BCUs and PC Workstations. BACnet protocol is also used to:

- Control and monitor non-Trane devices
- Communicate equipment information to a non-Trane control system so that it can control and monitor the Trane equipment

Tracer Summit uses and supports many standard BACnet objects. Tracer Summit also expands on BACnet by using Trane proprietary UCM objects. Trane UCM objects follow the BACnet protocol structure, but are not included in the BACnet standard. In order for non-Trane devices to interpret UCM object data, you must create standard BACnet input or output objects and reference them to UCM objects.

Connect a non-Trane device to a Trane BCU or PC Workstation through Ethernet, ARCNET, BACnet/IP, or an EIA-232 (point-to-point) connection.



Interfacing to Non-Trane BACnet Devices

Tracer Summit can control and monitor a non-Trane device. To set up a communication link with a device, you must create a BACnet object (non-Trane device) in the Site Configuration editor and assign a device ID.

To set up a non-Trane device:

- 1. Install Trane device and non-Trane device hardware, communication wiring, network cards, and software. (See the *Tracer Summit Hardware and Software Installation* guide for instructions.)
- 2. If the site with the non-Trane device is not defined, follow the instructions in Chapter 6 "Configuring Tracer Summit BCU Sites" to set up the new site. After you have set up the site, continue to the next step.
- 3. From the Setup menu, select Site Configuration. The Select Site dialog box displays (see Figure 538).

Figure 538. Select Site Dialog Box

S	elect Site		×
	Name BASDAUTO T100	Type Trac Trac	er Summit BCU er 100 Series
	OK	<u>N</u> ew Cancel	Help

- 4. Click the name of the site you want to display.
- 5. Click OK to display the Site Configuration editor (see Figure 539 on page 627).



Setup	Devices	Event Routing	Control Priorities	Units	Date/Time	Communications]
Site	CRAN	E	Modular BCU (BMT₩)	Version: 11.	014 💌	l
End o End C End C End C	of Billing)f Billing 1:)f Billing 2:)f Billing 3:	Name EOB string 0 EOB string 1 EOB string 2	Switch Phot Used Not Used Not Used				
Secu	rity Class N	ames]
	Class 1: Class 2:	Class 1 Class 2	Clas Clas	s 9: CI s 10: CI	ass 9 ass 10	_	
	Class 3:	Class 3	Clas	s 11: 🖸	ass 11		
	Class 4: Class 5:	Class 5	Clas Clas	s 12: Cl s 13: Cl	ass 12 ass 13		
	Class 6:	Class 6	Clas	s 14: 🖸	ass 14		

Figure 539. Site Configuration Editor Setup Screen

6. Click the Devices tab to display the Devices screen (see Figure 540).

Figure 540. Site Configuration Editor Devices Screen

Event tooling	Control Priorities	Jnits Date/Tin	ne Comm	unications	
evices	Workstations		Non-Trane BACnet device		
beu	ws1		BACnet D	evice O	
Create Device	Create Works	tation	Create No	n-Trane BACnet dev	ice
Edit Device	Edit Worksta	ation	Edit Non	Trane BACnet devic	ce
Delete Device	Delete Work	station	Delete N	on-Trane BACnet de	vice
Contrano	oom type		10000	recording	
UCM Name	UCM Type	Link	Address	Neuron ID	
DAC	Discharge Air Controll	1		00000000000000000	
DAC MP580/581-1-1-6	Discharge Air Controll MP580/581	1		000000000000000000000000000000000000000	
DAC MP580/581-1-1-6 MP580/581-1-1-7	Discharge Air Controll MP580/581 MP580/581	1 1 1		000000000000000000000000000000000000000	
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-1	Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro	1 1 1 1		000000000000 00000000000 00000000000 0000	
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-11-2	Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro Space Comfort Contro	1 1 1 1 1		000000000000 00000000000 00000000000 0000	
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-1-1-3 SCC-1-1-3 SCC-1-1-4	Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro.	1 1 1 1 1		000000000000 00000000000 00000000000 0000	
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-1-1-2 SCC-1-1-3 SCC-1-1-4 SCC-1-1-5	Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro.	1 1 1 1 1			
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-1-1-2 SCC-1-1-3 SCC-1-1-5 VariTane UCM 1	Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro VaritTane UCM 1	1 1 1 1 1 1 2	1	000000000000 00000000000 00000000000 0000	
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-1-1-3 SCC-1-1-3 SCC-1-1-4 SCC-1-1-5 VariTrane UCM II/III/IV	Discharge Air Controll MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro VariTrane UCM 1 VariTrane UCM 1	1 1 1 1 1 1 2 3	1 65		
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-1-1-2 SCC-1-1-3 SCC-1-1-4 SCC-1-1-5 VariTrane UCM I VariTrane UCM II/III/IV Create UC <u>M</u>	Discharge Air Controll MP580/581 MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro VariTrane UCM II/III/IV VariTrane UCM II/III/IV	1 1 1 1 1 1 2 3	1 65	000000000000 00000000000 00000000000 0000	-
DAC MP580/581-1-1-6 MP580/581-1-1-7 SCC-1-1-1 SCC-1-1-2 SCC-1-1-3 SCC-1-1-3 SCC-1-1-4 SCC-1-1-5 VariTrane UCM I VariTrane UCM II/II/I/V Create UC <u>M</u> <u>Assign Neuron ID</u>	Discharge Air Controll MP580/581 Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro Space Comfort Contro VariTrane UCM I VariTrane UCM II/III/IV	1 1 1 1 1 1 2 3	1 65		



7. Click Create Non-Trane BACnet Device to display the Create New Non-Trane BACnet Device dialog box (see Figure 541).

Create New Non-Trane BACnet Device	X
Device Name:	Object Types: All Types
Device ID: 0	Scan this Device for Available Objects Scan
Available Objects	Selected Objects
Object Name Type Instance	Object Name Type Instance building 1 Analog Input 0
	Add >>
	Add All >>
	<< Remove
r Manuallu Add New Objects	
Type: Analog Input Ad	ld OK Cancel Help
Instance: 0	
Name:	

Figure 541. Create New Non-Trane Device Dialog Box

8. Type the name and the device ID for the BACnet device.

Note:

The device ID is provided by the device manufacturer. Each device on a network must have a unique device ID. Contact the manufacturer for instructions, if necessary.

- 9. Select the object type from the Object Types field. The default selection is All Types.
- 10. Click the Scan button to display a list of all the available objects in the non-Trane device.
- 11. From the Available Objects list, select the objects that you want to view. Then, click the Add button to add the items to the Selected Objects list.
- 12. Click Okay to save the changes and return to the Devices tab.
- 13. Click the Communications tab and check the Disable Automatic Updates box (see Figure 542 on page 629).



Figure 542. Disable Automatic Update Checkbox



Disable Automatic Update

Note:

By checking this box, Tracer Summit will no longer scan non-Trane BACnet devices for updated objects every 30 minutes. However, Tracer Summit will get updates from the non-Trane devices when objects are viewed in custom graphics or Objects and Properties.

14. To set up control priorities, go to "Setting Up Control Priorities" on page 630.

Offline Editing

When editing offline, you can add an object to a non-Trane device using the Manually Add New Objects fields.

To manually add new objects:

- 1. Type the object type, instance, and name of each object.
- 2. Click the Add button.

Note:

If you manually add an object with the same type and instance of a device already in the Selected Objects list, the object will be replaced with the new name that you manually gave the object.



Setting Up Control Priorities

Control priorities identify the levels at which Tracer Summit applications control an object.

Each control priority name is mapped to a control application. You can change the default application for any control priority. You can also change the control class name for some control classes.

Note:

Be careful when modifying BACnet default applications. If you are using BACnet protocols to communicate with non-Trane devices, you must make sure the names align for each control class.

Selecting Control Priority Defaults

1. From the Site Configuration editor, click the Control Priorities tab (see Figure 543).

Setup Control 2 · Cu 3 · Min 4 · Us 5 · Cu 6 · Mis 9 · VA 10 · C 11 · A 12 · U 13 · M 14 · T 15 · C	Devices I Priority Nar er - Emerge istom Progra- nimum On/C er - High stom Progra- scellaneous scellaneous v Ari Systen Scellaneous W Air Systen tiscellaneou ined Overri- tiscellaneou ined Overri- tiscellaneou ime of Day 3 ustom Progra	Event Routing mes nsy mming - No Min Jif mming - High ng ns Control s de Schedules Schedules amming - Low	Control Priorities Available Control App Auto Life Safety BCU CPL Server an Critical Equipment C Manual Life Safety	Units Dications d Interpre ontrol	Date/Time	Communications Assigned Control A) pplications	
	Control Cla	ss Names	Tracer Summit	Defaults		BACnet D	efaults	

Figure 543. Site Configuration Editor Control Priorities Screen

2. Click the Tracer Summit Defaults button or BACnet Defaults button to select a set of defaults. The default names display in the Control Priority Names list.



Modifying the Control Application for a Class

- 1. From the Site Configuration editor, click the Control Priorities tab (see Figure 543 on page 630).
- 2. Click the name of the control class you wish to modify in the Control Priority Names list.
- 3. Click the name of the application you want to assign to the class in the Available Control Applications list.
- 4. Click the right arrow to assign the application. The application name displays in the Assigned Control Applications list.
- 5. To remove an application from the Assigned Control Applications list, click the name to highlight it. Then click the left arrow to remove the application.

Modifying the Name for a Priority Class

- 1. From the Site Configuration editor, click the Control Priorities tab (see Figure 543 on page 630).
- 2. Click the Control Class Names button to display the Control Class Names dialog box (see Figure 544).

Control Class Names		×
Control Class 1: User - Emergency	Control Class 9: VAV Air Systems	
Control Class 2: Custom Programming - No Min	Control Class 10: Chiller Plant Control	
Control Class 3: Minimum On/Off	Control Class 11: Area Control	
Control Class 4: User - High	Control Class 12: User - Low	
Control Class 5: Custom Programming - High	Control Class 13: Miscellaneous	
Control Class 6: Miscellaneous	Control Class 14: Timed Override	
Control Class 7: Demand Limiting	Control Class 15: Time of Day Schedules	
Control Class 8: Miscellaneous	Control Class 16: Custom Programming - Low	
	OK Cancel	Help

Figure 544. Control Class Names Dialog Box

- 3. Click the field to the right of the control class number you wish to modify. The control class names that cannot be modified are unavailable.
- 4. When you are done making changes to the class names, click OK to close the dialog box.



Providing Information to Other Systems

A non-Trane system can control and monitor Trane equipment. To set up communications to another system, create a BCU for the Trane device. If you are using an EIA-232 point-to-point) connection with the BMTW you must also create a modem object. The BMTX has an on-board EIA-232 connection. Then create BACnet analog and binary input and output objects to reference Trane UCM properties.

After creating the BACnet input and output objects, you can print a list of BACnet objects that exist on the site. The non-Trane device manufacturer will use the list to configure the controlling device.

Trane provides listings (templates) of typical BACnet input/output points for Trane equipment. Please contact Trane for more information.

Communication Flow Between Devices

Figure 545 on page 633 illustrates the communication flow between Trane and non-Trane devices.





Figure 545. BACnet Flow Diagram

1



To set up Tracer Summit to provide information to other systems:

- 1. Install Trane device hardware, communication wiring, network cards, and software. (See the *Tracer Summit Hardware and Software Installation* guide for instructions).
- 2. Set up a site. (Follow the instructions in Chapter 6, "Configuring Tracer Summit BCU Sites.")
- 3. From the Site Configuration editor, click the Devices tab (see Figure 546).

Set	up Devices	Event Routing	Control Priorities	Units	Date/Time	Comm	iunications	
De	vices		Workstations		Ν	Ion-Trane	BACnet device	
bo	u		ws1			BACnet D	evice 0	
	Create	Device	Create Worl	kstation	. 0	Create No	n-Trane BACnet dev	ice
	Edit D	evice	Edit Work:	station		Edit Non	-Trane BACnet devic	ж
	Delete	Device	Delete Wo	rkstation		Delete N	on-Trane BACnet de	vice
UC M M S S S S S V V	Ms in Selected AC PS80/581-1-1 PS80/581-1-1 D580/581-1-1 CC-1-1-2 CC-1-1-3 CC-1-1-3 CC-1-1-3 CC-1-1-3 CC-1-1-4 CC-1-1-5 ariTrane UCM Create <u>A</u> ssign N	I Device 6 7 1 11/11//V 11/11//V 11/11//V 11/11//V 11/11//V 11/11//V 11/11//V	UCM Type Discharge Air Controll. MP580/581 Space Comfort Contro. Space Comfort Contro. Space Comfort Contro. Space Comfort Contro. Space Comfort Contro. VariTrane UCM I VariTrane UCM II/III/T	Lin . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 2 V 3	k A	ldress 1 65	Neuron ID 00000000000 00000000000 00000000000 0000	×

Figure 546. Site Configuration Editor Devices Screen

4. Click Create Device to display the Create New Device dialog box (see Figure 547 on page 635).



Create New Device	×
Device Name: BMTX Device ID: 18 Network Number: 1 Panel Type: Enhanced BCU (BMTX)	
Communication Links Link 1: Isolated Comm 3 Link 2: Non-Isolated Comm 4	Add Add Edit Edit
Link 3: Non-Isolated Comm 4	BCU Event Log Add Edit
Security Classes	Cancel Help

Figure 547. Create New BCU Dialog Box

- 5. Enter a name for the device in the Device Name field. Use up to 32 characters.
- 6. Type a number in the Device ID field.

Note:

All devices must have a unique device ID provided by the manufacturer. Devices that share the same network must have unique device numbers. Contact the device manufacturer for instructions, if necessary.

7. Type a number in the Network Number field. The default value is 1.

Note:

Devices (BCUs and non-Trane devices) on a network must share a network number. When you have multiple networks (ARCNET, Ethernet, EIA-232) on a site, each *network* must have a unique network number. For example, if you have a BACnet interface using an EIA-232 connection between a BCU and another vendor's gateway, then the BCU must have a different network number than the other vendor's gateway.



8. From the Panel Type list box, select the device type: Enhanced BCU (BMTX), modular BCU (BMTW) or BCU (BMTS). If the panel type is a modular BCU (BMTW), the Capacity Cards field is available. For high a capacity BCU, select 2. For a standard capacity BCU, select 1.

The BMTX has an on-board EIA-232 connection that does not require configuration, skip the following steps for the BMTX.

9. To set up an EIA-232 connection, click Add Modem to display the Create New Modem dialog box (see Figure 548).

Figure 548. Create New Modem Dialog Box

Create New Modem			×
Modem Name:			
Security Classes	ОК	Cancel	Help

- 10. Enter a name for the modem in the Modem Name field. Use up to 32 characters. Assign a name that will help you identify the modem, such as *BACnet Connection* or *EIA-232 Connection*.
- 11. Click OK to return to the Edit Devices screen.
- 12. To add a BCU I/O module to the site, see Chapter 18, "BCU Inputs and Outputs" for instructions.

Note:

The BCU I/O module buttons are only selectable for Modular BCUs (BMTW)

- 13. Click OK to display the Devices screen.
- 14. Click Save.



Configuring the Modem for an EIA-232 Connection

Note:

This section only applies to the BMTS and the BMTW. The BMTX is automatically set up.

- 1. To configure the modem for an EIA-232 connection, from the Setup menu select Communications. Additional menu selections display.
- 2. Select BCU Modem. The Select BCU Modem dialog box displays (see Figure 549).



Selec	st BCU Modem	X
	AdministrationModem Chiller Plant BCU Modem-Hardwir ICS University Modem Manufacturing Modem	
	OK Cancel Help	

- 3. Click the name of the modem you created for the EIA-232 Connection.
- 4. Click OK to display the Modem editor (see Figure 550).

Figure 550. BCU Modem Editor Status Screen

Status Setup Configuration	Phone Book Classes
BCU Modem Name Comm Port: Connection Status:	Chiller Plant BCU Modem Hardware 1 BCU Offline

5. Click the Setup tab to display the Setup screen (see Figure 551 on page 638).



Status	Setup	Configuration	Phone Book Classes	
BCI Cor Ma:	U Modem nnect By: kimum Dia	Name: ling Attempts:	BCU Modem Hardwired	

Figure 551. BCU Modem Editor Configuration Screen

- 6. Click the arrow to the right of the Connect By field to display a list of modem types.
- 7. Select Hardwired.

Defining Input/Output Points

1. Define a list of input/output reference points you will need.

Use the Trane provided list of typical BACnet input/output points for Trane equipment to create your point list.

2. Using the Input/Output editor (accessed through the Setup menu), create the analog inputs, analog outputs, binary inputs, or binary outputs you have defined. (For instructions, see Chapter 17, "Creating Input/Output Objects.")

Note:

As a BACnet input or output object is created, a BACnet ID is automatically assigned to the object. Once you have created a BACnet input or output object, do not delete the object. The object address is only assigned once, and cannot be recreated after it is deleted.



Running a Report of BACnet Objects

1. From the Status menu, select Reports. The Select Report to View dialog box displays (see Figure 552).

Figure 552. Select Report to View Dialog Box

Select Report to Vie w	х
Run Report Type: © Standard Live C Standard Trend C Custom	
C Open a Saved Report	
OK Cancel Help	

- 2. Click Standard Live to select a standard live report.
- 3. Click OK. The Select Standard Live Report dialog box displays (see Figure 553).

Figure 553. Select Standard Live Report Dialog Box

Select Standard Live	e Report	×
Standard Report Ty	pe: Site Reports	•
Report Name:		
Diagnostic Report Site BACnet Report Site Commissioning	Report	
ОК	Cancel	Help

- 4. Click the arrow to the right of the Standard Report Type field to display a list of report types.
- 5. Click Site Reports to display a list of site reports in the Report Name field.
- 6. Click Site BACnet Report.
- 7. Click OK to display the Sort Report By dialog box (see Figure 554 on page 640).



Figure 554.	Sort Report	By Dialog Box
-------------	-------------	---------------

Sort Report By		×
Sort By: C Device Id C Name		
OK	Cancel	Help

- 8. Click Device ID to sort the report by the device ID; click Name to sort the report by the device name.
- 9. Click OK to display the Site BACnet Report in the Report Viewer (see Figure 555).



	Site BACnet Report		
Database Obiect Listing Site: BASD2020			
08-00-67	BASD Applications WS	(Device, 103)	
08-00-62	Technology Center WS	(Device, 82)	
08-00-00-51	Chiller PlantWS	(Device, 81)	
08-00-00-65	Administration WS	(Device, 101)	
08-00-00-66	ICS University WS	(Device, 102)	
08-00-00-79	Manufacturing WS	(Device, 121)	
08-00-02	Administration BCU	(Device, 2)	
00-00-06	W1 Temp	(Analog Input, 6)	

10. To save the report in the default reports folder, click Save. For more information on saving reports, refer to the *Tracer Summit Daily Operations* guide.



11. To print the report on a printer, click Print to display the Print dialog box (see Figure 556).

Figure 556. Print Dialog Box

Print			? ×
Printer			
Name: HP Laser	Jet 4SiMX		<u>P</u> roperties
Status: Default pri Type: HP LaserJ Where: \\BASBN Comment:	nter; Ready et 4Si MX D01\ENG4SiMx	I	Print to file
Print range ⓒ <u>A</u> ll ⓒ Pages <u>f</u> rom: <mark>1</mark> ⓒ <u>S</u> election	ţo:	Copies Number of <u>cop</u>	ies: 1
		OK	Cancel

12. Click OK to print the report. For instructions on changing the default Print dialog box settings, see your Microsoft Windows or printer documentation.

Note:

Some manufacturers can input BACnet object data directly to their system from an electronic file. You can use the Print to file field in the Print dialog box to create an electronic file for this purpose.

- 13. To print the report to a file, click the Print button in the Report Viewer.
- 14. Click to select the Print to file check box.
- 15. Click OK to print to file. The print file will be saved in the default report folder and will have a .PS file name extension.
- 16. Click Close to exit the Report Viewer.



Using BACnet for Non-Trane Devices



Chapter 38 Restoring into the Tracer Summit Workstation

After you have backed up site database files, Custom Programming Language (CPL) files, graphics files and report files, you can restore these files into the original PC workstation or a new PC workstation. For more information on backing up Tracer Summit files, refer to the *Tracer Summit Daily Operations* guide.

Restoring a Site and CPL Files

You can restore backup site files and Custom Programming Language (CPL) files to the original PC Workstation or a new PC Workstation.

To restore a site and CPL files:

- 1. From the Tools menu, select Restore. Additional items display.
- 2. Select Site. The Restore Location dialog box displays (see Figure 557). The Restore File Path field displays the default path and name of the backup file to be restored.

Note:

If you need help restoring a site, click Tutorial to access The Tracer Summit Operations Tutorial (tutorial button not shown).

Figure 557. Site Restore Dialog Box

Restore Location	X
Restore File Path: C:\Program Files	\Tracer Summit\backup\Database\SiteBkup.BD Browse
Available Location(s)	Selected Location(s)
APEX Industries	Add>>
	<< Remove
	Add All >>
	<< Remove All
	Next > Cancel Help



3. To change the Restore File Path, click Browse. The Select File to Restore From dialog box displays (see Figure 558).

Figure 558. Select File to Restore From Dialog Box

Select File to	Restore from				? ×
Look jn:	🔄 backup	•	£	Ť	b-b- b-b-
Cpl database graphics reports					
File <u>n</u> ame:	SiteBkup.bdb				<u>O</u> pen
Files of type:	Site Backup Files (*.bdb)		•		Cancel
	Open as <u>r</u> ead-only				

- 4. Select the directory where the site backup file is saved from the file list. The file list displays previously saved backup files.
- 5. Select the file name to restore from the backup file list.
- 6. Click Open. The Site Restore dialog box displays again. The new file name and path display in the Restore File Path field.
- 7. Select the specific site or sites to be restored from the Available Site(s) list box.
- 8. Use Add or Add All to copy the selected sites to the Selected Sites window. Click Remove or Remove All to remove the sites from the Selected Sites window.
- 9. Click Next to display the Restore CPL dialog box (see Figure 559 on page 645).



Restore CPL		×
CPL Source Path: CPL Destination Path:	C:\Program Files\Tracer Summit\cpl\library C:\Program Files\Tracer Summit\CPL	Browse
Available CPL file(s): air_calc.cpl ch_avail.cpl dem_calc.cpl enthalsi.cpl eqvent2.cpl header.cpl horiz_av.cpl hw_reset.cpl oa-enab2.cpl occ_unoc.cpl pump_rot.cpl rt sched.cpl	Selected CPL file(s):	
	< Back Hestore Can	cel Help

Figure 559. Restore CPL Dialog Box

- 10. To change the source path for the CPL backup files, click Browse next to the CPL Source Path field. The Browse for Folder dialog box displays.
- 11. Select a CPL source path from the selection window.
- 12. Click OK. The Restore CPL dialog box displays the selected CPL files.
- 13. To change the location to restore CPL files to, click Browse next to the CPL Destination Path field. The Browse for Folder dialog box displays.
- 14. Select a CPL destination path.
- 15. Click OK. The Restore CPL dialog box displays.
- 16. Select the CPL file(s) to be restored from the Available CPL File(s) list box.
- 17. Click Add or Add All to copy the selected CPL files or sites to the Selected CPL Files list box. Click Remove or Remove All to remove the site from the Selected CPL Files list box.
- 18. Click Restore to begin the restoring process. The Site Restore dialog box displays.

Note:

To over write all selected locations, check the Overwrite all selected sites check box. Any sites that fail are listed at the end of the restore process.

The selected site database backup file and selected CPL files are restored to the locations you selected.



Restoring Global Graphics

You can restore backup global graphic files and expanded message files to the original PC Workstation or a new PC Workstation.

To restore global graphics:

- 1. From the Tools menu, select Restore. Additional items display.
- 2. Select Graphics. The Restore Graphic dialog box displays (see Figure 560).

Dath:			
Path:		Browse	Liear
Destination Global Graphics O Site Graphics	Sites:		v
Details			
Graphic Object Name	HTML File Name		
Chiller Plant Customer Support Area Engineering Lab graphic Engineering RTU graphic Engineering South graphic Finance Department Area In-Process graphic Main Display Product Communications graphic Team	chiller plant.htm CUSTSUP.HTM Englab.htm engsouth.htm FINDEPT.HTM inproc.htm Mainmenu.htm prodcomm.htm team.htm	×	Select All
7			

Figure 560. Restore Graphic (Global Graphics) Dialog Box

- 3. To change the source path of the graphics, click Browse. The Browse for Folder dialog box displays.
- 4. Select a file location path.
- 5. Click OK. The Restore Graphic dialog box displays.
- 6. Click Global Graphics to restore the graphics that are common to multiple sites.
- 7. Select the graphics to be restored from the Details window. Click Select All to select all global graphics.
- 8. Click OK to restore the selected graphics.



Restoring Site Graphics

You can restore backup site graphic files and expanded message files to the original PC workstation or a new PC workstation.

Note:

The restore function for site graphics is required only for creation of a node on the Navigation Tree. Once this node is created, it is no longer necessary (or possible) to restore. The updated files (.GIF, .BMP, .JPG, .HTM, .AVI) can be copied via Windows Explorer to the correct directory.

To restore a site graphic:

- 1. From the Tools menu, select Restore. Additional items display.
- 2. Select Graphics. The Restore Graphic dialog box displays (see Figure 561).

Restore Graphic	×
Source Path:	Browse Clear
C Global Graphics © Site Graphics	Sites: BASD2020
Details Graphic Object Name	HTML File Name
Engineering Area Engineering Lab graphic Engineering Lab, page 2 Engineering Notth, page 2 Engineering Notth, page 2 Engineering RTU graphic Engineering RTU, page 2 Engineering South, page 2 Engineering South, page 2 Final Assembly graphic	ENGAREA.HTM englab.htm englabp2.htm engnotth.htm engnthp2.htm Engrtu.htm engstup2.htm engstup2.htm engstup2.htm engstup2.htm final.htm
🔲 Show Existing Graphics 👘 Path:	c:\program files\tracer summit\graphics\basd2020
	OK Cancel

Figure 561. Restore Graphic (Site Graphics) Dialog Box

- 3. To change the path where backup graphics are located, click Browse. The Browse for Folder dialog box displays.
- 4. Select the directory location.
- 5. Click OK. The Restore Graphic dialog box displays.
- 6. Click Site Graphics to restore graphics specific to a site.
- 7. Select the site to restore from the drop-down list.
- 8. Select the graphics to be restored from the Details window. Click Select All to select all site graphics.



9. Click OK to restore the selected graphics.

Restoring a Report

You can restore backup report files to the original PC Workstation or a new PC Workstation.

To restore a report:

- 1. From the Tools menu, select Restore. Additional items display.
- 2. Select Reports. The Select Report Backup File dialog box displays (see Figure 562).

Figure 562. Select Report Backup File Dialog Box

Select Repo	t Backup File			zip ? 🗙
Look <u>i</u> n:	reports	•	t ř	8-8- 8-8- 8-8-
📓 Administra	tion Activity.rxp			
🛛 🖻 Chiller Ope	erating Log.rxp			
🛛 🔊 Site BACn	et Report.rxp			
) Training R	ooms.rxp			
File <u>n</u> ame:	*.гхр			<u>O</u> pen
Files of <u>type</u> :	Reports Backup (*.rxp)			Cancel

- 3. Select the file location of the backup report from the Look In field.
- 4. Select the report file to restore.
- 5. Click Open to restore the selected report. You are returned to the Tracer Summit main window.
- 6. To view the restored reports, click Reports.



Restoring Operator Display Custom Screens

Use the following procedures to restore a custom screen.

To restore custom screens

- 1. From the Tools menu, select Restore. A submenu appears.
- 2. Select Custom Screen from the Restore submenu. The Select File to restore From dialog box appears.
- 3. Select the file that contains the custom screens.
- 4. Click OK. The Restore Custom Screens dialog box appears (see Figure 563).

Figure 563. Restore Custom Screen Dialog Box

Restore Custom S	òcreens	×
Available Sites:	Powers Available BCU's: BCU1	•
File Name:	C:\Program Files\Tracer Summit\backup\Database\CScreenBkup.SDB	vse
Custom Screens:	Selected Custom Screens:	
Custom screen2	Custom screen1 Custom screen3	
	< Remove	
	Add all >>	
	<< Remove All	
	OK Cancel H	elp

- 5. Click the Available Sites arrow to select the site whose custom screens you want to restore.
- 6. Select the BCU from the Available BCUs list. The selected BCU displays in the Available BCUs field.
- 7. In the Custom Screens list, select the custom screens that you want to restore.
- 8. Click Add to add the screens to the Selected Custom Screens list (see Figure 563).
- 9. Click OK. The Tracer Summit software restores the selected custom screens to the selected BCU.



Restoring a Tracer 100 Site

Use the following procedures to restore a Tracer 100 site.

To Restore Into an Empty Tracer Summit Database

When you first configure Tracer Summit workstation, the database is empty.

• To restore a Tracer 100 site into an empty database, follow the procedure described in Chapter 6, "Restoring a Site from the Site Creation Wizard."

Restoring Into a Non-empty Database

This procedure assumes that a backup file of the Tracer 100 site was already made. For more information about backing up a site, refer to the *Daily Operations* guide. This backup file is a *.BDB backup file, not a *.SAV file backup.

• Perform the steps described in "Restoring a Site and CPL Files" on page 643.



Chapter 39 Deleting Objects and Sites

From time to time you may need to delete an object or a site from the database because:

- An object such as analog or binary input was created for troubleshooting purposes
- An object was placed in a database by mistake
- The database has grown and you want to reduce the number of objects in it
- A site is no longer needed

Although you can delete either an object or a site, the procedure has some built-in safeguards:

• If you are trying to delete an object that is referenced by other objects, the references to the object you want to delete must be replaced with references to other objects.

Note:

Object editing should not be done while a deletion is in process (other than editing references to a object you want to delete).

• If any user is logged on to the site you want to delete, they must log off before you can delete the site. You cannot be logged onto the site you want to delete.

Note:

Only users with security access can delete objects or sites. For more information, see Chapter 9, "Setting Up Security—Tracer Summit System."



Deleting Objects

The basic steps in deleting an object are:

- 1. Select the objects you want to delete (see "Selecting Objects to Delete" on page 652).
- 2. Search to determine if other objects are dependent on (reference) that object (see "Searching for Referencers" on page 653).
- 3. If other objects are referencing the object you want to delete, you must edit those references (see "Opening and Editing the Referencing Object Editor" on page 654). If no other objects reference the object you want to delete, go to the next step.
- 4. Delete the objects (see "Deleting the Objects" on page 657).

Selecting Objects to Delete

1. From the Tools menu, select Delete Object. Tracer Summit displays the Delete Objects dialog box (see Figure 564).

Figure 564. Delete Objects Dialog Box



- 2. Make a selection:
 - To delete objects (UCMs, applications, input/output devices, graphics, and so on) from the site you are currently logged onto, click Current Site Objects.
 - To delete graphics that have been saved as global, click Global Site Objects.
- 3. Click OK. The Select Object(s) to Delete dialog box displays with a list of the object types and all instances of that object (see Figure 565 on page 653).



Select Object(s) to Delete	Ē
Select the Object(s) to be deleted. Then p	press the [Search] button.
Select Object Type: Trend	
Available Names:	Selected Object Names:
CO2 Level Zone Temp Trend	Add >> CPL Program / Area_1_TOV Pager / American Paging Trend / CO2 Level VariTrane UCM II/III/IV / VariTrane UCM II/III/IV-3-68 <<< Remove All
Search Cancel	Help

Figure 565. Select Object(s) to Delete Dialog Box

- 4. In the Select Object Type list box, scroll to the type of object you want to delete. All of the objects of that type are displayed by name in the Available Names list box.
- 5. Click on the names of the objects you plan to delete in the Available Names list.
- 6. Click Add to add the selected names to the Selected Object Names list.
- 7. Use Add, Add All, Remove, and Remove All to change the Selected Object Names list. If you want to delete all objects of the same type, use Add All. If you want to delete several—but not all—objects of the same type, highlight and add them one at a time.
- 8. Click Search. (The Search button is available only if you have selected at least one item to delete.)
- 9. Continue to the next section.

Searching for Referencers

After you click Search at the Select Object(s) to Delete dialog box, Tracer Summit searches for objects that reference the object you want to delete and displays the Search Results screen (see Figure 566 on page 654).

Search results for objects are divided into two types:

- Objects that have no references display in the Objects That Can Be Deleted list box.
- Objects that have other objects referencing them display in the Objects That Cannot Be Deleted list box.



Deleting Objects and Sites

🔺 Tracer	r Summit -	[Delete O	bjects Sea	arch Resu	lts]				_ 8 ×
<u> </u>	<u>C</u> onnect <u>S</u>	<u>∂</u> tatus <u>V</u> iev	v <u>G</u> o S <u>e</u> l	tup <u>T</u> ools	<u>W</u> indow	<u>H</u> elp			_ 8 ×
+ Back	→ Forward	값 Home	(S) Schedule	E Reports	ģ Alarms	°₽ E⊟ Tree			
Site(s) Th	nat Can Bel	Deleted:		_					-
TRN1				D	elete Objec	ŧ			
				ł					
Site(s) Tł	nat Cannot I	3e Deleted:							
		< Back		Finish	C	ancel	Help		
For Help, p	ress F1						User: TRACER	Site: BASD2020	

Figure 566. Delete Objects Search Results Screen

If there are objects that you want to delete listed in Objects That Cannot Be Deleted list box, go to the section "Opening and Editing the Referencing Object Editor" on page 654.

Otherwise, finish deleting the objects (proceed to the section "Deleting the Objects" on page 657).

Opening and Editing the Referencing Object Editor

To complete the process of deleting the object listed in the Objects That Cannot Be Deleted list box, you must edit the other objects that reference this object. These other objects are listed in the Object Is Referenced By list box. This box displays the object name, the object or objects that have references to the one you want to delete, and the property whose reference must be changed if you are to delete the object (see Figure 567 on page 655).



Deleting Objects

A Tasaa Curreit (Dalata Obiasta Casado Davulta)			
File Connect Status View Go Setup Tools Window H	elp		- P 스
← → △ ○ □ ↓ Back Forward Home Schedule Reports Alarms	Fee		
Site(s) That Can Be Deleted: TRN1 Delete Object			<u> </u>
Site(s) That Cannot Be Deleted:	el Help		
For Help, press F1	User: TRACER	Site: BASD2020	

Figure 567. Delete Objects Search Results Screen

To open and edit the referencing object editor:

- 1. Double click on the object you want to edit in the Object is Referenced By list box. The editor for that object displays. The initial screen is the Status screen. The Delete Object Search Results screen remains open behind the object's editor window.
- 2. Click the tab that contains the referencer edit control fields you want to change.



3. On the new screen, click the referencer button in the appropriate referencer edit control field (see Figure 568).

Figure 568. Referencer Edit Control Field



Clicking the referencer button displays the Select Property Reference dialog box (see Figure 569). The type, name, and specific property defining the object you want to delete are displayed.

Figure 569. Select Property Reference Dialog Box

Select Property	Reference	Х
<u>Т</u> уре:	Absorption Chiller (UCP2)	
<u>N</u> ame:	Chiller B	
<u>P</u> roperty:	Condenser Water Flow Rate	
	OK Cancel Help	

- 4. In the Select Property Reference dialog box, you must choose a different object to replace the object you want to delete. Select a new object with the Type or Name fields, then select the property you want that is associated with that object.
- 5. Click OK. You return to the referencing object's editor window.
- 6. If there are referencer changes in any other editor screen of this object, click the tab for that screen.
- 7. Make the changes by repeating steps 3-6 for each property listed in the Objects Is Referenced By list box, until no more fields reference the object you wish to delete.
- 8. Click Save to save the changes in the object editor.
- 9. Click Close to close the object editor window and return to the Delete Objects Search Results screen. The object for which you have changed the references will now be able to be deleted and will be displayed in the Objects That Can Be Deleted list box.
- 10. Proceed to the next section.



Deleting the Objects

If the search results show objects in the Objects That Can Be Deleted list box, the Delete Object button on the Delete Objects Search Results screen is active (see Figure 566 on page 654).

To delete objects in the Objects That Can Be Deleted list box:

1. Click Delete Object. A message tells you that all editors will be closed (see Figure 570).

Figure 570. All Editors Will Be Closed Message

SUMMIT	
٢	To avoid database corruption, all editors will be closed at this time. Continue?
	Yes <u>N</u> o

2. Click Yes. For each object listed in the Objects That Can Be Deleted box, a confirmation prompt displays (see Figure 571).

Figure 571. Confirm Delete Object Dialog Box

Delete Object	×
Delete Object: Modem: AdministrationM	odem
Yes No	Yes To All Cancel

- 3. Click Yes to All to continue the deletion process. All of the objects listed in the Objects That Can Be Deleted list box are removed from the database.
- 4. Click Finish. You are returned to the Tracer Summit main screen.



Deleting a Site

The procedure for deleting sites is similar to the procedure for deleting objects. The main difference is that Tracer Summit searches for security rights that allow you to delete a site, not for references to the objects that you want to delete.

To delete a site, you must follow these rules:

- You must be logged onto a site in order to delete another site.
- If only one site is available, you cannot delete a site.
- You cannot delete the site you are logged onto (see the next section for steps in how to log off of the current site).

Note:

Deleting a site removes it from the PC Workstation, but not from the BCUs.

IMPORTANT

Deleting a site removes all graphics. If you might want the data again, then back up the site before deleting it.

Deleting a Site You Are Currently Logged Onto

If you want to delete a site you are currently logged onto, you must log off and log onto another site. The steps for logging onto a different site are:

- 1. From the Connect menu, select Log On.
- 2. Select another site to log onto.
- 3. Proceed with the steps to delete a site.

Deleting a Site You Are Not Logged Onto

1. From the Tools menu, select Delete Object. The Delete Objects dialog box displays (see Figure 572).

Figure 572. Delete Objects Dialog Box



2. Click Delete Entire Site.



3. Click OK. The Select Site(s) to Delete dialog box is displayed. The list of sites is shown in the Available Sites list box (see Figure 573).

Select Site(s) to Delete	X
Available Sites: 3000 BASD 2020 TRN1	Add >> Add All >>
Search Cancel	Help

- 4. Click the sites you would like to delete.
- 5. Use Add or Add All to place the sites you want to delete into the Selected Sites list box. You can use Remove and Remove All to move sites back to the Available Sites list box if you need to.
- 6. When all the sites you wish to delete are listed in the Selected Sites list box, click Search. Tracer Summit displays the results of the search for sites to delete process on the Search Results screen (see Figure 574 on page 660).



Deleting Objects and Sites

Tracer Summit - [Delete Objects Search Results]		
<u> </u>		_ 8 ×
	ŝ	
		<u> </u>
Site(s) That Can Be Deleted:		
Site(s) That Cannot Be Deleted:		
< Back Finish Cancel	Help	-
For Help, press F1	User: TRACER	Site: BASD2020

Figure 574. Site Deletion Search Results Screen

The Search Results screen shows:

- The Site(s) That Can Be Deleted list box listing sites that have no users logged on to the system and are available for deleting. When there are sites in this list box, the Delete Object button becomes active.
- The Site(s) That Cannot Be Deleted list box, which contains sites that currently have users logged on and cannot be deleted.

Note:

Sites that have users logged on cannot be deleted. If you are currently logged on to the site you want to delete, it is unavailable for deleting. See "Deleting a Site You Are Currently Logged Onto" on page 658.

7. Click Delete Object. A message tells you that all editors will be closed (see Figure 575 on page 661).


Figure 575. All Editors Will Be Closed Message

SUMMIT	×
?	To avoid database corruption, all editors will be closed at this time. Continue?
	<u>Yes</u> <u>N</u> o

8. Click Yes. For each site listed in the Site(s) That Can Be Deleted box, a confirmation prompt displays (see Figure 576).



Delete Object			X
Delete Site: BAS	SD 3000		
Yes	No	Yes To All	Cancel

9. Click Yes if you want to continue with the deletion. The site and all associated objects, including graphics, are removed from the database.







Chapter 40 Resetting a Device

The Tracer Summit System allows you to reset a BCU at four different levels. In order of least to greatest impact on the BCU, the reset levels are:

- 1. Reset
- 2. Clear BCU RAM and Reset
- 3. Clear Database, RAM, and Reset
- 4. Clear Code, Database, RAM, and Reset

For detailed information about reset levels, see Table 30 on page 667.

The reset procedures are typically done by selecting BCU Reset/Restore from the Tools menu in Tracer Summit.

Software Method to Reset BCU

- 1. From the Tools menu, select BCU Reset/Restore.
- 2. The BCU Reset/Restore dialog box displays (see Figure 577).

Figure 577. BCU Reset/Restore Dialog Box

BCU Reset/Restore	×
Site: BASD2020	
Choose BCUs to Reset	
Administration BCU Chiller Plant BCU	Select All
ICS University BCU Manufacturing BCU	Select None
Choose BCU Reset Level	
Reset	
C Clear RAM and Reset	
Clear Database, RAM and Reset	
C Clear Code, Database, RAM and Reset	
Code Version:	~
Reset Cancel	Help

- 3. Click the BCUs you wish to reset in the Choose BCUs to Reset box. To select all the BCUs, click Select All. To clear the current selections, click Select None.
- 4. Click the desired level of reset in the Choose BCU Reset Level field.



- 5. If you select Clear Code, Database, RAM and Reset, click the arrow to the right of the Code Version field to select the version of code you wish to download into the BCUs.
- 6. Click Reset to reset the selected BCUs. The Reset/Restore dialog box closes, and you return to the previous screen.

Hardware Method for Resetting BCU

All of the "Clear. . . Reset" procedures can also be done at the BCU as described in the following subsections.

Reset

To reset, cycle power to the BCU by unplugging and re-plugging the 24 Vac power connector at the top of the termination board.

Clear BCU RAM and Reset

The BCU normally preserves the content of RAM through power failure. RAM contains the current status of all BCU object trend data, events, and alarms. In most cases, this is desirable. However, there are circumstances in which you may need to clear RAM. This is normally done from the PC Workstation, as described in this guide. RAM can also be cleared at the BCU as follows:

- 1. Turn off power to the BCU.
- 2. Set all DIP switches to on.
- 3. Turn on power.
- 4. The LED display should show 8, then 7, and then E with the decimal point flashing.

CAUTION

If you wait longer than 10 seconds, the BCU code and database may be cleared as well as its RAM.

- 5. As soon as the LED display shows E with the decimal point flashing, turn off power.
- 6. Set the DIP switch to its proper position.
- 7. Turn on power. The LED display should show the following sequence:
 - 8, 7, 6, 4, 3, 2, H, -, "dancing dash"



Clear Database, RAM, and Reset

Database contains the user programmed data, which consists of all BCU objects, such as areas, VAVs, I/O, UCMs, trends, CPL, etc.

In most cases, you will perform this operation from the PC Workstation, as described in this guide. However, this can also be done at the BCU as follows:

- 1. Change the DIP switch S1 position 8 to Off.
- The LED display will show the following sequence: J, 8, 7, 6, 4, 3, 2, H, -, -P
- 3. Change DIP switch S1 position 8 back to on.
- The LED display will show the following sequence: J, 8, 7, 6, 4, 3, 2, H, -, -P, Pd, "dancing dash"

When the BCU has code and detects a change in DIP switches at S1, the BCU clears the current database and looks for a PC Workstation from which to download a database that matches the new device ID (corresponding to the settings at DIP switch S1).

Clear Code, Database, RAM, and Reset

Code consists of the BCU image software, which is similar to the operating system in a PC.

In most cases, you will force a BCU to accept new code from the PC Workstation, as described in this chapter. However, this can also be done at the BCU as follows:

Note:

You must have a PC Workstation connected, and that workstation must contain the appropriate version of BCU code. If the PC Workstation is not connected, the procedure will have no effect on the BCU.

- 1. Turn off power to the BCU.
- 2. Set all DIP switches to on.
- 3. Turn on power. The LED should display the following sequence:

8, 7, E (with decimal point flashing for about 10 seconds), 5, 4, 3, 2, –, EC, Cd, –H, "dancing dash"

- 4. Turn off power and set the DIP switch to its proper position.
- 5. Turn on power and observe the following sequence: 8, 7, 6, 5, 4, 3, 2, 1, -P,Pd, "dancing dash."



Clear Comm5 database

In a BMTX BCU (or a high-capacity BMTW BCU), a Comm5 database will be cleared if a BACnet database site name is loaded that does not match the Comm5 database site name. To force the BCU to clear its Comm5 database, perform the following actions:

- 1. Create dummy site with a different name than the existing Comm5 database in the BCU.
- 2. If the BCU is connected, you can clear the BACnet database from the BCU by using the Tools menu and BCU Reset/Restore. Or you can clear the database by using the DIP switches.
- 3. Immediately disconnect (either unplug Ethernet or use the Disconnect icon) so BACnet database does not automatically reload.
- 4. Select dummy site.
- 5. Reconnect to the BCU.
- 6. Download the dummy site to the BCU.
- 7. Once the BCU begins normal operation, you can clear the BACnet database again from the BCU (using either the Tools menu and BCU Reset/Restore, or the DIP switches).
- 8. Disconnect the BCU from the PC Workstation so the dummy database is not automatically sent again.
- 9. Select the real site.
- 10. Establish connection again to the BCU to download the real BACnet database.
- 11. The Comm5 database will be cleared and will need to be reconstructed.

If the BACnet database already has assigned Neuron IDs, from the main menu select Setup, and then Site Configuration. Choose the Device tab and click the Assign Neuron ID button. Install the Comm5 link as described in "Comm5 Links" on page 93.



Clear Comm5 database

Table 30. Reset level descriptions for the BMTX BCU

BCU reset/restore command	Reasons to reset	Notes	
Reset (same as power cycle)	Initialize modem	• Temporary loss of communication with	
Resets the processor on the selected BCU	 Initialize communication links 	the BCU	
Clear RAM and reset	 Update members in VAS (not applicable) 	Same as reset plus:	
 Clears the RAM from the BCU and resets the BCU processor If the BCU has a database intact, it auto- matically reconstructs the RAM as needed and resumed processing 	for Comm5 VAS)	 Loss of operator overrides. Values return to Tracer Summit defaults Loss of pending alarms No loss of Comm5 database 	
Clear database, RAM, and reset	 Bestore a backup database from the PC 	Same as Clear RAM and Reset plus:	
 Clears both the database and RAM from the selected BCU and resets the BCU processor. <i>Note:</i> To prevent download of database from secondary workstations, disconnect them from LAN before proceeding. Clear the BCU database using the BCU reset/restore command or using DIP switch method. Then disconnect BCU from the LAN either by removing the LAN cable or using the Disconnect button on the Toolbar. Restore the new database to the PC workstation. Reconnect the BCU. Database will be automatically sent to the BCU. 	 Replace a database in the BCU. Replace a database in the BCU. 	 Takes longer to regain communication with the BCU and UCMs than a clear RAM or reset does. If database is restoring from a backup of the site, current trend and calculation information is lost and reverts to information stored in backup. 	
Clear code, database, RAM, and reset	• Required when upgrading Tracer Sum-	Same as Clear Database, RAM, and Reset	
 Clears all memory—code (image), database, and RAM—from the BCU and resets the BCU processor. If the PC workstation is online, it automatically downloads the code. Once the code is successfully downloaded, the PC workstation automatically downloads a new database. 	mit BCU image	 plus: Code will load to a BCU that does not have an address. If a database with a different address or site name is loaded to the BCU, the BCU Comm5 database will be cleared. 	
Clear Comm5 database	 Used for troubleshooting problem links 	 Cannot be done from a PC Workstation 	
 Happens automatically when site name in BCU changes or BCU address changes. If the PC workstation is online, it auto- matically downloads the code. Once the code is successfully down- loaded, the PC workstation automati- cally downloads a new database. 	vitch method, refer to "Hardwara Mathad for J	BCU Reset/Restore menu.	



Restoring a Tracer 100 Panel

Use the following procedure to restore a Tracer 100 site. There are several things you should remember before performing this procedure:

- The procedure only applies to Tracer 100 sites.
- You must be logged on with a username that has level 1 or level 2 security access.
- You must have created a .SAV file. You can create a .SAV file using other Trane products such as Tracer Access, BMN, or PCL Edit. You can also use Tracer Summit's Task Manager (see "Specifying Where to Save a Backup File" on page 229) or the Backup a Remote application (see "Creating .SAV files for Tracer 100 Panels" on page 412).
- You can only restore .SAV files into panels for which they were intended. In other words, you cannot restore a .SAV file from a Tracer 100i into a Tracer 100L, nor can you restore a .SAV file from Tracer 100 panel version 14.x, for example, into a Tracer 100 panel version 15.x.
- After you restore a Tracer 100 panel, the building control for the panel is turned off. After the restore, you must turn it back on through terminal emulation.

To restore a Tracer 100 panel:

- 1. From the Tools menu, select Restore. A submenu appears.
- 2. Select Remote. The Restore a Remote dialog box appears (see Figure 578).

Figure 578. Restore a Remote Dialog Box

Restore a Remote				x
SAV File to Use:				Browse
Remote Unit to Restore:	SUMMIT1		•	
		OK	Cancel	Help

When you restore a Tracer 100 site with several panels, the Remote Unit to Restore list displays all of the site panels. The list is sorted by ascending unit numbers, with unit 1 as the Tracer 100 COP.

- 3. Click the Browse button to find the .SAV file in the workstation database.
- 4. From the Remote Unit to Restore list, select the panel that you want to restore.
- 5. Click OK.
 - If you are not currently connected to the site, Tracer Summit automatically connects to the panel. The Restore in Progress dialog box appears. (The restore process can last as long as 15 minutes.)



- If Tracer Summit automatically connects and restores the panel, at the end of the process a dialog box appears. This dialog box asks you whether you want to start a terminal emulation session with the panel you just restored. Click OK.
- 6. Turn the building control back on.

Resetting a Device





A Alarm

An audible or visual signal from a Building Management System that warns of an abnormal and critical operating condition.

Analog

Data represented as a variable value, such as temperature control or flow.

Analog input (AIP)

A varying voltage, current, or resistive signal that can be converted to engineering units of temperature, pressure, humidity, wattage, etc.

Analog output (AOP)

An analog output is a varying voltage or current signal used to change the position of an external device such as an electric valve.

Application

A specific program or task to which a computer solution can be applied.

Application program

A computer program designed to meet specific user needs, such as a program that controls or monitors a process. Examples: Time of Day Scheduling, Chiller Plant Control.

Array

A list of elements. In the case of Chiller Plant Control, a list of identical properties used for each chiller identified as a member of the chiller plant.

Auto refresh

Ability to view events in the Event Log viewer without manual intervention. Any events normally seen by pushing the manual refresh button in Tracer Summit version 12 can be seen automatically if auto refreshing is enabled.

Auto Save

Process of saving the event log using the workstation Task Manager.



B Backup copy

One or more files that are copied onto a storage medium for safekeeping in case the original gets damaged or lost.

BACnet

A standard communication protocol developed by the American Society of Heating, Refrigeration, and Air Conditioning Engineers. It defines how information will be packaged for transportation between building automation system (BAS) vendors.

BCU-ELO

Building Control Unit-Event Log Object.

BCU

Building control unit.

BCU Operator Display Object List

List of objects/properties existing at a single site that have been selected for view at a BCU operator display. The Operator Display Setup editor is used to define this list.

BCU Operator Display Override List

List of objects/properties existing at a single site that have been selected to be allowed to be overridden at a BCU operator display. The Operator Display Setup editor is used to define this list.

BCU sizing tool

A Microsoft Excel spreadsheet available in the TraneNet information system that allows the BAS engineer to determine the number of building control units (BCUs) that are required at a site.

Billing period

The period of time between consecutive readings of the utility company meters for billing purposes.

Binary

- A number system with only two digits, 0 and 1, in which each symbol represents a decimal power of two; *or*
- Any system that has only two possible states or levels, such as a switch that is either on or off. (On is represented as 1 and off is represented as 0.); *or*
- The presence of voltage (equivalent to 1) or absence of voltage (equivalent of 0) in a computer circuit.

Binary input (BIP)

An ON/OFF input to the processor to indicate status. Some typical examples are flow switches, limit switches, or other contacts.



Binary output (BOP)

An ON/OFF control output from the processor.

Building control unit (BCU)

An intelligent field panel that communicates with multiple Trane unit control modules (UCMs).

Building automation system (BAS) or Building management system (BMS)

A combination of controllers and other software products that communicate with and control various mechanical systems to enable building management. These include the heating, ventilation, and air conditioning systems as well as lighting systems access control, and miscellaneous other devices within a building.

Building Management Network (BMN)

A DOS-based product for managing multiple Tracer and Tracker sites.

C Calculated analog

A term synonymous with point type 11. Calculated analogs are *logical* or software analog points that are similar to analog output and analog inputs, except they are not associated with hardware. Calculated analogs can be used in most Tracer 100 programs as analog inputs or outputs. Calculated analogs are most frequently used as setpoints for direct digital control (DDC) loops, and various types of ICS equipment such as SCP, AHU, and TCM, etc. These calculated analog setpoints can be set by the operator or calculated using the process control language (PCL) program.

Calculated binary

A term synonymous with point type 08. Calculated binaries are *logical* or software binary points that are similar to binary outputs, except they are not associated with hardware. Calculated binaries can be controlled by any Tracer Building Control program, just like binary outputs (point type 05). You can use the on/off status of calculated binaries in other Tracer Summit programs in place of binary inputs or binary outputs.

Capacity

The maximum output of the equipment. For example, "The chiller has a capacity of 800 tons."

CenTraVac

Trane's registered name for the line of hermetic centrifugal refrigeration machines that provide chilled water for comfort or industrial water cooling installations. The CenTraVac chiller name has also been applied to include certain models of Trane's helical rotary chiller.



Chiller plant control

Tracer Summit application that allows the operator to optimally coordinate multiple chillers and their related equipment to supply cold water to the system.

Chiller sequencing

An integral part of the chiller plant control that sequences and automatically rotates up to six chillers and their associated pumps to optimize individual chiller runtime and system performance.

Code

A software program, running in the BCU, equivalent to the operating system of a personal computer. It controls the physical operation of the BCU. It is different from the CPL code that a technician would write.

Communication link

A set of wires connected from one device to another that is used to transmit information between the devices. This link is typically a twisted pair of wires for Trane building management systems.

Configuration

The functional arrangement of a system. Usually set by computer interface or DIP switch settings.

Constant volume system

Air-distribution system that keeps the volume of air supplied to a system constant to maintain acceptable conditions.

Context object

A UCM or an application object defined when a user launches a graphic from the navigation tree, a graphic target, or from the UCM or application editor.

COP Tracer

Communications Processor. A term applied to the lead Tracer 100 Series panel in a unit-to-unit configuration. The COP panel uses address 1. Communicating with unit-to-unit Tracer 100 panels can only occur as a pass-through of the COP Tracer. The communications baud rate is limited to 1200 baud.

Custom Programming Language (CPL)

Language used in Tracer Summit to write routines to accommodate control strategies. Routines are used to sequence equipment, calculate setpoints and values, and perform shutdown sequences.

Custom graphic

• A hard-coded graphic created by a user in Tracer Summit; or



- A standard graphic (template) that has been modified; or
- A site graphic available only to a specific site.

Custom screen

An operator display screen created by an installer/programmer. It always has a Home button and might include a monochrome bitmap, data items, and custom navigation buttons.

D DAC

Discharge Air Controller profile.

Database

A computer file that contains all site-specific information used by a BCU to control site operation. This file is stored in the PC Workstation and in individual BCUs on the network. In the PC Workstation, the file is named summit.mdb and is located in C:\Program Files\Tracer Summit\Database directory.

Demand limiting

A function that reduces electrical demand by measuring incoming electrical power and either turning off specified loads or adjusting temperature setpoints to keep energy usage below a prescribed level during the demand interval.

Device

Computer hardware that performs some specific function. Input devices such as a keyboard are used to get information into the CPU. Output devices, such as a printer, are used to take information out of a computer in some usable form. Input/output devices are able to perform both input and output of information.

Diagnostic

A program that checks the operation of a device board or other component for malfunctions and errors and reports its findings.

Diagnostic report

A form of standard live report for displaying diagnostics from the active UCM status data location within Tracer 100 and Tracker panels. For BCU sites, the upload is from UCMs and analog input and binary input objects.

DIP switches

Configuration switches of various components of the building management system. Placing each individual DIP switch either on or off configures the address and the function of the miscellaneous control components of the building management system.

Direct digital control (DDC)

A higher level of programming used by building management systems to control variable outputs, such as valves or actuators. In industry, DDC means direct control by a microprocessor controller, with no intermediate devices.

Discovery

The process of finding all online controllers on a Comm5 link and displaying their Neuron IDs and Location Labels.

Display

In this document, the term display is used to refer to the touchscreen display device.

E Economizer control

The opening or closing of various HVAC dampers to cool a building with outside air, usually when the outside air is 40°F to 65°F.

EEPROM

Electrically erasable programmable read-only memory. An electronic chip that can store information such as control set points, be reprogrammed in the field, and maintain its memory during a power loss.

EIA-232

Interface standard used for communications between peripheral devices and energy management systems.

E-mail profile

A group of settings that define how the mail server is set up for a particular user. For example, a profile may include access to a mailbox on Microsoft Exchange Server and specify that the Outlook Address Book appears in the Address Book dialog box.

E-mail recipient

In message forwarding, just an e-mail address. A forwarded alarm message can be retrieved by a person using a client-side e-mail program such as Microsoft Outlook or an e-mail-supported pager service provider, or both.

Ethernet

Networking standards that transmit data at 10 Mbps using a specified protocol. Ethernet is a popular LAN technology.

Event log

A listing of events such as alarms and control actions that can be viewed by the building management system operator.



Event

Generated by an alarm, a diagnostic, a user operation such as controlling a point or object, logging on/off, or acknowledging alarms. Typically, an event turns into an alarm if it has been set up to beep and/or require acknowledgement.From the point of view of the user, several types of inputs to the control system generate an event.

Extranet

Proprietary Internet site for Trane personnel to access when not able to get to TraneNet.



Filtering

Filtering is used to display only the rows of events that meet user-specified criteria. In other words, rows that do not match the criteria are eliminated from the displayed list.

G Global change

A mechanism through which a user can change the setup of many objects of the same type in one action, rather than having to open every object to make the change.

Global graphic

A graphic that can be used to display information for any site. A graphic object is created in the system site and is available for use by all sites connected to the PC Workstation.

Global objects

Includes the workstation modem, global graphic, keyboard macros, group security, group configuration, and message forwarding.

Graphic

A compilation of Summit-supplied information and images that form a display of information on the PC. A graphic requires a graphic object in the database, an HTML file, and one or more image files to be in a specific file structure under the \Graphics subdirectory in Tracer Summit.

Graphics can be displayed from the navigation tree, from a UCM editor, from a graphic target field, or from the main menu.

Group

- An organization of one or more devices under a single name; or
- A collection of sites or groups in the Tracer Summit database that exist as an object in the system. The user can perform an action on a group, which in turn will propagate that action to every site or group of sites that belongs to the group



H Hard-coded graphic

A graphic that contains no template fields. All the information that is needed to display the data in the fields on the graphic is stored in the HTML file for the graphic. This graphic does not require a context to display its information in the graphic fields. It can appear on the navigation tree without having to be assigned by the navigation tree editor.

HTML file

A file that is written in Hypertext Markup Language, a standard coding language used to create HyperText documents for use on the World Wide Web or an intranet network. A file of this type is required for a graphic object to be displayed. The file must be in the \Graphics directory under the standard, custom, or site name subdirectories. The Tracer Summit Graphics Editor creates the file along with the graphic object.

Information maintained in the file includes all graphic fields (types, properties, positions, size, and order of display) and image references (names, type, position, size, and order of display). The file also keeps the necessary information from the graphic object to take the object from one PC Workstation to another. This file cannot be used in a Web Browser to display Tracer Summit information.

HVAC

Heating, ventilating, and air conditioning. Building mechanical system equipment.

l Image

File used by a graphic to display a photo or picture.

Internet service provider (ISP)

Services such as Microsoft Network, AOL, Compuserve, etc.

L LAN

Local Area Network

LCD

Liquid crystal display. The display screen that is an integral part of the operator display.

Level 0

Security level at which the user can view the grouping structure from the Group Setup dialog box but cannot access grouping functionality in Global Changes, Task Manager, or Message Forwarding. User cannot access Group Security.

Level 1

Security level at which the user can view the grouping structure from the Group Setup dialog box but cannot edit group setup. User can access



grouping functionality in Global Changes, Task Manager and Message Forwarding. User cannot access Group Security.

Level 2

Users have full group access. They can access and edit group security and group setup. They can access grouping functionality in Global Changes, Task Manager, and Message Forwarding.



M Macro

A key that is set up by the user to execute often-used keystroke sequences on the PC.

MAPI

Messaging Application Programming Interface. A messaging architecture and a client interface component for applications such as electronic mail, scheduling, calendaring, and document management. As a messaging architecture, MAPI provides a consistent interface for multiple application programs to interact with multiple messaging systems across a variety of hardware platforms.

Source: The Free On-line Dictionary of Computing, @ 1993-2001 Denis Howe

N Navigation scheme

The way in which screens and graphics are linked together. It defines what will happen next when the user touches a target on the BCU operator display.

Navigation tree

The panel on the left-hand side of the main Tracer Summit window that displays all sites, buildings, areas, and HVAC equipment set up for the system.

Night economize

Setting that uses cool, dry outside air during unoccupied periods to precool a building, thus minimizing the use of mechanical cooling.

Night heat/cool

Setting that provides mechanical heating/cooling during unoccupied periods to bring space temperature back to within a predefined range.

O Object

An element recognized by the Tracer Summit database. Objects may be input and output points, UCMs or applications.

Object instance

At a site there may be many units of a particular object type installed: Centrifugal Chillers, VAV II/IIIs, and Voyagers, etc. An object instance refers to a unit installed on the link Chiller 1 or Voyager 12. Each object instance will have a unique address used to identify it to the building automation system.

Offline

The operational state of a device when not communicating on the network.



Online

The operational state of a device when communicating on the network or with a control device.

Operator display

A liquid crystal display (LCD) mounted on a modular BCU for basic operator functions including viewing a local BCU event log. The operator display consists of an LCD with a printed circuit to control the display. Additional components include a time clock and external memory. The operator display is equipped with a touch screen as a user input device.

Operator display object list

The list of objects/properties existing at a single site that have been selected for viewing an operator display. The Operator Display editor is used to define this list.

Optimal start

The process of efficiently starting HVAC equipment so that the occupied setpoints will be achieved at the appropriate time. The Tracer Summit system, for instance, may be programmed for occupied temperature at 6:00 a.m., but with optimal start, may start at 5:15 a.m. to enable temperature control to be achieved by 6:00 a.m.

P Panel

A term generally used for Tracer 100 Series or Trackers units that are monitored from a central location.

PC (Personal Computer) Workstation

The primary operator interface for the Tracer Summit system. The workstation and the Tracer Summit software serve as a communication link between the operator and the BCUs and other equipment. The workstation provides a graphical interface to system information.

Priority control

The ability to define custom control sequences that respond to alarm conditions. Priority control sequences receive the highest priority; they override all other control sequences.

Programmable control module (PCM)

A Trane-based controller (DDC) that is fully programmable. It controls and monitors a wide range of HVAC and other applications, including airhandling equipment, pumps, cooling towers, boilers, and water chilling units.

Property

One element of an object's characteristic information. This information element can be viewed, referenced, and applied throughout the Tracer Summit system.



R RAM

A type of computer memory located on the BCU logic board that is used to store temporary data such as operator overrides, UCM scan data, and CPL saved values.

Referencer

An edit control in Tracer Summit editors that allows the value of one property to be set equal to the value of another property.

Rover Comm5 service tool

Trane's service tool for Comm5 unit controllers. The Rover software is used to set up and troubleshoot controllers on Comm5 links. Rover is not designed for daily management of building automation systems. With Rover Version 5.0 and Tracer Summit Version 15.0, you can use Rover within Tracer Summit to configure Comm5 controllers locally and remotely.

Rover device plug-in

A software module that Rover uses to interact with a device, such as a Tracer ZN510 zone controller. Each type of controller requires its own software plug-in for Rover. You can download new and revised plug-ins from TraneNet.

RS-232

(see EIA-232)

Runtime view

The presentation of a graphic in Tracer Summit with live, updated data.

S Scan

A connection to designated Tracer 100 panels that retrieves status information, and downloads changes to schedules, holidays, and trends, etc. Like BMN, Tracer Summit can scan Tracer 100 panels as well as BCU sites.

SCC

Space Comfort Controller profile.

Structured Query Language (SQL)

Pronounced either *see-kwell* or as separate letters. SQL is a standardized query language for requesting information from a database. SQL supports distributed databases (databases that are spread out over several computer systems). This enables several users on a network to access the same database simultaneously.



Setpoint

Typically a zone sensor or thermostat (STAT) heat/cool value to be maintained by the system.

Shared event log

An event log database, in SQL format, stored in a SQL server and accessed by multiple Tracer Summit workstations.

Site

A logical grouping of equipment serving a single facility. The customer defines the site as a logical grouping.

Site graphic

A graphic that is available only to a specific site (a custom site graphic).

SMTP

Simple Mail Transfer Protocol. A protocol defined in STD 10, RFC 821, used to transfer electronic mail between computers, usually over Ethernet. It is a server to server protocol, so other protocols are used to access the messages. The SMTP dialog usually happens in the background under the control of the message transport system, e.g. sendmail but it is possible to interact with an SMTP server using telnet to connect to the normal SMTP port, 25.

Source: The Free On-line Dictionary of Computing, $\mbox{\ensuremath{\mathbb C}}$ 1993-2001 Denis Howe

Sorting

To arrange the information alphanumerically in a given column of a table.

Standard screen

The menu-driven screens that allow the user to navigate within the BCU operator display. Depending on the context, a standard screen will have any combination of static text, live text, and/or icons.

Static text

Text that does not come from the Tracer Summit database. The only way to change static text is by using the display setup editor. The title for a custom graphic screen is an example of static text.

Status

An indication of a condition which may or may not be normal. An alarm may be a response to an abnormal status, and may be recorded in an event log.

Syntax

A set of rules for a programming language.



System security

A method of maintaining or restricting access to the building management system. Typically, a four-digit code enables access to override or control the system.

T Target field

A graphic field that launches another graphic from within Tracer Summit (either a Target field, a Target image, or a Target button) or a graphic field that links to a source outside of Tracer Summit (a Target External button).

Target link

A graphic field (a target field, target image, or target button) that is linked to another graphic screen. When the user touches this target link, the screen to which the target is linked displays.

Task

In the Task Manager application, an operation or series of operations that are performed by a workstation. Examples of tasks include automatically initiating communications to a site or performing a backup of a site database.

Template graphic

A graphic that contains at least one field for which the information required to display Tracer Summit data depends on the object for which the graphic is being displayed. All standard graphics are template graphics.

Terminal emulation session

A personal computer with a central processing unit disabled so that the keyboard and the display screen can be used to communicate with and program another device either directly or through a modem connection.

Time of day scheduling (TOD)

The process of assigning the times during the day for defined actions to occur for various components of the building management system. These include typical on or off commands.

Timed override (TOV)

An operator function to override equipment operation from unoccupied control to occupied control.

Touch

The user/operator touches a target on the BCU Operator Display. This is the touch screen equivalent to a keyboard or mouse input at the workstation.



Touch screen

A transparent overlay on an LCD or computer screen that is sensitive to touch by a finger or stylus.

Tracer Graphical Programming (TGP) language

The language that technicians will use to write programs to control the Tracer MP580/581 programmable controller.

Tracer MP580/581 Controller

A multi-purpose programmable controller that offers direct digital control and monitoring of applications through the use of generic inputs and outputs. Often used on air-handlers, pumps, cooling towers, boilers, water chilling units, and non-HVAC applications.

Tracer 100 series panel

The Tracer product line of building management systems. Tracers provide building automation and energy management by monitoring and controlling HVAC equipment, providing the user with management information, and networking with Tracer systems. Panels in this series include the Tracer 100, Tracer 100i, and Tracer chiller plant manager.

Tracer remote

A term generally used for Tracer 100 Series panels (also referred to simply as panel, remote, remote unit, and remote panel, etc.) that are monitored from a central location.

Tracer Summit

Trane's premier building management system that allows facility managers to operate a building in an optimized and efficient manner. Tracer Summit gives the facility operator control of temperature, humidity, scheduling, lighting, energy, and much more. All of these building control capabilities can be programmed and managed as a single system through Tracer Summit.

Tracer VV550 VAV Controller

The Tracer VV550 (factory-installed) and Tracer 551 (field-installed) controllers provide digital control for variable air volume (VAV) boxes and communicate with a Tracer Summit BAS by using Comm5, Trane's implementation of LonTalk[®] communications protocol.

Tracker

The Tracker building automation system is Trane's building management system for small, light commercial buildings. It consists of an operator display on the Tracker controller and a menu-driven interface program in the embedded software.



Trane Data Link (TDL)

A file type used in place of the UDL (Universal Data Link) file type so the user is limited to setting up only the information necessary to run Tracer Summit.

TraneNet

Proprietary internal intranet site for Trane offices.

Trend log

Retains a historical record of values for specified points.

U Unit control module (UCM)

A factory-mounted microelectronic circuit board that is typically used for control of HVAC equipment and linking to an integrated comfort system.

Unit control panel (UCP)

The factory mounted, microprocessor-based unit controller of the Trane CenTraVac chiller for unit process control, load control and equipment safety protection.

Unit-to-unit

The Tracer 100 Series system that has models capable of being configured with a COP Tracer with up to seven slave Tracers connected to it over an 18 AWG twisted, shielded-pair wire LAN. The Tracer Summit system communicates to the slave Tracer 100 through the modem on the COP Tracer.

Universal Data Link (UDL)

A Microsoft database management tool for configuring database connections and security.

Universal programmable control module (UPCM)

Programmable ICS controller that provides direct digital control and monitoring for a wide range of HVAC and other applications.

W Wizard

An application utility that helps you step through a particular task related to the application. For example, the Site Connection Wizard in Tracer Summit leads you through the steps of connecting to various sites using different communication media.

Workstation

Refers to a personal computer, either a laptop or a desktop, that is loaded with the Tracer Summit software and the Setup editor software.



V Variable air volume (VAV)

Air distribution system that varies the volume of air supplied to a system to maintain acceptable space comfort conditions.





Z Zone

The smallest area of control in an HVAC system. It is characterized by having a single thermostat or zone temperature sensor. A room served by a single VAV box is an example of a zone. Several rooms served by the same VAV box also constitute a zone.

Zone control system

System that provides individual temperature control to each area in a building using the same single zone heating/cooling unit.



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