Administrative Service Module (ASM) Data Server Software Operation Guide

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Acknowledgment

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1. Using This Guide

1.1 Overview

1.1.1 Purpose of this Guide

The *Administrative Services Module (ASM) Data Server Software Operations Guide* explains the operation, administration, and maintenance procedures for the Data Server equipped with the *5ESS*® Switch AMADNS Phase 1 interface.

NOTE: This Data Server application is co-resident on the *5ESS*® Switch Administrative Services Module (ASM). This document pertains to the operations performed by the Data Server, not to other applications on the ASM.

1.1.2 Intended Audience

This guide is designed to be used by all Data Server installers, users and administrators, and system administrators.

1.1.3 Prerequisite Knowledge

Although Data Server software is based on the *UNIX*® Operating System, Data Server users and administrators do not need to know *UNIX*® system commands. However, system administrators should have some experience using *UNIX*® Operating System commands.

1.1.4 Latest Issue

The latest version of the *Administrative Services Module (ASM) Data Server Software Operations Guide* is Issue 1.0 (235-200-146).

NOTE: Document 235-200-146 replaces 190-136-166 as it applies to the Data Server's use in the ASM. Document 190-136-166 describes a product no longer owned and managed by Lucent Technologies.

1.1.5 Reason for Reissue

This is the first issue of the document.

1.2 Document Organization

The following describes how this guide is organized:

Chapter 1 □ Using This Guide, describes this document and related documentation.

Chapter 2 □ System Overview, gives an overview of the system.

Chapter 3 □ User Guide, describes how to:

- □ log in and out of the application
- □ use command verbs and objects
- □ use command keys and characters
- □ use the page commands
- □ use the help commands

- exit command levels.

Chapter 4 – System Parameters and Version, describes administrative parameters, how to view and change administrative parameters, and how to display the Data Server product type and software version number.

Chapter 5 – Logins and Passwords, describes how to administer login IDs and passwords.

Chapter 6 – Switch and DPMS Administration, describes how to verify, enter, change, and delete switch and Data Processing and Management System (DPMS) commands.

Chapter 7 – Network Administration, describes how to administer the network address information associated with the switch, Data Server, and DPMS.

Chapter 8 – Data Transmission, describes how to administer the Data Server schedule using the schedule command set, manually transmit primary and/or selected secondar billing files, and write billing files to tape.

Chapter 9 – Alarm and Message Interfaces, describes the Read Only Printer (ROP) and how to test alarms.

Chapter 10 – Reports, Logs, and Audit, describes the:

- Automatic Message Accounting Data Networking System (AMADNS) file naming convention
- AMADNS File Index
- Audit index command
- Billing File Summary Report
- Billing File Report
- Teleprocessing Daily DDI Summary Report
- Teleprocessing DDI Session Summary Report
- Audit Log
- Collection Log
- Command Log
- Error and Event Log
- Disk Clean Up Log
- Tape Log
- Transmission Log
- Procedure to display logs.

Chapter 11 – Output Messages, describes:

- output messages

- how to view output messages
- log file messages
- Command Execution (CMDX) messages
- Component Manager (CMGR) messages
- AMADNS File Manager (DCNI) messages
- Receiver-Initiated DDI (DDS) messages
- Formatter (FMTR) messages
- DDI File Transmission (FX) messages
- Generic Record Identification (GR) messages
- Link Handler (LH) messages
- Library (LIB) messages
- MML Interface (MMLI) messages
- Switch Interface (SI) messages
- System Manager (SYSM) messages
- Tape Processing (TP) messages
- General (UMAT) messages

Chapter 12 User Interface Messages, describes User Interface (UI) messages and additional messages.

Glossary provides definitions of abbreviations and selected terms.

1.3 Documentation

The *Administrative Services Module (ASM) Data Server Software Operations Guide* (235-200-146) is the guide for the Data Server.

Hardware documentation is provided by your hardware vendor.

1.4 Conventions Used

1.4.1 Typography

Three typography conventions used in this document are:

- *italic* type, used to:
  - refer to another document
  - indicate trademarks
  - indicate pathnames
  - indicate optional or variable command parameters

Example

enter logid <*nlid*> <*perm*> <*name*>

- **bold** type, used on input commands

  Example

  Enter **cd /home/user**

- Courier type, used in some examples and screen captures

  Example

  ds5e1A [ACTIVE]> UI053 INFO:
  Idle too long

1.4.2 Trademarks

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2. System Overview

2.1 Overview

2.1.1 Objectives

Upon completion of this chapter, you should be able to:

- describe billing teleprocessing communication
- define the data collection process between the Data Server and the switch
- define data transmission options
- list the Data Server features capabilities
- list types of reports and logs provided by the Data Server.

2.1.2 Chapter Contents

This chapter provides an overview of the:

- billing teleprocessing network
- Data Server and its features
- data collection and data transmission logs.

2.1.3 Network Components

The Data Server is part of a billing teleprocessing network consisting of these three main components:

- generating system (switch)
- Data Server
- DPMS.

2.1.4 Generating Systems

The generating system transmits records to the Data Server across the TCP/IP network. The Data Server is designed to handle multiple generating systems, also referred to as voice switches, data switches, billing sources, billing file sources, network elements, nodes, or switches.

2.1.5 Data Server

The Data Server receives formatted call detail records from the generating system and:

- stores the records as AMADNS format billing files until they are sent to the DPMS
- transmits billing records to the DPMS continuously or when scheduled
- transmits primary and/or secondary billing files on demand

2.1.6 DPMS

The DPMS, also referred to as a billing entity, destination, consumer, client application, host collector, or biller, processes call detail records.

2.1.7 Teleprocessing Network Example

This figure illustrates the components in the billing teleprocessing network that interact with the Data Server.

2.2 Data Collection

2.2.1 Overview

The Data Server receives billing records from a generating system in a continuous stream, minimizing latency.

2.2.2 Successful Collection

Each time the Data Server successfully collects a group of records, an entry is made in the Collection Log. The Data Server operations personnel use this log to review data collection from the switch.

2.2.3 Switch Support

In some installations, the Data Server supports a single switch, and in other installations, the Data Server supports multiple switches. But, for each switch supported, an entry must be made in the Data Server Switch Table.

2.3 Data Transmission

2.3.1 Overview

Data transmission between the Data Server and the DPMS occurs over a TCP/IP network using the Telcordia defined DDI protocol.

The Data Server supports both sender-initiated, also referred to as file deposit or push, and receiver-initiated, also referred to as file retrieval or pull, DDI transmissions.

In sender-initiated DDI, the Data Server is in control of transmission. In receiver-initiated DDI, the DPMS is in control. Normally, a Data Server installation chooses to use either sender or receiver-initiated DDI exclusively, however, both methods are available. The only restriction the Data Server does enforce is that only one primary data transmission or tape writing session be active at a time.

2.3.2 Sender-initiated DDI

For sender-initiated DDI, you may configure the Data Server to transmit primary billing files to the DPMS on a continuous or scheduled basis. However, in abnormal circumstances such as trouble shooting, the Data Server provides commands to:

- write primary and/or selected secondary data to tape, if your system is equipped with an optional tape output
- manually send primary and/or secondary data to the DPMS

2.3.3 Receiver-initiated DDI

The Data Server always responds to a receiver-initiated transmission request. The type of billing data transmitted to the DPMS can be primary, secondary, or both. The DDI administrative parameter, ddi_secondary, on the Data Server determines the type.

2.3.4 DDI Parameter

The Data Server stores the DDI parameter values in the administrative database and the DPMS Table. The same parameter values are used for both sender-initiated and receiver-initiated DDI.

2.3.5 Primary and Secondary Data

An AMADNS file is primary until the Data Server sends the file to the DPMS or to an optional tape and a file confirmation message is sent back to the Data Server. The Data Server then marks the AMADNS file secondary.

2.3.6 Successful Transmissions

Each time a file is successfully transmitted, the Data Server makes an entry in the Transmission Log. The Data Server operations personnel use this log to review transmissions to the DPMS.

2.3.7 Tape Output (Optional)

Upon the request of the operator, the Data Server writes primary and/or secondary billing data files to an industry-standard tape, and an entry is created in the Tape Log. The Data Server operations personnel use this log to review the tape content.

2.4 Data Collection and Transmission

2.4.1 Overview

This figure illustrates data collection and transmission in the billing teleprocessing network.

2.5 System States

2.5.1 Over View

For a single system simplex operation, the Data Server system is either in the active or stopped mode.

2.5.2 Active

An active Data Server receives usage records from the generating system, accumulates the records into AMADNS files, and transmits the files to the DPMS.

2.5.3 Stopped

A stopped Data Server accumulates data from the generating system and resumes processing when it becomes active again.

2.5.4 ASM Interface

The ASM implements the commands to stop and start the Data Server application.

2.6 Features

2.6.1 Overview

The Data Server has several key capabilities:

- scheduled or continuous transmission of data
- transmission of primary and/or secondary billing data on demand
- event message/alarm interface
- multi-switch operation security features
- flexible user interface through prompted entry or command line
- status reports and logs

2.6.2 Event Message/Alarm Interface

For this Data Server application, specific event messages and alarms are forwarded to the *5ESS*® Switch ROP.

2.6.3 Security Features

The security features for the Data Server are:

- login IDs and passwords
- three levels of security for system access to restrict the set of commands available to each user
- automatic password aging
- automatic disabling of login IDs not used for a period of three months
- automatic inactivity time-outs for users logged onto the system without activity for a specified length of time
- log of user activity to track all operations performed on the system by each user.

2.6.4 Multi-Switch Operation

You may connect up to 16 separate generating systems to the Data Server. This figure shows a multi-switch arrangement.

2.6.5 Flexible User Interface

The Data Server user interface has a flexible prompted or command line input mode, as well as an on-line help feature.

2.6.6 Status Reports

The Data Server provides status reports and logs to help you monitor your system. These reports and logs are generated on demand and then displayed on the terminal screen. Reports may also be sent to an optional printer.

2.6.7 Log and Report Types

This table describes the type of reports and logs provided by the Data Server.

Report/Log Name	Description
Billing File Summary Report	You can view and/or print statistics for the billing data that is currently stored on your system for this report
Billing File Report	You can view records that are stored on disk based upon a beginning and ending file sequence number from this report. For each requested file, the report displays the name of the file and the file state, and then lists all field names and their values for each call record.
Teleprocessing DDI Session Summary Report	You can view and/or print DDI statistics for the billing data that is currently stored on your system from this report.
Teleprocessing Daily DDI Summary Report	You can view and/or print DDI statistics for either the current day or the previous day from this report. Audit Log This log displays the results of an AMADNS Index audit. The AMADNS index tracks all AMADNS files on the system.
Collection Log	This log tracks the time and date that billing records are

	received at the Data Server, and the time and date the Data Server creates the primary files from the billing records received.
Command Log	This log tracks user activity on the system.
Disk Clean-Up Log	This log tracks the removal of old secondary files.
Error and Event Log	This log tracks all system events, errors, and alarms.
Tape Log	This log tracks primary and secondary billing files written to tape.
Transmission Log	This log tracks the transmission of billing files to the DPMS.

2.7 Data Retention and Storage

2.7.1 Data Retention

The Data Server system retains billing records based on the number of files your system processes in a day and the size of your system disk.

2.7.2 Disk Space Recommendation

The recommended billing file retention time is three to five days.

This table provides examples of the billing data retention times for a nine or eighteen gigabyte disk based on the number of files generated each day.

Number of Records Each Day @ 200 Bytes for Each Record (9 Gigabyte Disk)	**Number of Days of Storage for AMA Data**
8 million	5 days
8-10 million	4 days
10-13 million	3 days
13-20 million	2 days
20-40 million	1 day
40 million	Less than 1 day
Number of Records Each Day @ 200 Bytes for Each Record (18 Gigabyte Disk)	**Number of Days of Storage for AMA Data**
16 million	5 days
16-20 million	4 days
20-26 million	3 days
26-40 million	2 days
40-80 million	1 day
80 million	Less than 1 day

2.8 System Description Review

(1) Describe the communication and operations between the generating switch, Data Server, and the Data Processing and Management System.

The switch generates call detail records and transmits the records to the Data Server across a TCP/IP network. The Data Server receives call detail records from the switch, formats the records as AMADNS billing files, stores, and then transmits the billing records to the DPMS. The DPMS is any system that processes call detail records.

(2) Define primary and secondary data files.

Primary data files at the Data Server are primary until the file has been successfully sent to the DPMS or a tape is written. The Data Server marks the primary files as secondary and moves the files to a secondary file directory.

(3) List options available to the application administrator for data transmission downstream.

Have formatted primary data files continuously sent to the DPMS. Schedule primary data to transmit automatically to the DPMS. Write the primary data to tape, if your system is equipped with tape output. Manually send secondary data to the DPMS.

(4) What do you use to monitor the Data Server operations?

Status reports and logs.

(5) List the Data Server feature capabilities.

Scheduled or continuous transmission of data
Event message/alarm interface
Multi-switch operation Security features
Flexible user interface through prompted entry or command line Status reports and logs
Demand transmission of primary and/or selected secondary billing data

(6) List the features used by the Data Server that provide security for the application.

Login IDs and passwords that are required for system access
Three levels of security for system access to restrict the set of commands available to each user
Automatic disabling of login IDs not used for a period of 3 months
Automatic inactivity time-outs for users logged onto the system without activity for a specified length of time
Automatic password aging
Log of user activity to track all operations performed on the system by each user

3. User Guide

3.1 Overview

3.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list and define the user permissions
- demonstrate how to log in and out of the Data Server
- use prompting and command line entry to execute the input commands
- use the verb and object tables to learn command structure

3.1.2 Chapter Contents

This chapter describes user permission levels and how to:

- log in and out of the application
- use command keys and characters
- use command verbs and objects
- use the page commands
- use the help commands
- exit command levels

3.2 User Permission Levels

3.2.1 User Levels

The three levels of user permissions on the Data Server are:

- user
- application administrator
- system administrator

Different commands are available to each user permission level.

NOTE: The Data Server is based on the *UNIX*® Operating System environments and uses standard *UNIX*® Operating System logins.

3.2.2 User

The user permission level can only perform commands that do not affect the Data Server configuration, administration, or service. These commands are verify, print and display, with the exception of displaying the Command log.

3.2.3 Application Administrator

The application administrator can use all Data Server application commands.

3.2.4 System Administrator

The system administrator can use all commands outside the Data Server user interface in the *UNIX*® Operating System shell. The system administrator uses the root login ID.

3.3 How to Log In

3.3.1 Procedure

Use this procedure to log into the Data Server.

Step	Prompt	Action
1	login:	Type your login ID and press Enter.
2	Password:	Type your password and press Enter.
3	The Data Server displays: □ system name □ date and time of current login □ system prompt and operation mode	You are now ready to use the system. ***NOTE:*** If you do not use the system within a designated period of time, a warning is displayed and the system logs you out.

3.3.2 Example

This is an example of a system login which shows:

- The system name as ds5e1A
- The login ID as umatadm
- The password prompt but not the actual password

3.3.3 Password Aging

If you do not log into the Data Server application within a three-month period, your login ID and password are disabled. To restore a login ID that has been disabled, the application administrator must delete the old login ID and add a new one.

3.3.4 Password Aging Exceptions

The three login IDs that are never disabled are:

- root
- umatadm
- umatsup

3.4 How to Log Off

3.4.1 Overview

There are two procedures you can use to log off the Data Server.

3.4.2 Procedure - Option 1

Use this procedure to log off of the Data Server.

Step	Action
1	Type **exit** and press Enter.

3.4.3 Procedure - Option 2

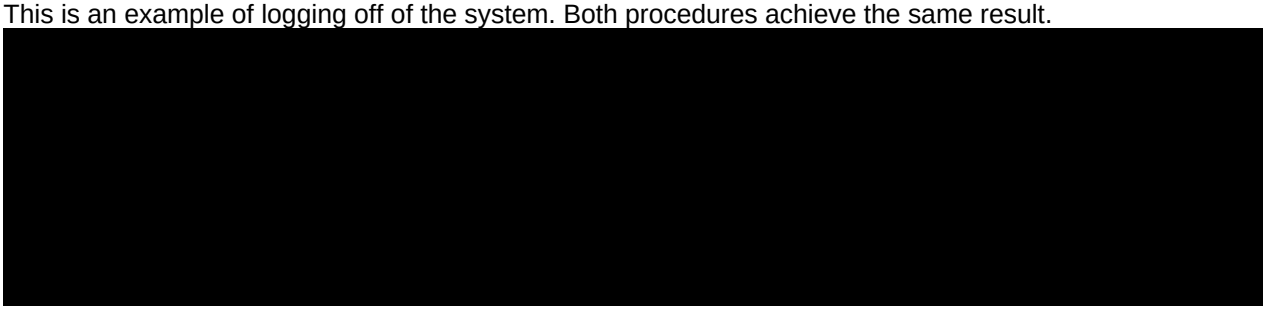
Use this procedure to log off of the Data Server.

Step	Action

1	Press **Ctrl** and the letter **d**.

3.4.4 Example

This is an example of logging off of the system. Both procedures achieve the same result.



3.5 Input Commands

3.5.1 Overview

Type a command to check or modify the Data Server system. Input commands display information, modify system parameters, help you perform administrative tasks, and exit the system. Data Server input commands can be entered in the command line mode or the prompting mode.

3.5.2 Command Structures

With a few exceptions, each command consists of a verb and object pair. The object is sometimes followed by a parameter list. The verb, object, and optional parameter list form the input command which you would type at the system prompt if you are using the command line mode.

Example

In this example, test is the verb, alarm is the object, and maj is the parameter.

test alarm maj

3.5.3 Command Structures Format

The Data Server accepts commands in two formats:

- Spaces to separate the verb, object, and parameter list

  Example

  test alarm maj

- Hyphens, colons, and semicolons as separators

  Example

  test-alarm:maj;

NOTE:

- The system also accepts a command that uses any combination of spaces, hyphens, colons, and semicolons as separators.
- All commands must be entered in lowercase letters.

3.6 Prompting Mode

3.6.1 Overview

If you are not familiar with the parameters for a command, you can use prompting mode. In the prompting mode, the system asks you to enter the information that it needs to complete the command. The system continues to prompt you for information until it has enough information to perform the command or until you press the Delete key.

3.6.2 How to Use

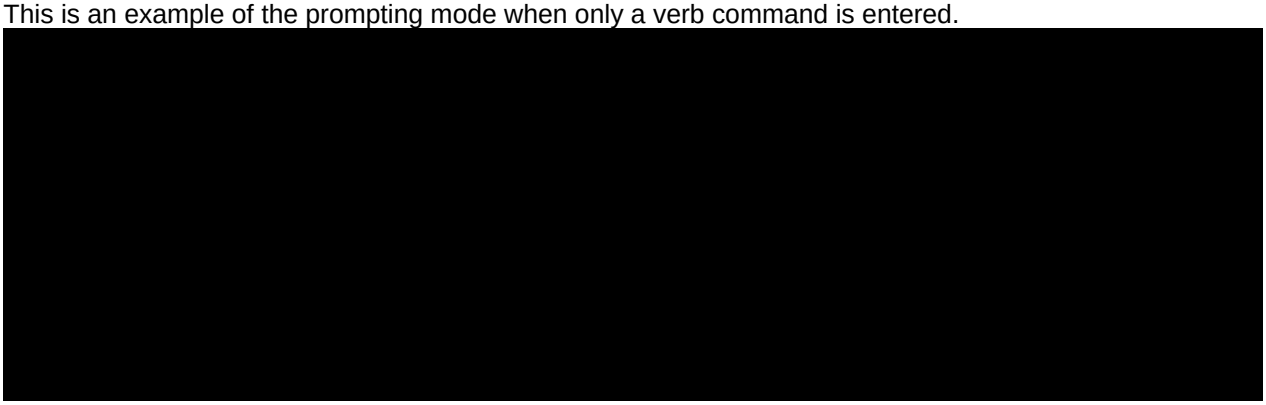
To use prompting mode, enter a verb that requires an object or enter a verb-object pair that requires at least one parameter on the command line. The system prompts you to enter a value for each parameter.

3.6.3 Prompting

When the system prompts for information, the parameter options are shown in brackets. The default value, if one exists, is in parentheses preceded by a plus sign. To select the default, enter a plus sign or press Enter.

3.6.4 Example

This is an example of the prompting mode when only a verb command is entered.



3.6.5 Prompts in Command Line Mode

The system also operates in prompting mode if it cannot fully evaluate and perform a command that you have entered in command line mode. Therefore, if you are familiar with some parameters, but need to be prompted for others, enter the verb, object, and the parameters you know on the command line and the system prompts you for the rest of the information.

3.6.6 To End Prompting Mode

To end prompting mode and return to the system prompt, press the Delete key.

3.7 Command Line Mode

3.7.1 Overview

You can enter commands in command line mode when you are familiar with the command and its parameters. In this mode, you provide at least the minimum required information for the system to evaluate and perform the command.

3.7.2 Command Line Format

In command line mode, you enter the verb, object, and the complete parameter list at the system prompt. The system uses default values for information that you do not specify. In command line mode, parameter values can be entered in one of two ways:

- position defined parameter entry
- named parameter entry

3.7.3 Position Defined Parameter Entry

Each parameter is defined by its position in the command line. You would enter the values for each parameter on the command line in a specific order.

Example

3.7.4 Named Parameter Entry

Named parameter entry is where parameters are preceded by the parameter name and may be entered in any order. You would enter the name of the parameter followed by an equal sign (=) and its value on the command line.

Example

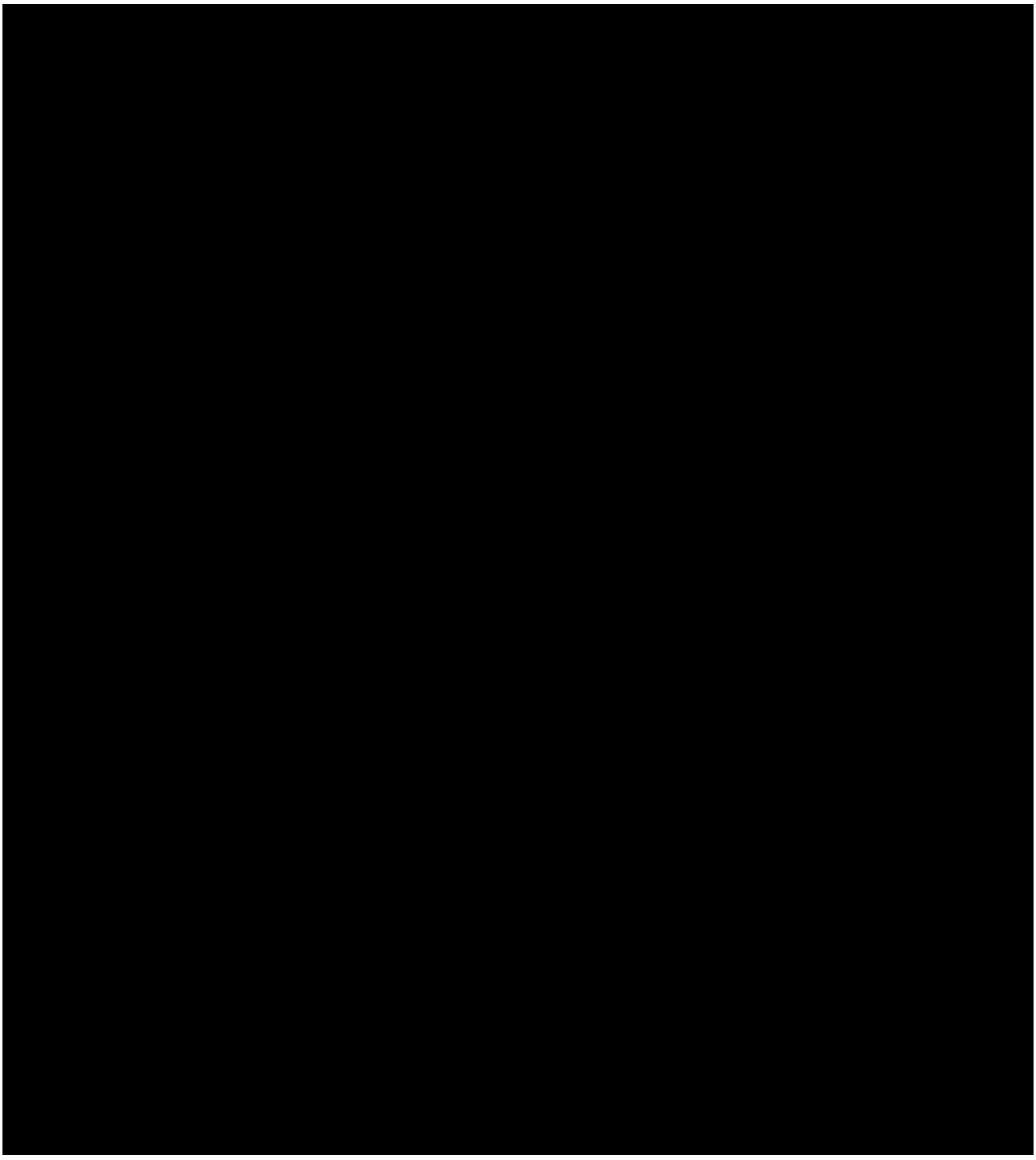
3.7.5 Command Line Required Parameters

If you specify values on the command line for all of the required parameters, the system performs the command. If a required parameter is not specified on the command line, the system prompts you to enter values for the required parameters.

3.8 Command Modes

This figure summarizes how to enter commands using the Data Server's command modes.

See Section 3.16 , "How to Exit Command Levels" to determine how to exit a specific command operation. Two examples of how to exit a specific command operation are marked with an asterisk and dashed arrows in this figure.



3.9 Command Verbs

This table summarizes all the Data Server command verbs and objects sorted alphabetically by verb. The table also gives a brief description of each command and the chapter where each is explained in depth.

Verb	Object	Definition	Chapter Title Reference
audit	index	Run an audit of the AMADNS Index. This index tracks all AMADNS files on the system.	Chapter 10 , Reports, Logs, and Audit
change	admnparm	Modify administrative parameters.	Chapter 4 , System Parameters and Version
	net	Change the network address.	Chapter 7 , Network Administration

	passwd	Change password used to login.	Chapter 5 , Logins and Passwords
	schedule	Modify an entry in the schedule table.	Chapter 8 , Data Transmission
	switch	Modify an entry in the switch table.	Chapter 6 , Switch and DPMS Administration
clear	The clear verb is not used for this Data Server application. It is contained in the command set for backward compatibility.		
delete	dpms	Delete an entry from the DPMS table.	Chapter 6 , Switch and DPMS Administration
	logid	Remove a login account from the system.	Chapter 5 , Logins and Passwords
	net	Delete network address information for a host that must communicate with network server(s) over a LAN.	Chapter 7 , Network Administration
	schedule	Remove an entry from the schedule table.	Chapter 8 , Data Transmission
	switch	Remove an entry from the switch table.	Chapter 6 , Switch and DPMS Administration
disable	The disable verb is not used for this Data Server application. It is contained in the command set for backward compatibility.		
display	bfs	Display the Billing File Status report.	Chapter 10 , Reports, Logs, and Audit
	billfile	Display the contents of billing files.	
	log	Display alarm and informational messages logged by the system.	
	logid	Display login IDs that are currently active on the system.	Chapter 5 , Logins and Passwords
	tpsess	Display the Teleprocessing DDI Session Summary report.	Chapter 10 , Reports, Logs, and Audit
	tpsum	Display the Teleprocessing Daily DDI Summary report.	
enable	The disable verb is not used for this Data Server application. It is contained in the command set for backward compatibility.		
enter	dpms	Add an entry to the DPMS table.	Chapter 6 , Switch and DPMS Administration
	logid	Create a new login ID on the system.	Chapter 5 , Logins and Passwords
	net	Enter network address information for a host that must communicate with the Data Server(s) over a LAN.	Chapter 7 , Network Administration
	schedule	Add an entry to the schedule table.	Chapter 8 , Data Transmission
	switch	Add an entry to the switch table.	Chapter 6 , Switch and DPMS Administration
exit		Allows you to exit from the Data Server.	Chapter 3 , User Guide
help		Display information about verbs, objects, or parameters that are available for you to use.	
init	The init verb is not used for this Data Server application. It is contained in the command set for backward compatibility.		
print	bfs	Print the Billing File Summary report.	Chapter 10 , Reports, Logs, and Audit
	tpsess	Print the Teleprocessing DDI Session Summary report.	
	tpsum	Print the Teleprocessing Daily DDI Summary report.	
rop	tpsum	Display the Teleprocessing Daily DDI Summary Report on the ROP.	
set start stop	The set, start, and stop verbs are not used for this Data Server application. They are contained in the command set for backward compatibility.		
tape	primary	Write primary billing files to tape.	Chapter 8 , Data Transmission
	secondary	Write secondary billing files to tape.	
test	alarm	Send a test alarm.	Chapter 9 , Alarm and Message Interfaces
verify	admnparm	View current values for administrative parameters.	Chapter 4 , System Parameters and Version
	dpms	View the contents of the DPMS table. You may view a single entry or the entire table.	Chapter 6 , Switch and DPMS Administration
	logid	View login IDs that are currently set up on the	Chapter 5 , Logins and

		system.	Passwords
	net	Display network address information for all hosts, one specific host, or one specific network address.	Chapter 7 , Network Administration
	schedule	Verify the contents of the schedule table. Either a single entry or the entire table may be verified.	Chapter 8 , Data Transmission
	switch	Verify the contents of the switch table. You may view a single entry or the entire table.	Chapter 6 , Switch and DPMS Administration
	version	Verify the Data Server product type and software version number.	Chapter 4 , System Parameters and Version
xmit	primary	Transmit primary billing files.	Chapter 8 , Data Transmission
	secondary	Transmit secondary billing files.	

3.10 Command Objects

This table summarizes all the Data Server command verbs and objects sorted alphabetically by object. The table also gives a brief description of each command and the chapter where each is explained in depth.

Object	Verb	Description	Chapter Title Reference
admnparm	change	Modify administrative parameters.	Chapter 4 , System Parameters and Version
	verify	View current values for administrative parameters.	
alarm	test	Send a test alarm.	Chapter 9 , Alarm and Message Interfaces
bfs	display	Display the Billing File Summary report.	Chapter 10 , Reports, Logs, and Audit
	print	Print the Billing File Summary report.	
billfile	print	Print the contents of billing files.	
dpms	delete	Delete an entry from the DPMS table.	Chapter 6 , Switch and DPMS Administration
	verify	View the contents of the DPMS table. You may view a single entry or the entire table.	
	enter	Add an entry to the DPMS table.	
index	audit	Run an audit of the AMADNS Index. This index tracks all AMADNS files on the system.	Chapter 10 , Reports, Logs, and Audit
log	display	Display alarm and informational messages logged by the system.	Chapter 5 , Logins and Passwords
logid	delete	Remove a login account from the system.	
	display	Display login IDs that are currently active on the system.	
	enter	Create a new login ID on the system.	
	verify	View login IDs that are currently set up on the system.	
net	delete	Delete network address information for a host that must communicate with the network server(s) over a LAN.	Chapter 7 , Network Administration
	enter	Enter network address information for a host that must communicate with the Data Server(s) over a LAN.	
	verify	Display network address information for all hosts, one specific host, or one specific network address.	
	change	Modify an entry in the network table.	
passwd	change	Change password used to login.	Chapter 5 , Logins and Passwords
primary	tape	Write primary billing files to a tape device.	Chapter 8 , Data Transmission
	xmit	Transmit primary billing files.	
schedule	change	Modify an entry in the schedule table.	Chapter 8 , Data Transmission
	delete	Remove an entry from the schedule table.	
	enter	Add an entry to the schedule table.	
	verify	Verify the contents of the schedule table. Either a single entry or the entire table may be verified.	
secondary	tape	Write selected secondary billing files to a tape device.	Chapter 8 , Data Transmission
	xmit	Transmit selected secondary billing files.	
switch	change	Modify an entry in the switch table.	Chapter 6 , Switch and DPMS Administration
	delete	Remove an entry from the switch table.	
	enter	Add an entry to the switch table.	

	verify	Verify the contents of the switch table. Either a single entry or the entire table may be verified.	
tape	write	Prompt for writing primary data files to tape.	Chapter 8 , Data Transmission
tpsess	display	Display the Teleprocessing DDI Session Summary report.	Chapter 10 Reports, Logs, and Audit
	print	Print the Teleprocessing DDI Session Summary report.	
tpsum	display	Display the Teleprocessing Daily DDI Summary report.	
	print	Print the Teleprocessing Daily DDI Summary report.	
	rop	Display the Teleprocessing Daily DDI Summary Report on the Receive Only Printer (ROP).	
version	verify	Verify the Data Server product type and software version number.	Chapter 4 , System Parameters and Version
Operation Commands Which Do Not Have Objects			
	exit	Allows you to exit from the Data Server.	Chapter 3 , User Guide
	help	Displays information about verbs, objects, or parameters that are available for you to use.	
	start	The start and stop verbs are not used for this Data Server application. They are contained in the command set for backward compatibility.	
	stop		

3.11 Command Verb Abbreviations

3.11.1 Verb Abbreviations

It is always correct to enter the complete name for the verb in an input command. As a shortcut, there are some verbs that may be abbreviated. The abbreviations may be used anywhere that the complete verb name is listed.

This table provides verb abbreviations.

Verb	Abbreviation(s)
change	chg
delete	del dlt
clear	cl
display	di
enter	ent
init	init
start	sta
test	tst
verify	ver vfy

3.12 Help Commands

3.12.1 Overview

The Data Server supplies on-line help information. The on-line help information is a list of verbs, objects, or parameters that are available for you to enter.

NOTE: For verbs that have no objects and verb-object pairs that have no parameters, a description of the command is displayed.

3.12.2 How to Access Help

You can access on-line help in both of these ways:

- Enter a single question mark (?) for brief help.
- Enter the help command or double question marks (??) for detailed help.

3.12.3 Help with Verb-Object Pairs

For help with a verb or verb-object pair, enter one of these commands:

- The verb or verb-object pair with a single question mark (?).

  Example

  display ?

- The verb or verb-object pair with double question marks (??).

  Examples

  chg ??

  change admnparm ??

- The help command, followed by the verb or verb-object pair.

  Example

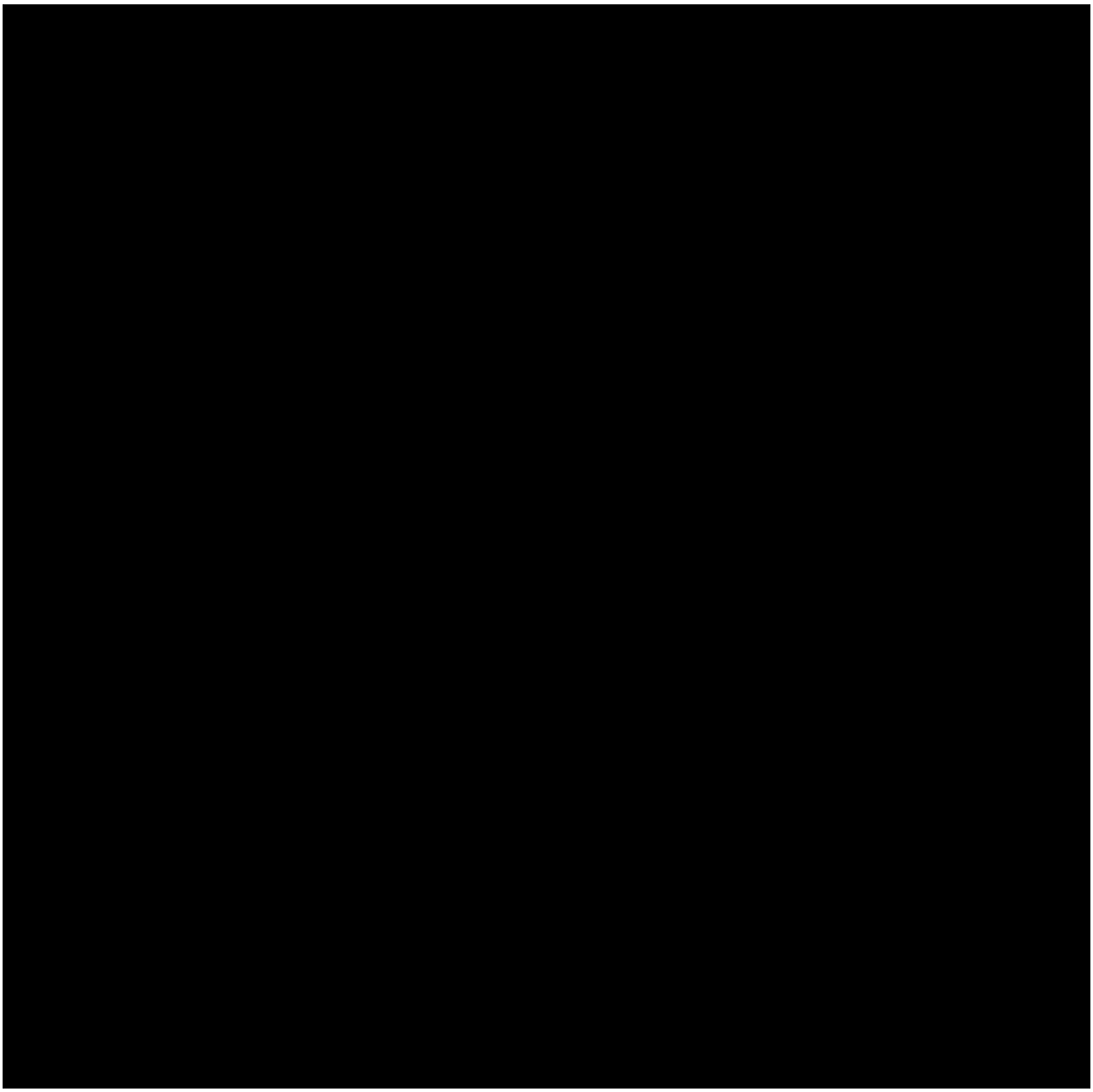
  help verify

3.12.4 Examples

This is an example of a brief on-line help message.

This is an example of a detailed on-line help message for verbs.

This is an example of a detailed on-line help message for a verb and an object.



3.13 Special Command Keys and Characters

3.13.1 Overview

In addition to spaces, hyphens, colons, commas, and semicolons, there are other special command keys and characters that you may use when you enter input commands.

This table describes the special keys and characters.

NOTE: Some of the special characters are only used when you are in certain command modes.

Function	Command Key or Character
General	
Back up and erase to correct a character while you are entering a command.	Backspace key or Ctrl key and h
Stop a command or command loop. Can also be used to quit a long report.	Delete key

Include all entries of the preceding object.	all (keyword)
Delete a parameter value. Can only be used with parameters that are optional.	none (keyword)
Enclose values that contain a special character, for example, blank spaces.	" " (double quotation marks)
Command Line Mode	
Display brief help information.	? (single question mark)
Display detailed help information.	?? (double question marks) or type help
Separate the verb and object in an input command. ***NOTE:*** When using a blank space as a separator, the system ignores any extra blank spaces.	Space bar or - (hyphen)
Separate the verb-object pair from the parameter list.	Space key or : (colon)
Separate one parameter from another.	Space key or , (comma)
Separate the parameter name and the parameter value.	= (equal sign)
Select the default value when entering command with position-defined parameter entry. With parameter-named entry, defaults do not have to be specified.	+ (plus sign)
Indicate that you have finished entering a command and the system should now perform the command.	Enter or a semicolon and Enter
Prompting Mode	
Enter a value when in prompting mode.	Enter
Select the default value when in prompting mode.	Enter or the plus sign and Enter
Select the default values for all following parameters when in prompting mode.	Two plus signs followed by Enter

3.14 Command Responses

If you receive no error messages and the system prompt returns, the command has been performed successfully.

The system may output a response after you enter a command to inform you of a potential problem, an error, or an unusual state.

This table describes the key phrases generated by the system in response to certain commands.

Key Phrase	Description
Command failed	The input command you entered was not performed. The system provides you with a reason for the command failure.
Info	This type of response gives you additional information about the command.
Input error	You may receive an INPUT ERROR response when you are entering a command in command line mode or information in prompting mode. If the entry is incorrect, you receive instructions to help you reenter the information.
Warning	Responses prefixed with WARNING caution you about a particular command entry.

3.15 How to Use Page Commands

3.15.1 Overview

When information is too long to fit on a terminal screen or window, the Data Server automatically allows you to use page (pg) commands. The page command is incorporated into the Data Server. The page command allows you to:

- display multiple screens of information on your terminal one screen at a time
- back up and review items that have already passed
- do searches by specifying a string

Reference

See the *UNIX*® manual pages for additional information on the pg command.

3.15.2 To End Page Command

To end the page command and return to either the system prompt or prompting mode, enter **q**.

3.15.3 Page Commands

Use these command keys to view information with the page command.

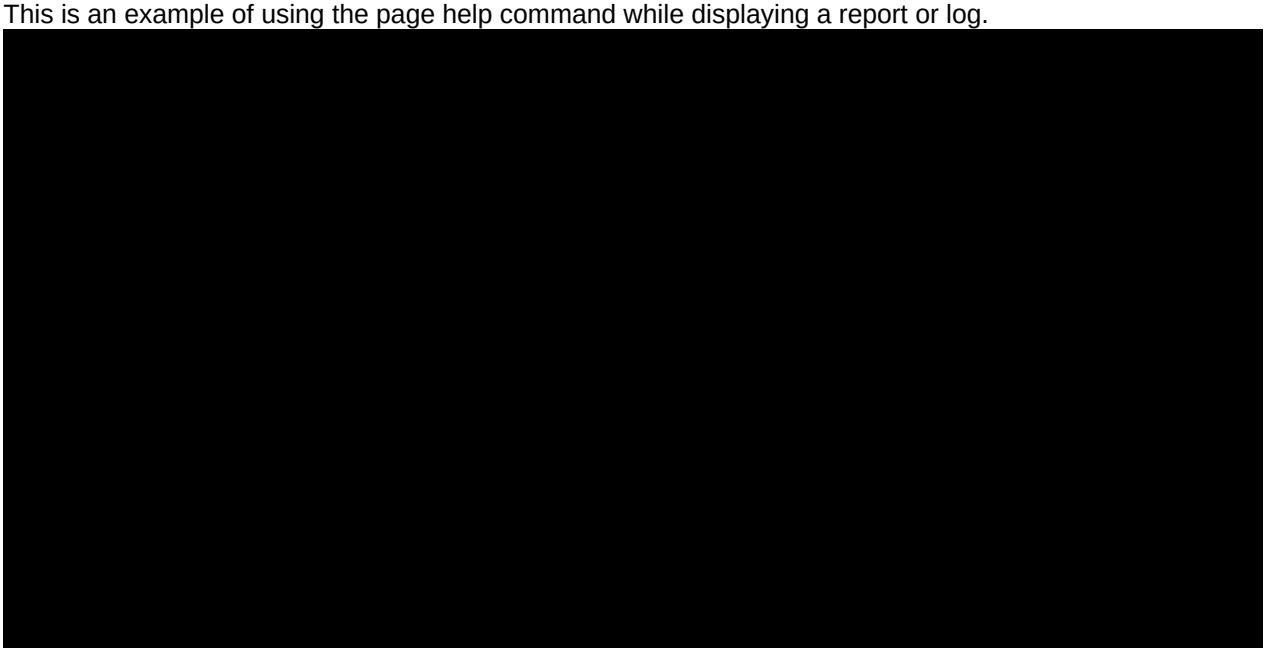
NOTE: Most commands can be preceded by a number.

Step	Action
If you want to...	**THEN enter or press...**
view help by displaying an abbreviated summary of available commands	**h**
quit	**q** or **Q**
move down one page	Enter
display half a page more	**d** or Ctrl key and **D**
skip page forward	**f**
go to next file	**n**
go to next page	Enter
go to page 1	**1** and Enter
go to previous file	**p**
go to previous page	**-** and Enter
save current file in savefile	**s savefile**
view next line or number of lines	**l** (letter l) ***NOTE:*** Replace l with the actual number of lines desired or use the +/- *n* l. Examples □ -10 and Enter goes back ten pages. □ +10l goes forward 10 lines. □ 1 and Enter goes to the first page. □ +5 and Enter goes forward 5 pages.
redisplay the current page	**.** or Ctrl key and **L**
display last page	**$** ***NOTE:*** □ If the record file is larger than 30,000 records or 20 megabytes of data, the Data Server truncates the file. □ If the file size is close to maximum, using this command could take some time to complete.
set window size and display next file	**w** or **z**
search forward for a word or group of characters	*/pattern* ***NOTE:*** □ Replace *pattern* with the item for which you want to search. □ To continue looking for the same pattern,

	enter **/** to go forward and **?** or **^** to go backward.
search backward for a word or group of characters	^*pattern*^ or ?*pattern*? ***NOTE:*** □ Replace *pattern* with the item for which you want to search. □ To continue looking for the same pattern, enter **/** to go forward and **?** or **^** to go backward.

3.15.4 Example

This is an example of using the page help command while displaying a report or log.



3.16 How to Exit Command Levels

3.16.1 Overview

There are three layered commands that may need to be used to exit from the Data Server depending on the command operation being performed.

3.16.2 Procedure

Use this procedure to exit from a command operation and the Data Server.

NOTE: These steps must be performed in the order listed.

Step	Action	
1	**IF you want to exit from the...**	**THEN...**
	page command as in a report, log, help, or after using the display command or verify command	type **q** **System Response** You are returned to the prompting mode.

	prompting mode	press Delete. **System Response** You are returned to the system prompt. ***NOTE:*** If you are using a personal computer (PC) as a system terminal, you may have to define the Delete key in the PC software.
	system	type **exit** or press **Ctrl d**. **System Response** You are logged off the system.

3.17 User Guide Review

(1) List the three user permissions of the Data Server.

Application administrator
System administrator
User

(2) Define the user permission levels.

Application administrator - Can use commands that affect the Data Server operation, such as the start and stop commands.

System administrator - All commands are performed outside the Data Server user interface in the *UNIX*® Operating System shell.

User - Commands that do not affect the Data Server configuration, administration, or service can be performed. Users at this level can use report and test commands.

(3) Describe the procedure to log on and off of the Data Server.

Enter your login ID and press the Return key. Enter you password and press the Return key. System displays various messages and the System prompt. (You are ready to work.)

(4) List the 2 methods of executing input commands.

Prompting Mode

Command Line Mode (position defined or named parameter)

(5) Using the Command Verb Table, what objects can you use with the delete verb?

dpms--logid--net--schedule--switch

(6) Using the Command Object Table, list the various verbs used with the bfs object.

display--print

(7) What would you use to display valid verbs?

? or ?? at the System prompt

(8) How do you log off the system and exit the command or report mode?

System -- exit or Control d

Command mode -- the letter q

Prompting mode -- press the delete key

4. System Parameters and Version

4.1 Overview

4.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the administrative parameters
- demonstrate the ability to verify administrative parameters
- demonstrate the ability to display the Data Server product type and software version

4.1.2 Chapter Contents

This chapter describes:

- the Data Server administrative parameters
- how to view and change administrative parameters
- how to display the Data Server product type and software version number

4.2 Administrative Parameters

4.2.1 Overview

Administrative parameters provide basic information about the way your Data Server system is configured. The parameter values are stored in the Data Server administrative database and can be viewed by using the verify admnparm command or can be changed by using the change admnparm command. The system parameter categories are:

- Data Server
- Generic Alarm Interfaces
- AMADNS
- DDI

4.2.2 Key and Optional Values

For the admnparm command set, some parameter values are optional and some are key values that cannot be deleted from the administrative database. The none keyword can be used with the change admnparm command to remove an optional parameter value from the database.

4.2.3 Login Permissions

You must log in as the application administrator in order to execute the change admparm command. The verify admnparm may be used by any login ID.

4.2.4 Before You Begin

The Data Server must be in the active mode.

4.2.5 Requirement

All parameters must have a valid value, with the exceptions of:

- ROP device name
- ROP speed
- ROP parity
- tape device

4.3 Administrative Parameters Example

This is an example of the Data Server parameters using the verify admnparm ++ command.

4.4 Administrative Parameters Variables

This table describes the parameters and parameter values associated with the admnparm commands.

Parameter	Description	Value
Data Server Parameters		
Operating Configuration <*operconfig*>	Specifies whether the Data Server is operating in a simplex or duplex configuration.	Display only with a value of 1 or 2 ***NOTE:*** □ A value of 1 specifies a simplex configuration. □ A value of 2 specifies a duplex configuration.
Minor AMA Threshold <*amamin*>	Specifies at what percentage full of primary billing data disk storage a minor alarm is generated.	50-100 **Default** 70
Major AMA Threshold <*amamaj*>	Specifies at what percentage full of primary billing data disk storage a major alarm is generated. **Requirement** The value of amamaj must be greater than the value for amamin.	50-100 **Default** 85
Critical AMA Threshold <*amacrit*>	Specifies at what percentage full of primary billing data disk storage a critical alarm is generated. **Requirement** The value of amacrit must be greater than the value for amamaj.	50-100 **Default** 95
User Inactivity time-out <usrtimeout>	Specifies the length of time a user may be logged into the system without activity. **System Response** Once the specified length of time passes with no activity, the system displays this warning: dgsA [ACTIVE]? UI053 INFO: Idle too long. You have 60 seconds after the warning is displayed to enter input. If you do not enter anything, you are logged off automatically. This message is then displayed: dgsA [ACTIVE]? UI033 INPUT ERROR: Idle too long, logged out.	120-3600 seconds **Default** 900
Login Password aging <*pswdage*>	Specifies the number of days a password may be used before the system requires you to change it.	15-120 days **Default**

		30 days
Generic Alarm Interface Parameters		
ROP Device Name <*rop_device*> ROP Speed <*rop_speed*> ROP Parity <*rop_parity*>	The generic alarm interface parameters are not used for this Data Server application. They are contained in the command set for backward compatibility.	
AMADNS Parameters		
Data Server ID <*DS_src_id*>	Identifies the name of the Data Server record source. ***NOTE:*** This value along with the following three (Data Server type, DPMS ID, and DPMS type), determine the billing file name. Refer to Chapter 10 .	0001-4095 **Reference** See the Bellcore document TR-NWT-001100 for valid source identification names.
Data Server type <*DS_src_type*>	Specifies the type of the Data Server record source.	01-15 valid record source type
DPMS ID <*DPMS_dest_id*>	Specifies the ID of the destination DPMS.	0001-4095 valid DPMS name **Reference** See the Bellcore document TR-NWT-001100 for valid DPMS names.
DPMS type <*DPMS_dest_type*>	Specifies the type of destination DPMS.	01-15 valid DPMS type
Maximum time to hold records <*bill_latency*>	Identifies the maximum time in minutes or seconds a new billing file is allowed to accumulate records before the file is closed. ***NOTE:*** There are three administrative parameters that effect the closing of a file. The one that is actually used is the one which is met first. The three administrative parameters are: □ bill_latency □ bill_size □ max_dcni_recs.	Latency in minutes or seconds **Default** minutes ***NOTE:*** □ The range for minutes is 1-1200. □ The range for seconds is 15-120. **Requirement** If you want the bill lantency in seconds, the number must be followed by the letter s. For example, 15 seconds would be entered as 15s.
Maximum file size in bytes <*bill_size*>	Identifies the maximum size of the billing file in bytes. ***NOTE:*** There are three administrative parameters that effect the closing of a file. The one that is actually used is the one which is met first. The three administrative parameters are: □ bill_latency □ bill_size	Maximum size in bytes Range 100K - 10Mb ***NOTE:*** The maximum file size cannot exceed the value specified for the ulimit option in the *UNIX*® operating system. For example, if ulimit = 2Mb, the maximum size file is 2Mb, not 10Mb.

	□ max_dcni_recs.	
Maximum file size in records <*max_dcni_recs*>	Identifies the maximum number of records allowed for each AMADNS output file. ***NOTE:*** There are three administrative parameters that effect the closing of a file. The one that is actually used is the one which is met first. The three administrative parameters are: □ bill_latency □ bill_size □ max_dcni_recs.	Maximum number of records ***NOTE:*** The minimum number of records is 1000.
Billing file priority <*priority*>	Specifies the priority level of the file. ***NOTE:*** Priority affects file naming only. It is the fifth and last field in an AMADNS file name. Refer to Chapter 10 for file naming conventions.	1-4 ***NOTE:*** The highest priority is 4. **Default** 2
Billing record suppression <*suppression*>	Specifies the type of suppression.	Display only with a value of 0-2 **Default** 1 ***NOTE:*** □ No suppression equals 0. □ Use 1 for two field suppression which suppresses the recording office type and ID. □ Use 2 for four field suppression which suppresses the recording office type, recording office ID, sensor type, and sensor ID.
Method of Time Stamping Billing Files <*timestamp_method*>	Specifies the method for setting the timestamp in the header of AMADNS file.	s (Standard) or t (Temporary) ***NOTE:*** □ Use s to set the

		creation time to when the file is complete and ready for transfer. In this case the modification time is the same as the creation time for a primary file, and shows the time transitioned to secondary in a secondary file. □ Use t to set the creation time to when the file is first opened for the accumulation of records. The modification time indicates when the file was completed.
DDI Parameters		
Login at DPMS <*ddi_login*>	Specifies the login name on the DPMS for transfer of files by FTP. ***NOTE:*** For secure FTP, this login is not included in the */etc/password* file.	Valid login name on DPMS ***NOTE:*** DDI transmission is disabled if a value is not specified.
Password at DPMS <*ddi_password*>	Specifies the password used to log into the DPMS FTP server. ***NOTE:*** For secure FTP, this password is not included in the */etc/password* file.	Alpha-numeric 6 character password on DPMS ***NOTE:*** DDI transmission is disabled if a value is not specified.
Send files continuously <*ddi_continuous*>	Specifies whether the transmission to DPMS is continuous. ***NOTE:*** If the transmission is not set to continuous, then transmission occurs only by schedule.	y or n □ If y, files are transmitted to the DPMS as soon as available. □ If n, file transmission must be scheduled, using the use enter schedule command. ***NOTE:*** If this parameter is set to yes for continuous, it overrides any of the schedule commands.
Use passive FTP <*ddi_passive*>	The Data Server initiates all data transmission sessions and sets up the communication link. This parameter determines whether the data channel link is set up by the Data Server or the DPMS. ***NOTE:*** □ If the data channel	y or n **Default** n ***NOTE:*** □ Use y if the FTP transfer is passive.

	link is controlled by the DPMS, the session is considered standard FTP transfer and active. □ If the data transmission link is controlled by the Data Server, the session is considered passive. □ This parameter is designed to handle customer firewalls.	□ Use n for standard FTP transfer.
Use TCP port number <*ddi_ftp_port*>	Specifies the FTP port number on DPMS used for the transfer of files. ***NOTE:*** This is not a physical port.	0 or 1024-65535 ***NOTE:*** □ 0 disables receiver initiated DDI. □ This port number must match the port number used on the DPMS.
UNIX® path to tape drive <*tape_device*>	Specifies the special character file used to write to a physical tape.	Valid file name or none **Example** /dev/rmt/0
Rename file at end of transmission <*chgDPMSfile*>	Specifies whether temporary files are used on the DPMS to store data while it is being transferred. ***NOTE:*** Some DPMS require that a temporary file name, such as tmp.rao_id, be used while transferring an AMADNS file from the Data Server to DPMS. This parameter is used to rename the temporary file after transmission has completed. This is a way for the DPMS to detect that the file transfer is complete.	y or n ***NOTE:*** □ Use y if a temporary file is to be used. □ Use n if a temporary file is not to be used.
Secondary/Primary file retrieval options <*ddi_secondary*>	Specifies whether the Data Server allows the DPMS to request secondary and/or primary files. ***NOTE:*** This parameter applies to receiver-initiated DDI.	p, s, or b ***NOTE:*** □ Use s if the Data Server allows the DPMS to request

		secondary files. This parameter is typically used in conjunction with the sender-initiated configuration. □ Use p if the Data Server allows the DPMS to request primary files. □ Use b to allow requests for both primary and secondary files.
Expect rename request <*ddi_rcv_rename*>	Specifies whether the Data Server expects to receive a rename command from the DPMS after a RETR command has been performed. ***NOTE:*** This parameter applies to receiver-initiated DDI.	y or n ***NOTE:*** □ Use y if the rename command is expected prior to committing the file to secondary on the Data Server. □ Use n if the Data Server does not expect a rename command.

4.5 How to View Administrative Parameters

4.5.1 Procedure

Use prompted entry or this procedure to view the Data Server administrative parameters.

Step	Action	
1	**IF you want to view ...**	**THEN type ...**
	all parameters	**verify admnparm ++** and press Enter. **System Response** Current values in the administrative database are displayed.
	a specific value	**verify admnparm <*parameter name*>** and press Enter.

NOTE: If the information displayed by this command is too long to fit on one screen, the system automatically starts the page command. For on-line help for the page command, type the letter h. Enter the letter q to exit the page command.

4.6 How to Change Administrative Parameters

4.6.1 Example

This is an example of the Data Server parameters using the prompted change admnparm command.

4.6.2 Procedure

Use this procedure to change Data Server administrative parameters.

Step	Action	
1	**IF you ...**	**THEN type ...**
	know the parameter and value you want to change	**change admnparm <*parameter name*>= <*new value*>** and press Enter. **System Response** The current value in the administrative database is changed. **Recommendation** Use the verify admnparm command to verify that the change has been made.
	want to use prompted entry	**change admnparm**, press Enter, enter the name of the parameter you want to change after the system displays the list of possible parameters, and follow the prompts for the parameter you entered.

4.7 System Version

4.7.1 Overview

The verify version command allows you display the Data Server product type and software version number.

4.7.2 Example

This is an example of using the verify version command.

4.7.3 Login Permissions

The verify version command may be used by any login ID.

4.7.4 Before You Begin

The Data Server must be in the active mode.

4.7.5 Procedure

Use this procedure to display the Data Server product type and software version number.

Step	Action
1	Type **verify version** and press Enter.

4.8 System Parameters and Version Review

(1) List the types of administrative parameters.

Data Server Generic Alarm Interfaces Automatic Message Accounting Data Networking System (AMADNS)

Data Server/Data Processing and Management System Systems Interface (DPMS)

(2) What command string is used to display all the Administrative parameters?

verify admnparm ++

(3) Using the Administrative Parameters Variables table, define these parameters:

amamin - Specifies a percentage full of billing data on disk before triggering a minor alarm.

amama - Specifies a percentage full of billing data on disk before triggering a major alarm.

amacrit - Specifies a percentage full of billing data on disk before triggering a critical alarm.

(4) Define bill_latency.

Identifies the max time (min) between the open & close of a billing file.

(5) What Administrative parameter controls the number of minutes that a login ID can be logged in but not active?

usrtimeout

(6) What are the results of the verify version command?

This command allows you to display the Data Server product type and software version number.

(7) What would you type to obtain on-line help in the page command mode?

The letter h

(8) What would you type to exit the page command mode?

The letter q

5. Logins and Passwords

5.1 Overview

5.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the logid command set
- list parameters associated with the logid command set
- demonstrate the use of the login ID Administration commands

5.1.2 Chapter Contents

This chapter describes how to administer login IDs and passwords.

5.2 Login ID Administration

5.2.1 Overview

In order to access the Data Server system, you must have a login ID and password. Your Data Server system is installed with the application administrator login ID of umatadm. Using the application administrator login and the logid command set, you can add, delete, and change login IDs for each person who needs to access the Data Server. The logid command set includes:

- enter logid
- delete logid
- verify logid
- display logid

NOTE: These commands only apply to users of the Data Server application. They do not affect other ASM logins.

5.2.2 Login Permissions

The display logid and verify logid may be used by any login ID. The enter logid and delete logid commands may only be used by the application administrator.

5.2.3 Before You Begin

The Data Server must be in the active mode.

5.2.4 Related Commands

The logid command set is related to the passwd command set and two system parameters. The two system parameters are:

- user inactivity timeout (admnparm usrtimeout)
- login password aging (admnparm pswdage)

5.3 Login ID Parameters

This table describes the parameters associated with the logid command set.

Parameter	Description	Value
New Login ID <*nlid*>	Specifies the new login ID. ***NOTE:*** This field is only valid with the enter logid command.	1-7 alphabetic characters ***NOTE:*** □ Blank spaces and quotation marks are not allowed in the login ID. □ Each ID must be unique.
Login ID <*logid*>	Specifies the login ID to be deleted, viewed, or displayed. ***NOTE:*** This field is only valid with the delete logid command.	Existing login ID
Permissions <*perm*>	Specifies permissions for the new login ID.	usr or adm □ The Data Server users can view information and request logs and reports. They cannot execute any commands that affect the system configuration, administration, or service. □ Application administrators are allowed to use all commands.
Name <*name*>	Contains a comment about the login ID, normally the name of the user.	Up to 20 alphanumeric characters (optional) ***NOTE:*** □ If there are blank spaces or special characters in the name, the name must be enclosed in quotation marks (" ") when you enter it in the command. □ Quotation marks cannot be embedded within the name/comment.

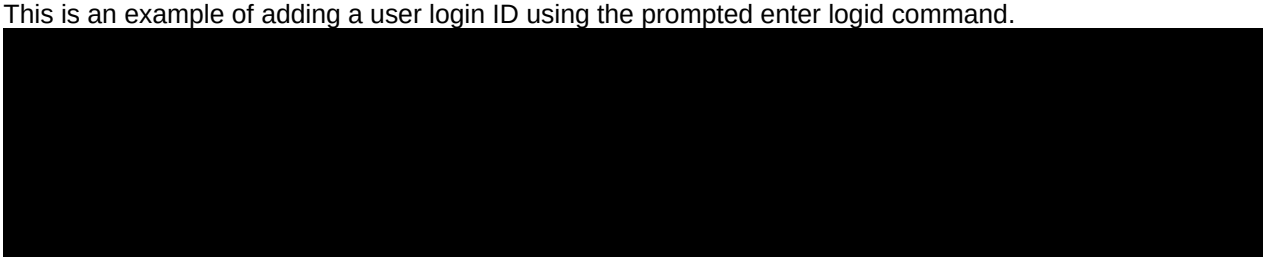
5.4 How to Use the Enter Logid Command

5.4.1 Overview

The enter logid command creates a new user login ID. With this command, you enter the new login ID, the permissions for the new login ID, and an optional comment usually listing the person's name. The permissions determine which commands the person with the login ID can use. The system also prompts you to establish a password for the new user.

5.4.2 Example

This is an example of adding a user login ID using the prompted enter logid command.



5.4.3 Procedure

Use prompted entry or this procedure to add a new user login ID.

Step	Action
1	Type **enter logid <*nlid*> <*perm*> <*name*>** and press Enter. **System Response** The system prompts you to use chg-passwd to set password.

5.5 How to Use the Delete Logid Command

5.5.1 Overview

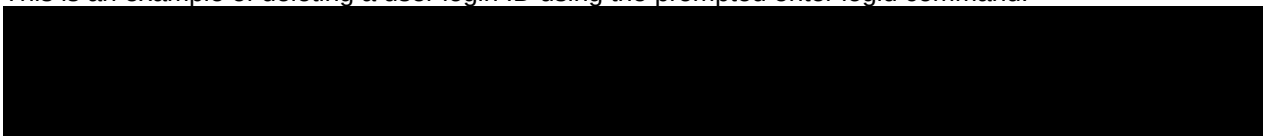
The delete logid command removes a user login ID from the Data Server. The only login IDs that cannot be deleted are root, umatadm, and umatsup.

5.5.2 Restoring Disabled Login IDs

The system automatically disables login IDs that are not used for a period of three months. Once the login ID is disabled, it cannot be used to access the system. To restore a disabled login ID, first use the delete logid command to remove the disabled login account from the system. Then use the enter logid command to add the login ID to the system again.

5.5.3 Example

This is an example of deleting a user login ID using the prompted enter logid command.



5.5.4 Procedure

Use prompted entry or this procedure to delete a user login ID.

Step	Action
1	Type **delete logid <*logid*>** and press Enter.

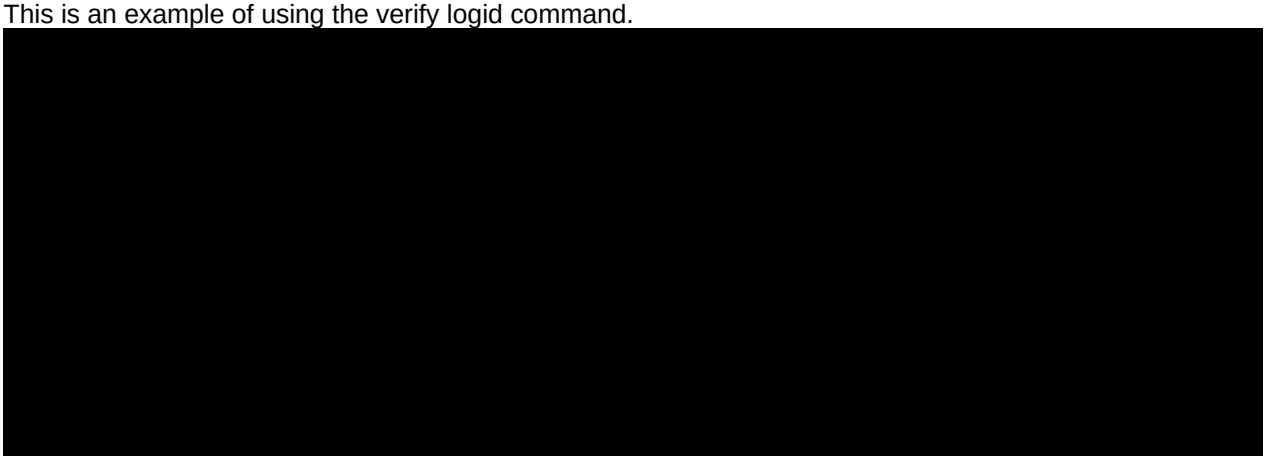
5.6 How to Use the Verify Logid Command

5.6.1 Description

The verify logid command displays a report of the login IDs that have been created on your Data Server system.

5.6.2 Example

This is an example of using the verify logid command.



5.6.3 Table

This table describes the fields on the Data Server Login Identifications report.

Field	Description
Login ID	Identifies the *UNIX*® system login ID.
Permission	Identifies the permissions for the login ID. This tells you whether the login has Data Server user permissions (usr) or application administrator permissions (adm).
Name	Identifies the user's name or other comment associated with the login ID. ***NOTE:*** This field is optional.

5.6.4 Procedure

Use this procedure to verify a user login ID.

Step	Action
1	Type **verify logid** and press Enter.

5.7 How to Use the Display Logid Command

5.7.1 Description

The display logid command allows you to display a report of the login IDs that are currently active on the system.

5.7.2 Example

This is an example of the display logid command.

5.7.3 Table

This table describes the fields in the Active Data Server Logins report.

Field	Description
Login ID	Identifies the login ID of anyone logged into the system.
Permission	Identifies the permissions for the login ID. This tells you whether the login has Data Server user permissions (usr) or application administrator permissions (adm).
System	Identifies the name of the system the user is logged into.
Login time	Specifies the date and time that the user logged into the system.

5.7.4 Procedure

Use this procedure to display the Active Data Server Logins report.

Step	Action
1	Type display logid and press Enter.

5.8 How to Specify Login Time-Outs

5.8.1 Overview

You can specify the length of time a user may be logged onto the system without activity. The usrtimeout parameter in the change admnparm command set controls this time period.

5.8.2 Procedure

Use this procedure to change the value for the usrtimeout parameter.

Step	Action
1	Type **chg admnparm usrtimeout** at the system prompt and press Enter.
2	Type a value that is within the limit of possible values and press Enter. ***NOTE:*** Possible values are 120 to 3600 seconds. The default is 900 seconds. **System Response** The system issues a warning to a user who is logged in with no activity for the time period you specified once the parameter is set. The user has 60 seconds after the warning displays to enter input. If the user does not respond, the system automatically logs the user off. **Example** ds5e1A[ACTIVE]> UI053 INFO: Idle too long. ds5e1A[ACTIVE]> UI033 INPUT ERROR: Idle too long, logged out.

5.9 Password Administration

5.9.1 Overview

Application administrators and Data Server users can change their own passwords by using the change passwd command. The application administrator may also change other user passwords by entering the login ID as the command parameter.

5.9.2 Passwords Requirements

All passwords must meet these requirements:

- Each password must have at least six characters. The system only uses the first eight characters.

- Each password must have at least two alphabetic characters and at least one number or special character (such as !, @, #, $,%). In this case, alphabetic refers to all uppercase and lowercase letters.
- Each password must differ from the login ID and should not be a rearrangement of the characters in that login ID. For comparison purposes, an uppercase letter is equivalent to the corresponding lowercase letter.
- New passwords must differ from the old password by at least three characters. For comparison purposes, an uppercase letter is equivalent to the corresponding lowercase letter.

5.9.3 Related Commands

The passwd command set is related to the logid command set and to two system parameters. The two system parameters are:

- User inactivity timeout (admnparm usrtimeout)
- Login password aging (admnparm pswdage).

5.9.4 Table

This table describes the parameter associated with the change passwd command.

Parameter	Description	Value
Change Password for Login ID <*logid*>	Specifies the login ID for which you want to update the password.	Valid login ID **Default** Your own login ID

5.9.5 Example

This is an example of changing a password for another user using the prompted change passwd command.

5.10 How to Change Your Password

5.10.1 Procedure

Use this procedure to change your own password.

Step	Action
1	Type **change passwd** at the system prompt and press Enter. **System Response** The system prompts you to type the current password.
2	Type your current password at the system prompt and press Enter.

	NOTE: The password is not displayed on the screen as you type it. **System Response** The system prompts you to type a new password once the current password is confirmed.
3	Type your new password at the system prompt and press Enter. **System Response** The system prompts you to type your new password a second time so the system can verify that it was typed correctly.
4	Type your password the second time at the system prompt and press Enter.

5.11 How to Change the Password for Another User

5.11.1 Procedure

Use this procedure to change a password for another user.

Step	Action
1	Type **change passwd <*logid*>** and press Enter.
2	Type the new password at the system prompt and press Enter. ***NOTE:*** The Data Server does not display the password on the screen.
3	Type the new password the second time at the system prompt and press Enter.

5.12 How to Administer Password Aging

5.12.1 Overview

For security, the Data Server system uses automatic password aging. With password aging, your password expires after a specified number of days. When this happens, the next time you login, the system automatically prompts you to enter a new password. The period of time before the password expires is defined with the pswdage parameter in the change admnparm command set. The default value for pswdage is 30 days.

5.12.2 Example

This is an example of changing the value for password aging using the prompted change admnparm command.

5.12.3 Procedure

Use prompted entry or this procedure to display and/or change the password aging value for your system.

Step	Action	
1	**IF you want to ...**	**THEN type ...**
	display the current value for password aging	**verify admnparm pswdage** at the system prompt and press Enter. **System Response**

		The system displays the current value.
	change the current value for password aging	**change admnparm pswdage= <*new_value*>** at the system prompt and press Enter.

5.13 Logins and Passwords Review

(1) List the logid command set.

enter logid delete logid verify logid display logid

(2) What login permission do you need when you use the logid commands?

Application administrator login - umatadm

(3) Match the logid parameter in the left column with its parameter description in the right column.

C	nlid	A	Contains a comment about the login ID.
D	perm	B	Specifies the login ID to delete, view, or display.
B	logid	C	Specifies the new login ID.
A	name	D	Specifies the permissions for the new login ID.

(4) State the use of these commands:

enter logid - Creates a new user login ID.

delete logid - Removes a user ID from the Data Server.

verify logid - Displays a list of the login IDs that have been created.

display logid - Displays the login IDs that are currently active on the system

(5) What command string is used to specify that a user may be logged into the system for 600 minutes without activity?

chg admnparm usrtimeout= 600

(6) Define password aging.

For security, the Data Server system uses automatic password aging. The password expires after a specified number of days.

(7) What command string would you use to allow passwords to be good for 60 days?

chg admnparm pswdage=60

6. Switch and DPMS Administration

6.1 Overview

6.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the switch commands which allow you to maintain the Data Server Switch table
- list parameters associated with the switch command set
- demonstrate the use of the switch commands
- list the dpms commands which allow you to maintain the DPMS table
- list parameters associated with the dpms command set
- demonstrate the use of the dpms commands

6.1.2 Chapter Contents

This chapter describes how to verify, enter, change, and delete switch and DPMS table numbers.

6.2 Switch Commands

6.2.1 Overview

In order to identify the type of generating systems/switches associated with the Data Server, you must administer the Data Server Switch table. The Data Server automatically assigns a switch number to the Data Server Switch table when you use the enter switch command. The switch number is then the key used to determine the various switch connections, to determine the switch type, and to associate the data coming in with the switch that produced it. The Data Server allows a maximum of 24 switch connections.

Four switch commands allow you to maintain the Data Server Switch table. These are:

- verify switch
- enter switch
- change switch
- delete switch.

There must be one switch table entry for the host *5ESS*® and one for each DRM.

6.2.2 Requirement

Switches must be defined in the ASM node table before defining them in the Data Server Switch table.

6.2.3 Login Permissions

The verify switch command may be used by any login ID. All other switch commands may only be used by the application administrator.

6.2.4 Before You Begin

The Data Server must be in the active mode.

6.3 Switch Parameters

This table describes the parameters associated with the switch command set.

Parameters	Description	Value
Switch number <*switch_no*>	Identifies the unique number associated with switch.	1-16 ***NOTE:*** This number is automatically created by the Data Server using the enter switch command.
Sensor Type <*GS_src_type*>	Identifies the switch type.	001- 999 ***NOTE:*** □ No blanks or quotation marks are allowed in the name. □ Use 01 for the AMADNS generating system. **Reference** See the Bellcore document TR-NWT-001100 for listings of valid source types.
Sensor ID <*GS_src_id*>	Specifies the sensor ID associated with the Data Server. ***NOTE:*** The sensor ID is assigned by the operating company, and each switch table entry must have a unique sensor ID.	000001-999999
Connection ID <*connection_id*>	Identifies the network host name for the switch.	Up to an 80 character name ***NOTE:*** □ Name must be unique to the system. □ No blanks or quotation marks are allowed in the name. This is the site name defined on the ASM Node Table for the 5E host or DRM (see Section 3.7 of the *ASM User's Guide*, 235-200-145).

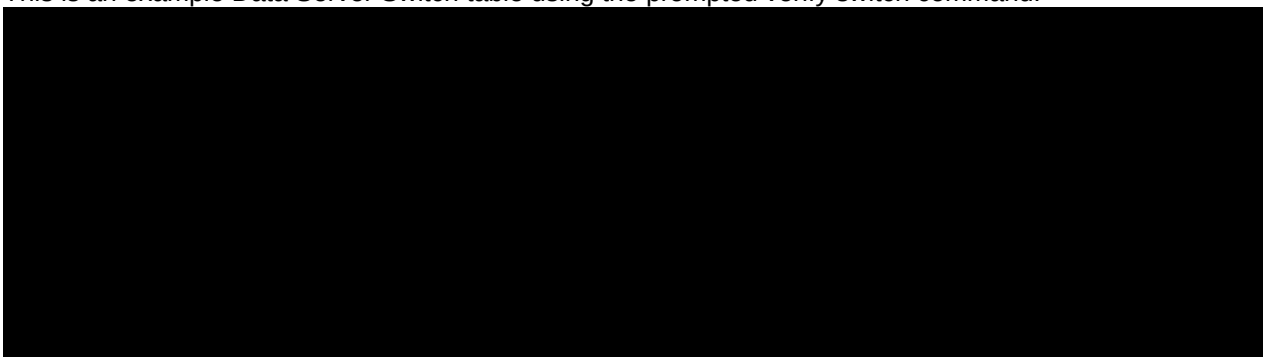
6.4 How to Use the Verify Switch Command

6.4.1 Overview

The verify switch command allows you to display switch information stored in the Data Server Switch table.

6.4.2 Example

This is an example Data Server Switch table using the prompted verify switch command.



6.4.3 Procedure

Use prompted entry or this procedure to display the Data Server Switch table.

Step	Action	
1	**IF you want to display a ...**	**THEN type ...**
	list of all switches	**verify switch ++** and press Enter.
	specific switch	**verify switch <*switch_no*>** and press Enter.

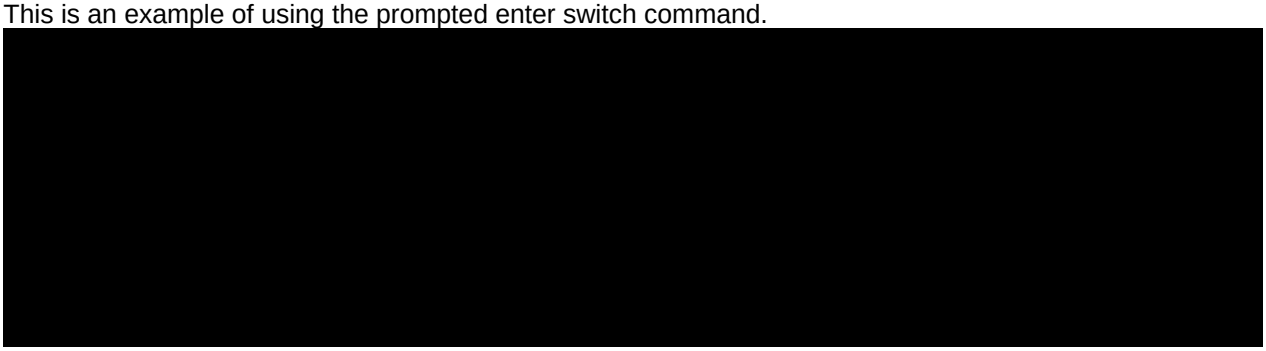
6.5 How to Use the Enter Switch Command

6.5.1 Overview

The enter switch command allows you to add switch information to the Data Server Switch table.

6.5.2 Example

This is an example of using the prompted enter switch command.



6.5.3 Procedure

Use prompted entry or this procedure to add a new switch.

Requirement

The name must be configured as outlined in the ASM as a switch node (host *5ESS*® or DRM).

Step	Action
1	Type **enter switch <*GS_src_type*> <*GS _src_id*> <*connection_id*>** and press Enter.

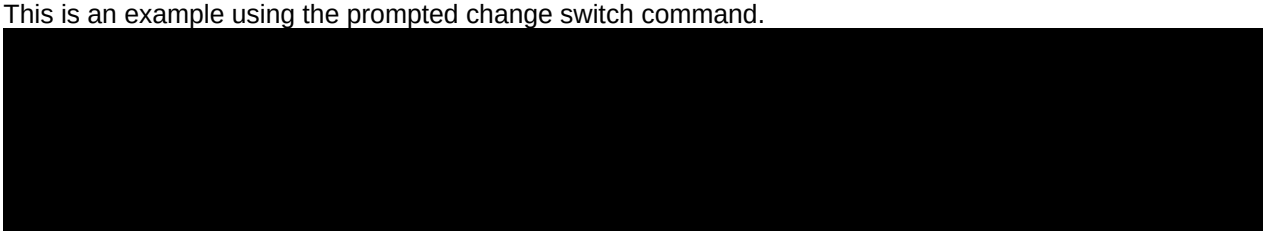
6.6 How to Use the Change Switch Command

6.6.1 Overview

The change switch command allows you to modify switch information. You can modify the individual database parameters for source type, source ID, and connection ID.

6.6.2 Example

This is an example using the prompted change switch command.



6.6.3 Procedure

Use prompted entry or this procedure to change the value for the database parameters.

Step	Action	
1	**IF you want to change ...**	**THEN type ...**
	sensor type	**change switch <*switch_no*> <*GS_src_type*>=<*value*>** and press Enter.
	sensor ID	**change switch <*switch_no*> <*GS_src_id*>=<*value*>** and press Enter.
	connection ID	**change switch <*switch_no*> <*connection_id*>=<*value*>** and press Enter.

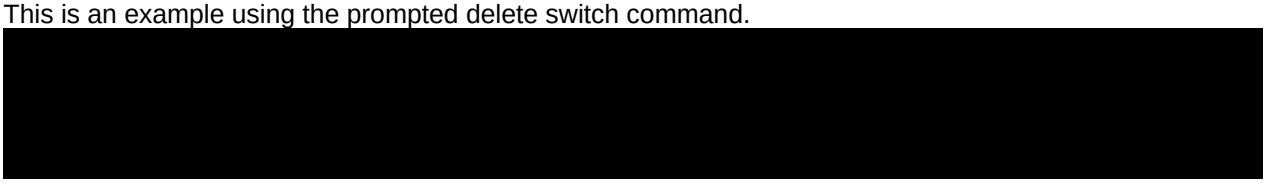
6.7 How to Use the Delete Switch Command

6.7.1 Overview

The delete switch command allows you to delete a switch.

6.7.2 Example

This is an example using the prompted delete switch command.



6.7.3 Procedure

Use prompted entry or this procedure to delete a switch.

Step	Action
1	Type **delete switch <*switch_no*>** and press Enter.

6.8 DPMS Commands

6.8.1 Overview

In order to identify the DPMS associated with the Data Server, you must administer the Data Server DPMS table.

The Data Server automatically assigns a DPMS number to the Data Server DPMS table when you use the enter dpms command. The dpms number is then the key used to verify or delete a specific DPMS.

Three dpms commands allow you to maintain the Data Server DPMS table. These are:

- verify dpms
- enter dpms
- delete dpms.

6.8.2 Requirement

There must always be at least one defined DPMS table entry for data transmission to occur.

6.8.3 Transmission to the DPMS

The Data Server transmits files to the first available DMPS beginning at DPMS1. As long as DPMS1 is available, files are not transmitted to DPMS2, DPMS3, or DPMS4.

6.8.4 Login Permissions

The verify dpms command may be used by any login ID. All other dpms commands may only be used by the application administrator.

6.8.5 Before You Begin

The Data Server must be in the active mode.

6.9 DPMS Parameters

This table describes the parameters associated with the dpms command set.

Parameters	Description	Value
DPMS ID for entry *<dpms_id>*	Identifies the unique name associated with the DPMS.	1 to 80 characters ***NOTE:*** This is the full-path to the DPMS system.
DPMS number *<dpms_no>*	Identifies the unique number associated with the DPMS.	1-4 ***NOTE:*** This number is automatically created by the Data Server using the enter dpms command.

6.10 How to Use the Verify DPMS Command

6.10.1 Overview

The verify dpms command allows you to display dpms information stored in the Data Server DPMS table.

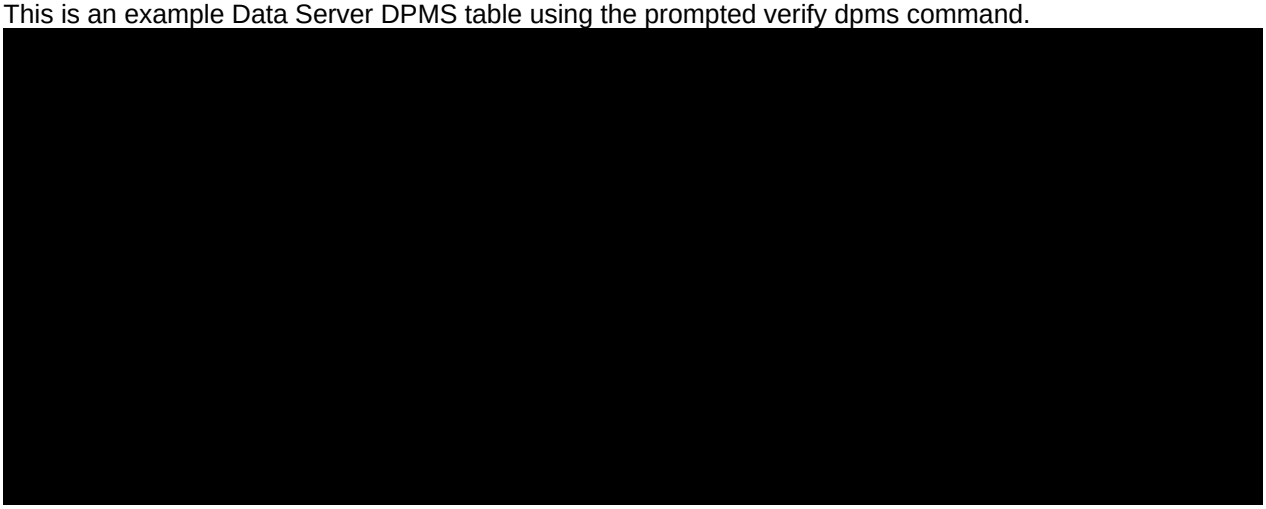
6.10.2 Procedure

Use prompted entry or this procedure to display the Data Server DPMS table.

Step	Action	
1	**IF you want to display a ...**	**THEN type ...**
	list of all DPMSs	**verify dpms ++** and press Enter.
	specific DPMS	**verify dpms <*dpms_id*>** and press Enter.

6.10.3 Example

This is an example Data Server DPMS table using the prompted verify dpms command.



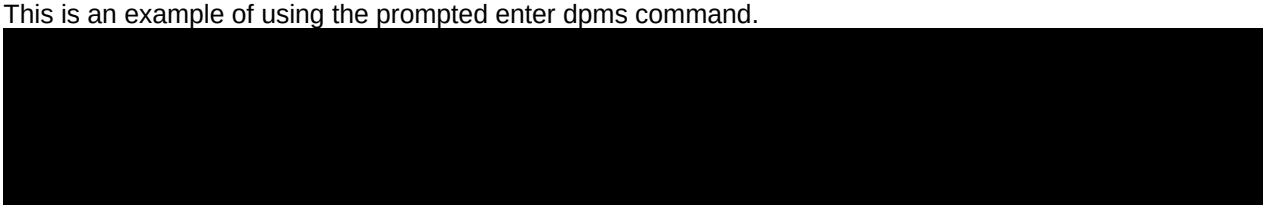
6.11 How to Use the Enter DPMS Command

6.11.1 Overview

The enter dpms command allows you to add DPMS information to the Data Server DPMS table.

6.11.2 Example

This is an example of using the prompted enter dpms command.



6.11.3 Procedure

Use prompted entry or this procedure to add a new DPMS.

Requirement

The name must exist in the /etc/hosts file before the Data Server allows you to add it to the Data Server DPMS table. The name is entered in the /etc/hosts file using the enter net command.

Reference

See Section 7.5 , "How to Use the Enter Net Command".

Step	Action
1	Type **enter dpms <*dpms_id*>** and press Enter.

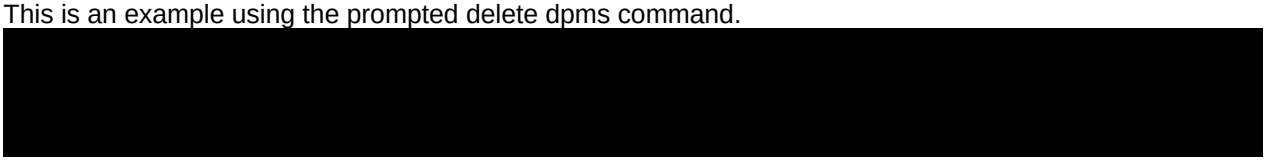
6.12 How to Use the Delete DPMS Command

6.12.1 Overview

The delete dpms command allows you to delete a DPMS.

6.12.2 Example

This is an example using the prompted delete dpms command.



6.12.3 Procedure

Use prompted entry or this procedure to delete a DPMS.

Step	Action
1	Type **delete dpms <*dpms_id*>** and press Enter.

6.13 Switch and DPMS Administration Review

(1) List the commands that allow you to maintain the Data Server Switch table.

verify switch
enter switch
change switch
delete switch

(2) List the parameters associated with the switch command set.

switch_no - Identifies the unique number associated with the switch.

connection_id - Identifies the network host name for the switch.

GS_src_type - Identifies the switch type.

GS_src_id - Specifies the sensor ID associated with the Data Server.

(3) Match the descriptions in the right column to the switch commands in the left column.

C	verify switch	A	Allows you to modify switch information.
D	enter switch	B	Allows you to delete a switch.
A	change switch	C	Allows you to display switch information stored in the Switch table.
B	delete switch	D	Allows you to add switch information to the Switch table.

(4) What command is used to display all items in the Switch table?

verify switch all or verify switch ++

(5) What must be done before you can add a switch to the Switch table?

The switch name has to be added to the /etc/hosts file using the enter net command.

(6) Using the position defined entry mode, write the command string to add a switch to the Switch table with these parameters.

- Sensor type is 001
- Sensor ID is 000101
- Connection ID is SwitchC.

enter switch 001 000101 SwitchC and press the Return key.

(7) Using the position defined entry mode, write the command string to change the switch connection ID for switch number 3 to SwitchD in the Switch table.

chg switch 3 connection_id=SwitchD and press the Return key.

(8) Write the command used to delete a switch from the Switch table.

delete switch 3 and press the Return key.

(9) Using prompted entry mode, you have typed the delete switch command, and entered the switch to be deleted. The command is asking you for another switch number. How do you go back to the system prompt?

Press the delete key.

(10) List the commands that allow you to maintain the Data Server DPMS table.

verify dpms enter dpms delete dpms.

(11) List and describe the parameters associated with the dpms command set.

dpms_id - Identifies the unique name associated with the DPMS.

dpms_no - Identifies the unique number associated with the DPMS.

(12) Using position defined command entry, write the command you would use to display the Data Server DPMS table.

verify dpms ++ (for all DPMSs) verify dpms <dpms_id> (for a specific DPMS)

(13) What file is checked before adding to the DPMS table, and what are you looking for in this file.

/etc/hosts - The hosts file must contain the name of the new DPMS.

(14) Write the command used to add a new DPMS called biller2.

enter dpms biller2

7. Network Administration

7.1 Overview

7.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the network administration command set
- list parameters associated with the network administration command set
- demonstrate the use of the network administration commands

7.1.2 Chapter Contents

This chapter contains a description of the net commands used for network administration.

7.2 Network Administration Commands

7.2.1 Overview

In order to administer network address information associated with the Data Server and input and output hosts that communicate with the Data Server over a LAN, the Data Server provides the net command set. This command set includes:

- verify net
- enter net
- delete net
- change net

7.2.2 Login Permissions

The verify net command may be used by any login ID. All other net commands may only be used by the application administrator.

7.2.3 Before You Begin

The Data Server must be in the active mode.

7.3 Network Administration Parameters

This table describes the parameters associated with the net command set.

Variable	Description	Value
Host name <*hostname*>	Specifies the reference name of the host.	1-24 alphanumeric characters. ***NOTE:*** Leading characters must be alpha. **Requirement** The host name cannot be one of

		these: □ mailhost □ loghost □ localhost □ echo □ ftp □ telnet □ rlogin □ mail □ exec □ login □ shell □ printer □ courier □ uucp □ route □ listen □ listener □ systemA □ SYSTEMA □ systemB □ SYSTEMB □ loopback □ me
Network Address <*netaddr*>	Specifies the network address of the host.	Dotted IP address with 4 groups of numbers separated by periods, with each number in the range of 0 to 255. **Examples** 135.7.55.204 135.177.200.140 **Requirement** The network address cannot exceed 15 characters including the periods.
Host Type <*htype*>	Specifies the type of host being added to the network. ***NOTE:*** □ Switches are input host types since the Data Server receives data from them. □ A DPMS is an output host since the Data Server transmits data to it.	i, o or ? ***NOTE:*** □ Use i to specify an input host type. □ Use o to specify an output host type. □ Use ? to specify that the host type is unknown.
Alias <*alias*>	Alternate name for host.	1-24 alphanumeric characters. ***NOTE:*** Leading characters must be

		alpha. **Requirement** The alias cannot be one of these: □ mailhost □ loghost □ localhost □ echo □ ftp □ telnet □ rlogin □ mail □ exec □ login □ shell □ printer □ courier □ uucp □ route □ listen □ listener □ systemA □ SYSTEMA □ systemB □ SYSTEMB □ loopback □ me
Host Number <*hnumber*>	Unique identifer for each host table entry.	This number is assigned by the enter command and is required to perform the change and delete commands.

7.4 How to Use the Verify Net Command

7.4.1 Overview

The verify net command allows you to display network information defined for the Data Server. Information for all defined host names, a specific host name, a specific network address, or a specific host name/network address combination is displayed.

7.4.2 Example

This is an example Network Host/Address Table using the prompted verify net command.

7.4.3 Procedure

Use prompted entry or this procedure to display the Network Host/Address Table.

Step	Action	
1	**IF you want to display a ...**	**THEN type ...**
	list of all network hosts and addresses	**verify net ++** and press Enter.
	specific host and its network address	**verify net *<hostnumber>*** and press Enter.
	specific network address and its host name	**verify net**, press Enter, type ***<hostnumber>*** and press Enter.

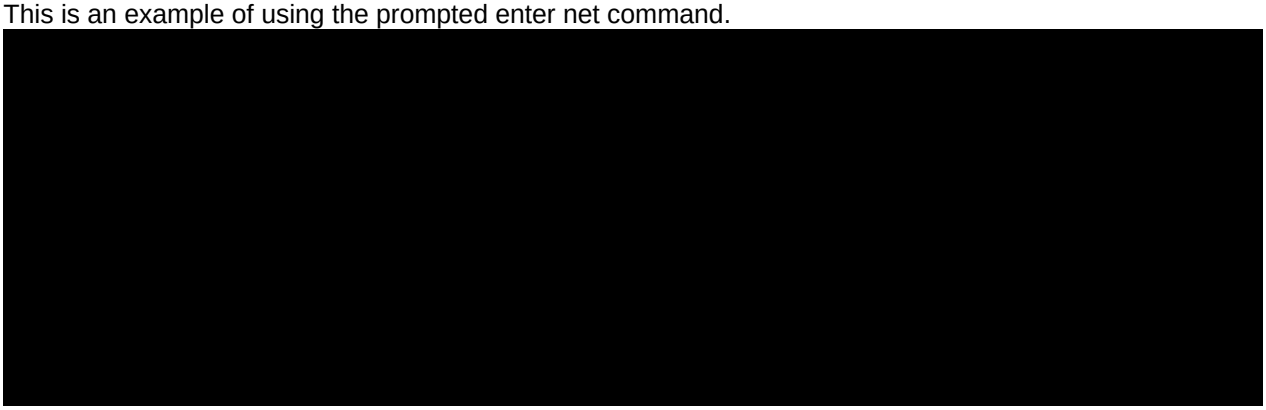
7.5 How to Use the Enter Net Command

7.5.1 Overview

The enter net command allows you to specify the host name, the host type, the IP address, and the alias of hosts that communicate with the Data Server over a LAN. Both input and output hosts types must be assigned.

7.5.2 Example

This is an example of using the prompted enter net command.



7.5.3 Procedure

Use prompted entry or this procedure to add a network host and address.

Step	Action
1	Type **enter net <*hostname*> <*hosttype*> <*ipaddress*> <*aliasname*>** and press Enter.

The system returns the host number assigned to the entry.

7.6 How to Use the Delete Net Command

7.6.1 Overview

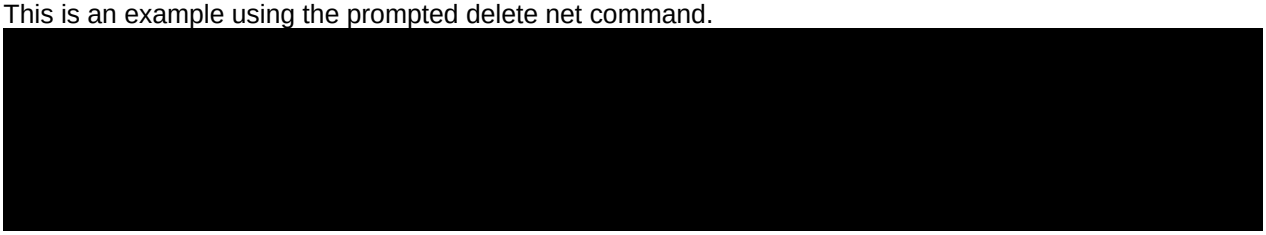
The delete net command allows you to delete input and output hosts.

Restriction

Data Server host names cannot be deleted.

7.6.2 Example

This is an example using the prompted delete net command.



7.6.3 Procedure

Use prompted entry or this procedure to delete a network host and its address.

Step	Action
1	Type **delete net <*hostnumber*>** and press Enter.

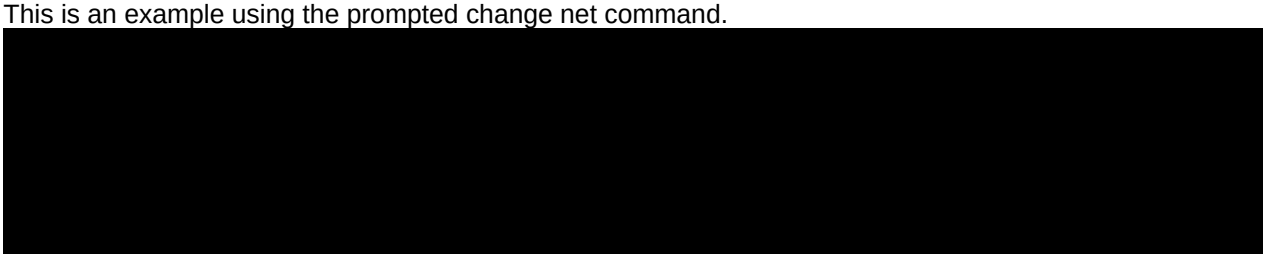
7.7 How to Use the Change Net Command

7.7.1 Overview

The change command allows you to change the network address.

7.7.2 Example

This is an example using the prompted change net command.



7.7.3 Procedure

Use prompted entry or this procedure to change network parameters.

Step	Action

1	Type **change net <*hostnumber*> <*hostname*> <*hosttype*> <*ipaddress*> <*aliasname*>** and press Enter.

7.8 Network Administration Review

(1) List the commands that allow you to maintain the network addresses.

verify net

enter net

delete net.

(2) List the parameters associated with the Net command set.

hostname - Specifies the reference name of the host.

netaddr - Specifies the network address of the host.

htype - Specifies the type of host being added to the network.

(3) Write the command to delete the network interface cbciu5_2 that has a host number of 34.

delete net cnciu5_2 135.7.11.111

(4) Write the command to display a list of all network hosts and addresses.

verify net ++

(5) Define these net command:

verify net - Allows you to display network information defined for the all host names.

enter net - Allows you to specify the host name and network address of hosts that communicate with the Data Server over a LAN.

delete net - Allows you to delete input or output hosts

change net - Allows you to delete input or output hosts

8. Data Transmission

8.1 Overview

8.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the transmission schedule commands set
- list the parameters associated with the schedule commands
- demonstrate the use of the schedule commands
- use the command to write billing files to tape

8.1.2 Data Transmission

Typically, the data transmission of primary billing files from the Data Server to the DPMS is configured for either continuous transmission or scheduled transmission.

For troubleshooting, initial setup, and other special situations the Data Server also provides commands to:

- manually send primary and/or selected secondary data to the DPMS
- write primary and/or selected secondary data to tape, if your system is equipped with an optional tape output

8.1.3 Chapter Contents

This chapter contains the commands for:

- scheduling data transmission
- manually transmitting billing data
- writing billing data to tape

NOTE: For continuous transmission the DDI administrative parameter, ddi_ continuous, must be set to yes.

Reference

See Section 4.4 , "Administrative Parameters Variables" for more information on this and other DDI parameters.

8.2 Schedule Commands

8.2.1 Overview

Transmission from the Data Server to the DPMS can be continuous, scheduled, or demand. If you choose to schedule all data transmission, set the ddi_ continuous parameter to no and use the schedule command set.

The Data Server automatically assigns a schedule number to the Data Server Schedule table when you

use the enter schedule command. The schedule number is then the key used to track a switch and its associated schedule. The schedule command set includes:

- verify schedule
- enter schedule
- change schedule
- delete schedule

NOTE: If the ddi_ continuous parameter is set to yes, you can input schedules, but they are ignored by the Data Server.

8.2.2 Login Permissions

You must log in as the application administrator in order to execute the change, enter, or delete schedule commands. The verify schedule may be used by any login ID.

8.2.3 Before You Begin

The Data Server must be in the active mode.

8.3 Schedule Parameters

This table describes the objects and parameters associated with the schedule command set.

Reference

See Section 8.4 , "Guidelines for Setting Up Schedules" for more information on time values.

Parameters	Description	Value
Scheduled Table Entry <*schedu_no*>	Identifies the schedule number. ***NOTE:*** The Data Server chooses the next available entry number when using the enter schedule command.	1-8
Minute <*minute*>	Specifies the minute(s) of the hour you want data transmission to begin.	0-59 **Recommendation** Do not schedule every minute.
Hour <*hour*>	Specifies the hour(s) you want the data transmission to begin.	0-23 or *
Day of Month <*day_of_month*>	Specifies the day(s) of the month you want the schedule to be active.	1-31 or *
Month <*month*>	Specifies the month(s) you want the schedule to be active.	1-12 or *
Day of week <*day_of_week*>	Specifies the day(s) of the week you want the schedule to be active.	0-6 or * ***NOTE:*** Sunday is 0.

8.4 Guidelines for Setting Up Schedules

8.4.1 General

Field separators may be used to set up multiple times. It is your responsibility to ensure that schedules for a single entry do not overlap.

- Use a comma as a delimiter between values.
- Use a minus sign as a delimiter indicating a range of values.

  Use an asterisk to specify all legal values.

NOTE:

- The specification of days may be made by two fields (day of the month and day of the week). If both are specified as a list of elements, both are adhered to. If you want to specify days by only one field, set the other field to an asterisk.
- Scheduling uses the *UNIX*® cron feature.
- It is your responsibility to ensure that correct dates are entered in the Day of Month field. If the date is within the accepted range for the field, the system does accept invalid dates, such as February 31.

8.4.2 Example 1

With this example, data transmission is scheduled for Monday through Friday at 7 a.m. and 7 p.m.

Minute 0
Hour 7,19
Day of month *
Month 1-12
Weekday 1-5

8.4.3 Example 2

With this example, data transmission is scheduled for Saturday and Sunday at 11:45 p.m.

Minute 45
Hour 23
Day of month *
Month *
Weekday 0,6

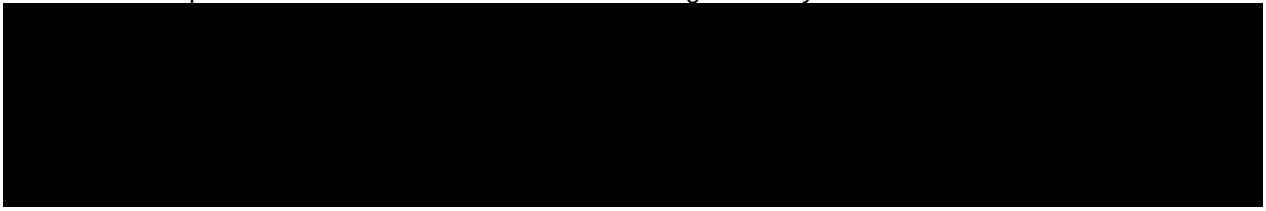
8.5 How to Use the Verify Schedule Command

8.5.1 Overview

The verify schedule command allows you to display data transmission schedules. You have the option of viewing a single schedule or the complete Data Server Schedule table.

8.5.2 Example

This is an example of the Data Server Schedule table using the verify schedule command.



8.5.3 Procedure

Use this procedure to display data transmission schedules.

Step	Action	
1	**IF you want to display ...**	**THEN type ...**
	a list of all schedules	**verify schedule ++** and press Enter.
	a specific schedule number	**verify schedule <*schedu_no*>** and press Enter.

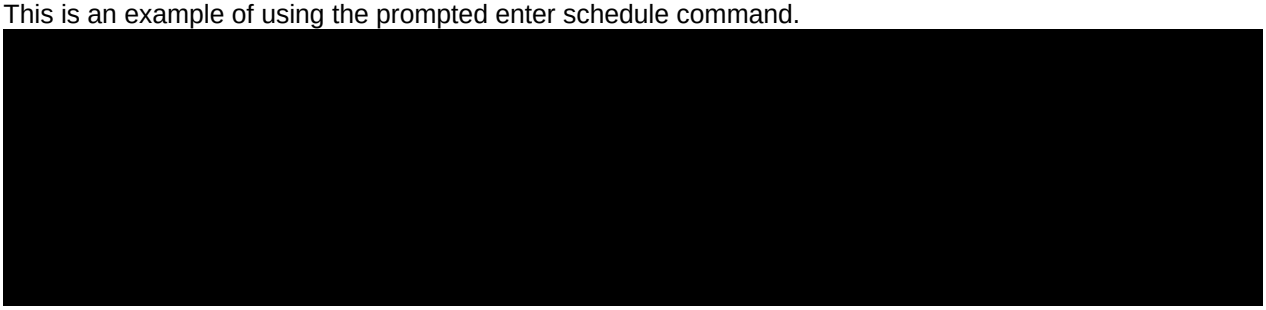
8.6 How to Use the Enter Schedule Command

8.6.1 Overview

The enter schedule command allows you to add an entry to the schedule table.

8.6.2 Example

This is an example of using the prompted enter schedule command.



8.6.3 Procedure

Use prompted entry or this procedure to add a new schedule.

Step	Action
1	Type **enter schedule <*minute*> <*hour*> <*day_of_month*> <*month*> <*day_of_week*>** and press Enter. **System Response** The Data Server assigns the next available table entry (1-8).

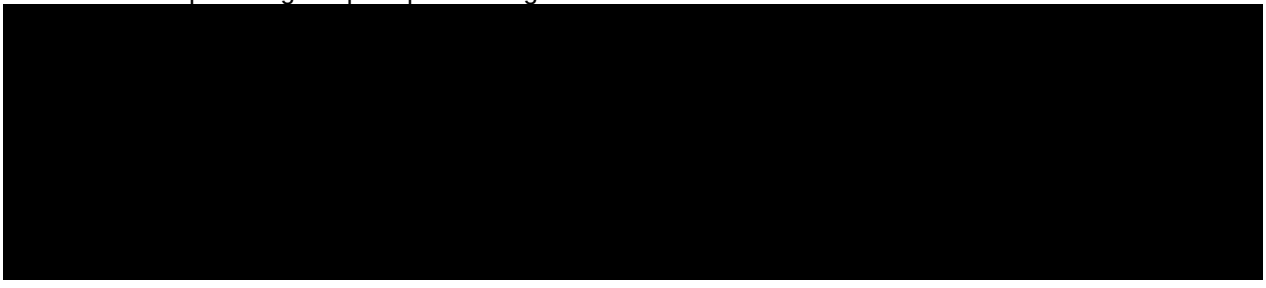
8.7 How to Use the Change Schedule Command

8.7.1 Overview

The change schedule command allows you to modify a data transmission schedule.

8.7.2 Example

This is an example using the prompted change schedule command.



8.7.3 Procedure

Use prompted entry or this procedure to change a schedule.

Step	Action	
1	**IF you want to change ...**	**THEN type ...**
	the entire schedule	**change schedule <*schedu_no*> <*minute*> <*hour*> <*day_of_month*> <*month*> <*day_of_week*>** and press Enter. ***NOTE:*** Use the values for each of the parameters.
	part of the schedule	**change schedule <*schedu_no*>=<*value*>** then use just the parameters and values you want to change: **<*minute*>=<*value*>** **<*hour*>=<*value*>** **<*day_of_month*>=<*value*>** **<*month*>=<*value*> <*day_of_week*>=<*value*>** and press Enter. **Example** Enter **change schedule *schedu_no=2 hour=5,17*** to change the hours for Schedule 2 to 5 a.m. and 5 p.m.

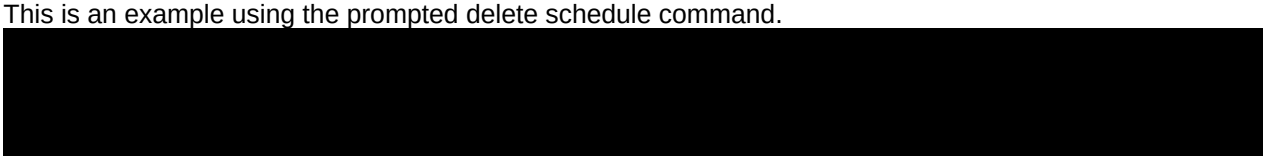
8.8 How to Use the Delete Schedule Command

8.8.1 Overview

The delete schedule command allows you to delete a complete data transmission schedule.

8.8.2 Example

This is an example using the prompted delete schedule command.



8.8.3 Procedure

Use prompted entry or this procedure to delete a schedule.

Step	Action
1	Type **delete schedule <*schedu_no*>** and press Enter.

8.9 How to Transmit Primary or Secondary Files

8.9.1 Overview

The xmit command allows you to manually transmit primary and/or selected secondary billing files to the DPMS.

8.9.2 Login Permissions

The xmit command may only be used by the application administrator.

8.9.3 Before You Begin

The Data Server must be in the active mode.

8.9.4 Table

This table describes the objects and parameters associated with the xmit command.

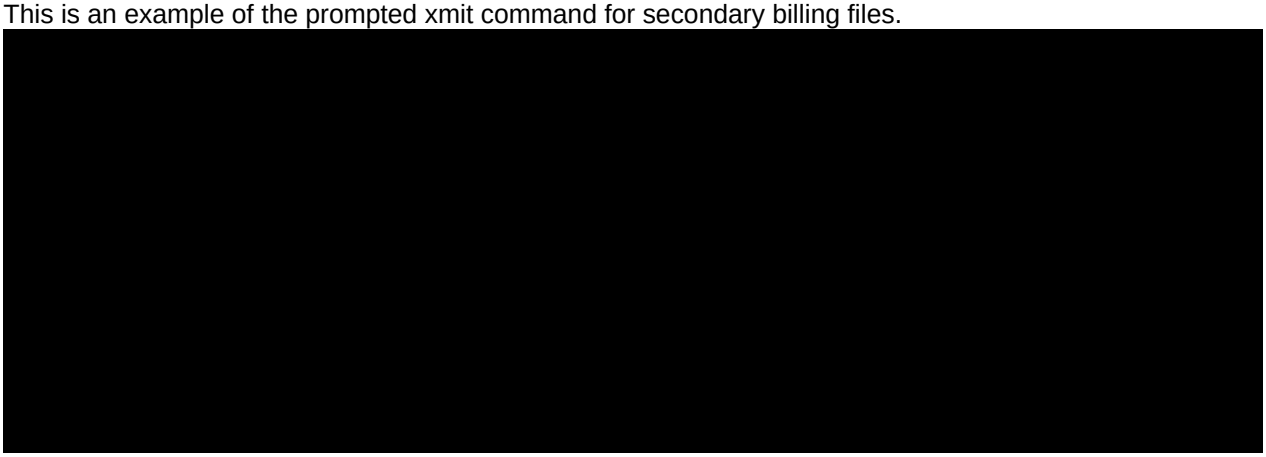
Parameters	Description	Value
Primary <*primary*>	Specifies primary files are to be transmitted to the DPMS.	primary
Secondary <*secondary*>	Specifies secondary files are to be transmitted to the DPMS.	secondary
Starting sequence number <*alpha_seqno*>	Specifies the first sequence number in a range of secondary billing files to be transmitted to the DPMS.	Valid sequence numbers are in the range of 1-65535.
Ending sequence number <*omega_seqno*>	Specifies the last sequence number in a range of secondary billing files to be transmitted to the DPMS.	

8.9.5 Example 1

This is an example of the prompted xmit command for primary billing files.

8.9.6 Example 2

This is an example of the prompted xmit command for secondary billing files.



8.9.7 Procedure

Use this procedure to transmit primary or secondary billing files to the DPMS.

Step	Action	
1	**IF you want to transmit ...**	**THEN type ...**
	primary billing files to the DPMS	**xmit primary** and press Enter.
	secondary billing files to the DPMS	**xmit secondary *<alpha_seqno> <omega_seqno>*** and press Enter.
	System Response Transferred 020001.030001.18886.01.2 successfully. Transferred 020001.030001.18887.01.2 successfully.	

8.10 How to Write Billing Files to Tape

8.10.1 Overview

The tape command allows you to write all primary billing files or selected secondary billing files to an optional tape device.

8.10.2 Requirement

The file system name of the tape device must be specified in the administrative database. The command to add the file system name is: **change admnparm tape_device=<*file_system_name*>**.

Example

/dev/rmt/0

8.10.3 Login Permissions

The tape command may only be used by the application administrator.

8.10.4 Before You Begin

The Data Server must be in the active mode.

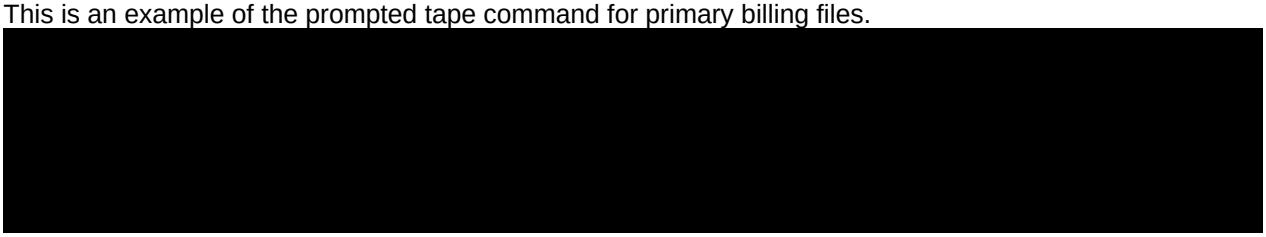
8.10.5 Table

This table describes the objects and parameters associated with the tape command.

Parameters	Description	Value
Primary <*primary*>	Specifies primary files are to be written to tape.	primary
Secondary <*secondary*>	Specifies secondary files are to be written to tape.	secondary
Starting sequence number <*alpha_seqno*>	Specifies the first sequence number in a range of secondary billing files to be written to tape.	Valid sequence numbers are in the range of 1-65535.
Ending sequence number <*omega_seqno*>	Specifies the last sequence number in a range of secondary billing files to be written to tape.	

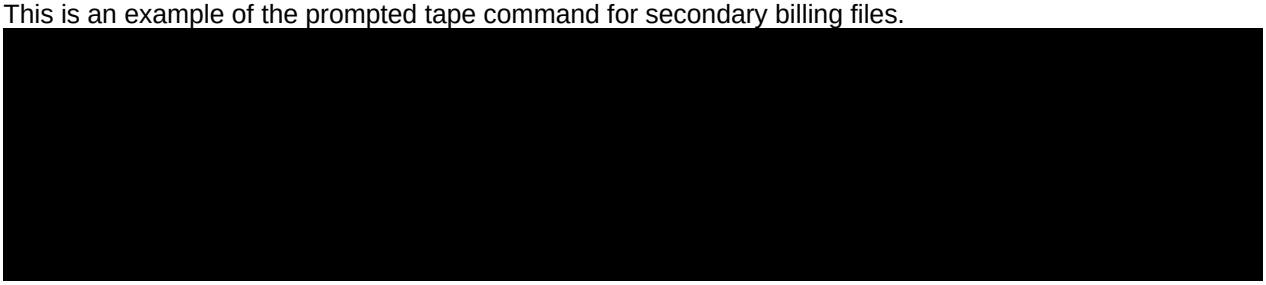
8.10.6 Example 1

This is an example of the prompted tape command for primary billing files.



8.10.7 Example 2

This is an example of the prompted tape command for secondary billing files.



8.10.8 Procedure

Use this procedure to write billing files to tape.

Step	Action	
1	**IF you want to write ...**	**THEN type ...**
	all primary billing files to tape	**tape primary** and press Enter.
	selected secondary billing files to tape	**tape secondary <*alpha_seqno*> <*omega_seqno*>** and press Enter.
	System Response	

	Please insert tape and verify that tape device is powered on. Hit <RETURN> to continue.
2	Press Enter. **System Responses** □ Rewinding tape ... Preparing files for transfer to /dev/rmt/0. □ File names and block sizes scroll on the screen until all the files have been transmitted. □ Rewinding tape ... Tape processing complete.

8.11 Data Transmission Review

(1) List the commands that allow you to maintain the Data Server Switch table.

verify schedule
enter schedule
change schedule
delete schedule

(2) List the two methods of transmitting from the Data Server to Data Processing Management System.

Continuous Scheduled

(3) What is the result of the ddi_continuous administrative parameter being set to yes?

Transmission of billing data is continuous.

(4) List the field separators used to set up multiple schedule times.

Use a comma as a delimiter between values. Use a minus sign as a delimiter indicating a range of values. Use an asterisk to specify all legal values.

(5) Which command would you use to manually send primary billing files to the DPMS?

xmit primary

(6) Why would you have a need to manually transmit secondary billing data files to the DPMS?

The DPMS has the need to send the data to the downstream biller. The data was corrupted or missing.

(7) Match the maintenance switch commands in the left column with the proper description in the right column.

D	verify schedule	A	Allows you to delete a Schedule table entry.
C	enter schedule	B	Allows you to modify a data transmission schedule.
B	change schedule	C	Allows you to add an entry to the Schedule table.
A	delete schedule	D	Allows you to display the data transmission Schedule table.

(8) Write the command string to change a transmission schedule from Monday through Saturday to all days of the week.

change schedule day_of _week=*

(9) Write the command string to enter a transmission schedule using the following:

- Monday through Saturday
- All days of the month
- All months of the year
- 30 minutes after each hour

enter schedule 30 * * * * 1-6

(10) What command is used by the application administrator to write primary billing files to tape?

tape command

(11) What is the command string used to write the following secondary billing files to tape?

5112 to 6246 - tape secondary 5112 6245

9. Alarm and Message Interfaces

9.1 Overview

9.1.1 Objectives

Upon completion of this chapter, you should be able to test alarm levels.

9.1.2 Chapter contents

This chapter describes:

- the Event Message/Alarm Interface for the *5ESS*® Switch ROP
- how to test alarm levels

9.2 Read Only Printer (ROP)

9.2.1 ASM

For this Data Server application, specific event messages and alarms are forwarded to the *5ESS*® Switch ROP.

9.3 How to Test Alarms

9.3.1 Overview

The test alarm command allows you to specify the level of the test alarm that you want to send to the Data Server log file. If any detectable error occurs, then the system responds with a message indicating the nature of the problem. Otherwise, you should verify that the alarm message was sent by examining the appropriate log displays.

NOTE:

- To verify that the test message was sent to the Data Server log file, check the Error and Event log by using the display log command set.
- Results of alarm tests are only recorded on the Data Server, they are not forwarded to the 5ESS Switch ROP.

Reference

See Section 10.29 , "How to Display Logs" for the procedure on displaying logs.

9.3.2 Procedure

Use this procedure to test alarms.

Step	Action	
1	**IF you ...**	**THEN type ...**
	know the type of alarm you want to test	**test alarm** <*almlvl*> and press Enter. ***NOTE:*** Alarm level options are: - inf for informational message

		□ min for minor alarm message □ maj for major alarm message □ crit for critical alarm message.
	want to use prompted entry	**test alarm** and press Enter.

9.4 Alarm and Message Interface Review

(1) What allows you to use the ROP to receive event messages and alarms?

Event Message/Alarm Interface (RS-232 serial interface)

(2) Write the command to test the major alarm level.

test alarm maj

(3) How do you verify that a test message was sent to the Data Server.

Check the Data Server Error and Event log by using the display log command.

10. Reports, Logs, and Audit

10.1 Overview

10.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the reports available that concern billing files
- list system logs that can be viewed on the system
- define the naming convention for AMADNS billing files
- list the type of information maintained by the AMADNS file index
- state the purpose of each report

10.1.2 Chapter Contents

This chapter describes the Data Server billing file reports, record reports, teleprocessing summary reports, and system logs which you can display. An AMADNS File Index audit is also available.

10.1.3 Introduction

The Data Server provides billing file reports, teleprocessing summary reports, and system logs which you can display. An AMADNS File Index audit is also available.

10.1.4 Billing File Reports

The Data Server provides two billing file reports that can be viewed on your terminal. These are the Billing File Summary report and the Billing File report. The system also provides the capability to send the Billing File Summary report to a printer.

10.1.5 Teleprocessing Summary Reports

The Data Server provides two reports dealing with DDI activity. These are the Teleprocessing Daily DDI Summary report and the Teleprocessing DDI Session Summary report. These reports can be viewed on your terminal or sent to a printer.

10.1.6 Logs

System logs can be viewed on your screen and include:

- Audit
- Collection
- Command
- Error and Event
- Disk Cleanup
- Tape
- Transmission

10.1.7 AMADNS File Index Audit

The Data Server automatically runs an audit of the AMADNS File Index once a day. In special circumstances it may need to be run manually. The audit index command provides this capability.

10.1.8 Printer Setup

The Data Server uses printers which are configured into the *UNIX*® lp subsystem. To add or delete printers you use the *UNIX*® admintool menus.

Reference

See the hardware documentation provided by your hardware vendor for instructions on using the *UNIX*® admintool menus.

10.2 AMADNS File Naming Conventions

10.2.1 Overview

AMADNS billing files that are stored on the Data Server have a specific naming convention, which is *<source component id>.<destination component id>. <file sequence number>. <file type>.<priority>*.

The display billfile command requires that you input sequence numbers in order to generate the Billing File report. Sequence numbers are found in the third field of a file name.

10.2.2 Table

This table describes the components which make up an AMADNS file name. These components, except the file sequence number which is generated by the Data Server, are defined using the change admnparm command. Each parameter field is noted with the admnparm parameter variable.

Fields	Description
Source Component ID *<DS_src_type> <DS_src_id>*	The first two digits identify the type of AMADNS component. The default for the Data Server is 02.The last four digits provide the Data Server ID.
Destination Component ID *<DPMS_dest_type> <DPMS_dest_id>*	The first two digits identify the type of AMADNS component. The default is 03 for DPMS. The last four digits identify the DPMS.
File Sequence Number	Identifies the sequence number generated by the Data Server. ***NOTE:*** □ Valid sequence numbers are in the range of 1-65535. □ All leading zeros may be skipped when inputting a file sequence number for a report.
File Type	AMADNS is 01.
Priority *<priority>*	Matches the admnparm value set for priority. ***NOTE:*** AMADNS files are 2.

10.2.3 Billing Data File Numbering

Billing data is stored on disk in files that are numbered sequentially.

Examples of File Names

□ 020000.030000.03038.01.2

- 020000.030000.03039.01.2
- 020000.030000.03040.01.2
- 020000.030000.03041.01.2

10.2.4 File Sequence Numbers

The Data Server generates file sequence numbers sequentially from 1 to 65535. When the maximum number of 65535 is reached, the next sequence number generated is 1 unless file sequence number 1 has not been changed to secondary data. If file sequence number 1 has not been transmitted as primary, the new file would be lost.

10.3 AMADNS File Index

10.3.1 Overview

The Data Server manages a large number of AMADNS billing files. If disk space permits, the total number of billing files stored on the Data Server may be as high as 65,535, which is the limit placed on the range of file sequence numbers.

The AMADNS File Index is used to maintain global information and individual file information about AMADNS files. This information is used by various processes which create, modify, or require information about stored AMADMS files.

10.3.2 Global Information

The AMADNS file index maintains this global information on sequence numbers.

- oldest secondary file
- newest secondary file
- oldest primary file
- newest primary file

10.3.3 Individual Files

The AMADNS file index maintains this information on individual files.

- AMADNS file name
- file state of primary or secondary
- file creation time
- origination switch of the file

10.4 AMADNS File Index Audit

10.4.1 Overview

The Data Server automatically runs an audit of the AMADNS File Index once a day and posts the results in the Audit log. In special circumstances, such as problems between primary and secondary data, and at the

request of a technical support person, an audit may need to be run manually. The audit index command provides this capability.

10.4.2 Login Permissions

The audit index command may only be used by the administrator.

10.4.3 Before You Begin

The Data Server should be in the active mode.

10.4.4 Procedure

Use this procedure to run an audit of the AMADNS File Index.

Step	Action
1	Type **audit index** and press Enter.

10.4.5 Example

This is an example of using the audit index command.

10.4.6 Reference

See Section 10.20 , "Log Reports" and Section 10.22 , "Audit Log Example" for information on how to review the results of the audit.

10.5 Billing File Summary Report

10.5.1 Overview

The Billing File Summary report displays statistics for the billing data that is currently stored on your system. The report can be displayed on your screen or sent to a printer. The bfs command set includes display bfs and print bfs.

10.5.2 Login Permissions

The display bfs and print bfs commands may be used by any login ID.

10.5.3 Before You Begin

The Data Server must be in the active mode.

10.6 Billing File Summary Report Examples

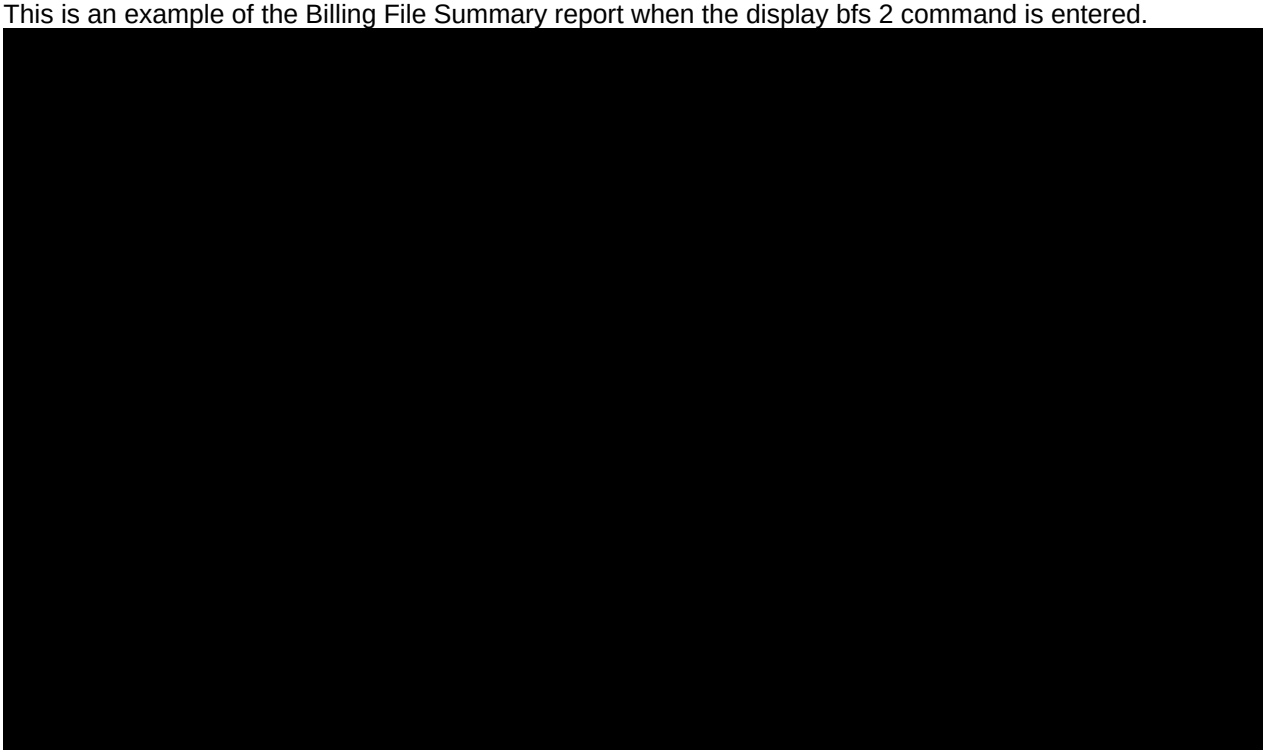
10.6.1 Example 1

This is an example of the Billing File Summary report when the display bfs all command is entered.

NOTE: The all option displays billing file data for each of the past 5 days. An additional line (5+) displays the cumulative data for all files older than 5 days.

10.6.2 Example 2

This is an example of the Billing File Summary report when the display bfs 2 command is entered.



10.7 Billing File Summary Report Fields

This table describes the fields associated with the Billing File Summary report.

Field	Description
Primary and Secondary	
Day	Specifies the number of days prior to the current day. The values for the days used in the report are 0-4 and 5+.

	NOTE: □ This field is only displayed if you choose the all option with the display bfs command. □ Current day value is 0. □ The value 5+ displays the cumulative data for all files older than 5 days that are currently residing on disk.
Hour	Specifies the hour the file was created on the Data Server, not transmitted to the DPMS. ***NOTE:*** □ This field is only displayed if you enter **display bfs <*value*>** indicating a specific day. □ Midnight is designated as 0.
Oldest Seqno	Identifies the oldest sequence number of the range of primary or secondary files of data.
Newest Seqno	Identifies the newest sequence number of the range of primary or secondary files of data.
File Count	Specifies the number of AMADNS files. ***NOTE:*** The formula for this number is <*newest_seqno*> - <*oldest_seqno*> + 1 = file count.
Missing Files	Specifies the number of missing files.
Billing Storage Usage	
NOTE: This information is only provided if you choose the all option with the display bfs command.	
Temp Files	Specifies the percentage of the billing file storage area occupied by temporary files.
Primary Files	Specifies the percentage of the billing file storage area occupied by primary files.
Secondary Files	Specifies the percentage of the billing file storage area occupied by secondary files.
Total (Capacity)	Specifies the total percentage of the billing file storage area occupied by temporary, primary, and secondary files.

10.8 How to Display or Print the Billing File Summary Report

Use prompted entry or this procedure to display the Billing File Summary report.

Step	Action	
1	**IF you want to ...**	**THEN type ...**
	view a summary for the past 5 days	**display bfs all** and press Enter.
	view an hourly report for a specific day	**display bfs <*value*>** and press Enter. ***NOTE:*** The value can be 0-30, indicating the number of days from the current day.
	print a summary for the past 5 days	**print bfs all** and press Enter.
	print an hourly report for a specific day	**print bfs <*value*>** and press Enter. ***NOTE:*** The value can be 0-30, indicating the number of days from the current day.

10.9 Billing File Report

10.9.1 Overview

The Billing File report is displayed using the display billfile command. The Billing File report is requested

with a beginning and ending file sequence number. Each file within the report lists the name of the file and the file state, then lists all field names and their values for each call record.

10.9.2 Login Permissions

The display billfile command may be used by any login ID.

10.9.3 Before You Begin

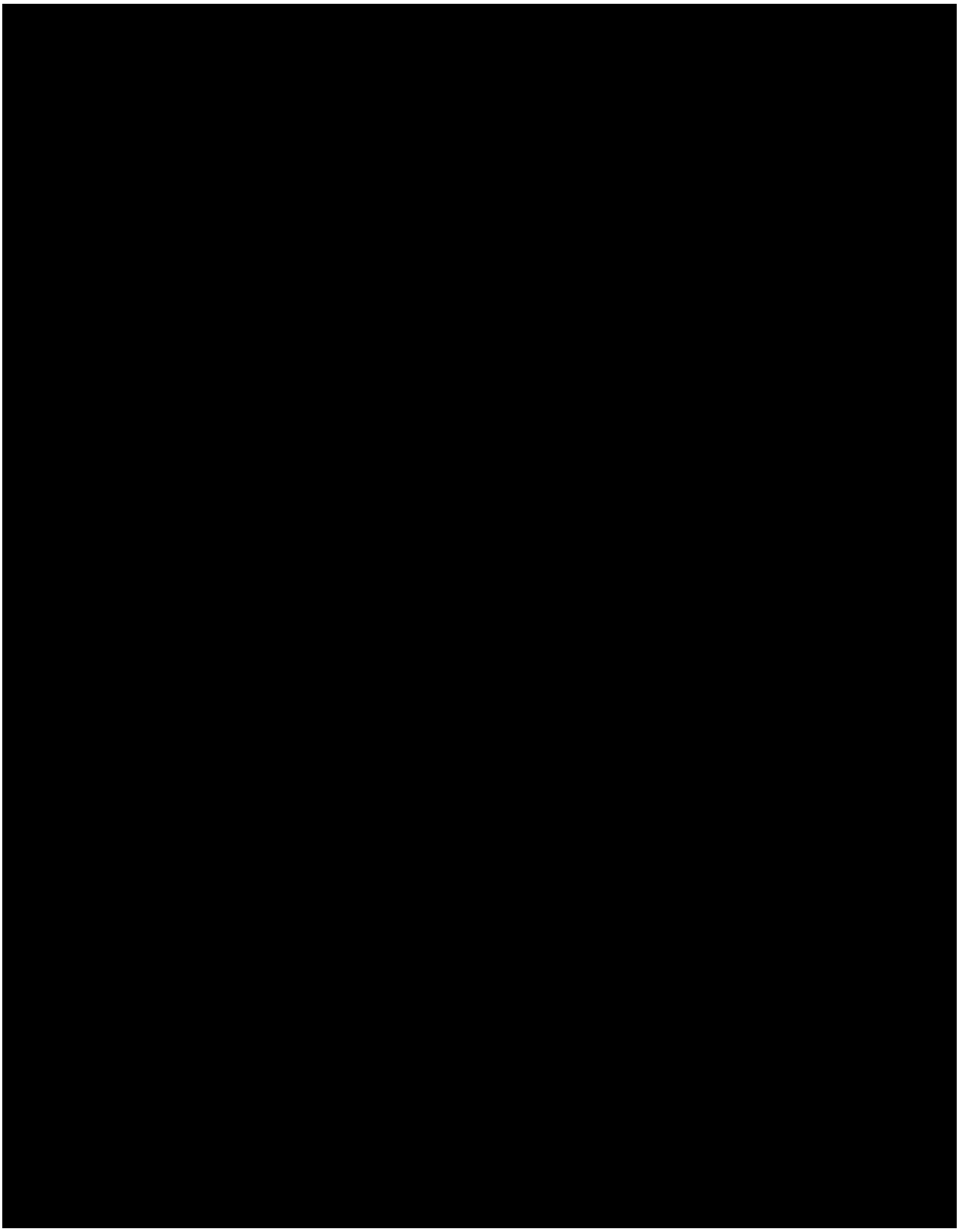
The Data Server must be in the active mode.

10.9.4 File Size

AMADNS billing files can be huge, so the command set limits both the number of input records and the output generated. If the sequence number range specified includes too many billing files, the output is truncated.

10.10 Billing File Report Example

This is an example of the Billing File report when the display billfile command is entered.



10.11 Billing File Report Parameters

This table describes the parameters associated with the Billing File report.

Parameter	Description

First Sequence No. <*alpha_seqno*>	Specifies the sequence number of the first billing file to be displayed/searched. ***NOTE:*** Valid sequence numbers are in the range of 1-65535.
Last Sequence No. <*omega_seqno*>	Specifies the sequence number of the last billing file to be displayed/searched. ***NOTE:*** □ Valid sequence numbers are in the range of 1-65535. □ File numbers wrap to 1 when they reach 65535, so the last sequence number may be lower than the first sequence number. For example, you could specify a first sequence number of 65530 and a last sequence number of 5.

10.12 How to Display or Print the Billing File Report

Use this procedure to display and/or print the Billing File report.

Step	Action	
1	**IF you want to ...**	**THEN type ...**
	view billing files	**display billfile <*alpha_seqno*> <*omega_seqno*>** and press Enter. **File Size** AMADNS billing files can be huge, so the command limits both the number of input records and the output generated. If the sequence number range specified includes too many billing files, the output is truncated. **Reference** See Section 3.15 , "How to Use Page Commands", for how to browse a report.

10.13 Teleprocessing Daily DDI Summary Report

10.13.1 Overview

The Teleprocessing Daily DDI Summary report displays DDI statistics for the current day. The report can be displayed on your screen, sent to a printer, or sent to the *5ESS*® ROP. The tpsum command set includes:

- □ display tpsum
- □ print tpsum
- □ rop tpsum

A teleprocessing summary report is automatically sent to the *5ESS*® ROP at the end of each day.

10.13.2 Login Permissions

The tpsum commands may be used by any login ID.

10.13.3 Before You Begin

The Data Server must be in the active mode.

10.14 Teleprocessing Daily DDI Summary Report Example

This is an example of the Teleprocessing Daily DDI Summary report when the display tpsum command is entered.

10.15 Teleprocessing Daily DDI Summary Report Fields

This table describes the fields associated with the Teleprocessing Daily DDI Summary report.

Field	Description
Sessions	Specifies the number of DDI sessions for the current date, including a session currently in progress. ***NOTE:*** This value equals the sum of normal and abnormal terminations, unless a session is currently in progress, then this value equals the sum of normal and abnormal terminations, plus one.
Normal Terminations	Specifies the number of sessions which terminated normally.
Abnormal Terminations	Specifies the number of sessions which terminated abnormally.
Sessions Rejected	Specifies the number of attempted sessions which were rejected. ***NOTE:*** These are not counted in the Sessions field.
Primary Files Transmitted	Specifies the number of primary files transmitted.
Secondary Files Transmitted	Specifies the number of secondary files transmitted.
Primary File Requests Rejected	Specifies the number of primary files which were rejected.
Secondary File Requests Rejected	Specifies the number of secondary files which were rejected.
Minor Disk Alarms (minutes)	Specifies the number of minutes the system was in each alarm state.
Major Disk Alarms (minutes)	
Critical Disk Alarms (minutes)	
First File Transmitted	Specifies the name of the first file that was transmitted.
Last File Transmitted	Specifies the name of the last file that was transmitted.

10.16 Teleprocessing DDI Session Summary Report

10.16.1 Overview

The Teleprocessing DDI Session Summary report displays DDI statistics for either the current session if a session is currently active, or the most recent DDI session. The report can be displayed on your screen or sent to a printer. The tpsess command set includes:

- display tpsess
- print tpsess

10.16.2 Login Permissions

The display tpsess and print tpsess commands may be used by any login ID.

10.16.3 Before You Begin

The Data Server must be in the active mode.

10.17 Teleprocessing DDI Session Summary Report Example

This is an example of the Teleprocessing DDI Session Summary report when the display tpsess command is entered.

10.18 Teleprocessing DDI Session Summary Report Fields

This table describes the fields associated with the Teleprocessing DDI Session Summary report.

Field	Description
n DDI Session Status	Specifies whether the DDI session is currently in progress or if the report is from a previous completed session. ***NOTE:*** *n* is a variable that can be either current or previous.
Start Time	Specifies the session start time in the format of *mm/dd/yy hh:mm:ss*
n Time	Specifies the time of the DDI session. The field is labeled Current Time or Stop Time. If the field is labeled Current Time, then the session is currently in progress. If the field is labeled Stop Time, then the specified time is for a completed session. ***NOTE:*** *n* is a variable that can be Current or Stop.
Primary Files Transmitted	Specifies the number of primary files transmitted in the session.
Secondary Files Transmitted	Specifies the number of secondary files transmitted in the session.
Untransmitted Primary Files	Specifies the current number of primary files.
Primary File Requests Rejected	Specifies the number of primary files which were rejected.
Secondary File Requests Rejected	Specifies the number of secondary files which were rejected.
First File Transmitted	Specifies the name of the first file that was transmitted in the session.
Last File Transmitted	Specifies the name of the last file that was transmitted in the session.
Session Termination	Specifies the reason for session termination. These reasons

	are: □ Normal □ Application Shutdown □ Transmission Error □ Protocol Error.

10.19 How to Display or Print the Teleprocessing DDI Summary Reports

Use this procedure to display and/or print the Teleprocessing Daily DDI Summary report and/or the Teleprocessing DDI Session Summary report.

Step	Action	
1	**IF you want to ...**	**THEN type ...**
	view the daily DDI summary report	**display tpsum** and press Enter.
	print the daily DDI summary report	**print tpsum** and press Enter.
	send the daily DDI summary report to the assigned 3B computer	**rop tpsum** and press Enter.
	view the daily DDI session report	**display tpsess** and press Enter.
	print the daily DDI session report	**print tpsess** and press Enter.

10.20 Log Reports

10.20.1 Overview

The display log command allows you to display a variety of Data Server logs. These logs contain alarm and informational messages and can be requested for a specific time or for messages of a specific type. You may also use this command to display messages as they are logged.

10.20.2 Log Types

This table describes the type of logs provided by the Data Server.

Log Name	Description
Audit <*audit*>	This log displays the results of an AMADNS Index audit. The AMADNS index tracks all AMADNS files on the system.
Collection <*coll*>	This log tracks the time and date that billing records are received at the Data Server, and the time and date the Data Server creates the primary files from the billing records received. There are two types of messages contained in this log. **Examples** □ LH0047 LH_RCVPBLKS received blocks 116996 to 117073 from NE1 □ DCNI009 DCNI_PRIMARY_DONE Created Primary file 020005.030001.03572.01.2: Created 02/21/99 01:39. Contains 15754 records received from switch 1.
Command <*cmd*>	This log tracks user activity on the system. There are three types of messages contained in this log which track logins, logouts, and all executed commands. **Examples** □ MMLI001 MMLI_LOGIN User umatsup logged in □ MMLI002 MMLI_LOGOUT User umatsup logged out

	□ MMLI003 MMLI_EXEC Execution of vfy admnparm by user umatsup complete.
Disk Clean-Up <*dcu*>	This log tracks the removal of old secondary files. There is one message that appears in this log. **Example** DCNI011 DCNI_SECONDARY_REMOVED Secondary file 020005.030001.25508.01.2 removed: Created 03/08/99 21:20. Contains15498 records received from switch 1.
Error and Event <*log*>	This log tracks all system events, errors, and alarms. **Reference** See Chapter 11 , "Output Messages", for a listing of system messages, message priorities, message explanations, and action to be taken.
Tape <*tape*>	This log tracks primary and tertiary billing files written to tape. There are two types of messages contained in this log. **Examples** □ TP0028 TP_ST_PRIMARY Primary file 011234.033333.00000.01.2 size 999836 bytes written to tape successfully for DPMS as 011234.033333.00000.01.2 □ TP_ST_TERTIARY
Transmission <*xmit*>	This log tracks the transmission of billing files to the DPMS. **Example** FX0033 FX_XMIT Transmitted PRIMARY file 020005.030001.03265.01.2 to DPMS bnsdev2b: Created 02/20/99 20:20. Contains 15511 records received from switch 1.

10.20.3 Login Permissions

The display log commands may be used by any login ID.

10.20.4 Before You Begin

The Data Server can be in the active or stopped mode.

10.21 Display Log Parameters

This table describes the parameters associated with the display log command.

Parameter	Description	Value Start
Date <*strtdate*>	Displays messages beginning with this start date.	Start date in the format of *yymmdd* **Default** Current date ***NOTE:*** The first two digits represent the year, the next two represent the month, and the last two represent the day. **Example**

		Enter 980705 to designate July 7, 1998.
Start Time <*strtime*>	Displays messages beginning with this start time.	Time in the format of *hhmm* ***NOTE:*** □ The time is based on the 24-hour clock. □ The first two digits specify the hour and the second two digits specify the minute. **Example** 2115 designates 9:15 p.m.
End Date <*endate*>	Displays messages through this date.	End date in the format of *yymmdd* ***NOTE:*** The first two digits represent the year, the next two represent the month, and the last two represent the day. **Example** 980715 designates July 15, 1998.
End Time <*endtime*>	Displays messages ending with this time.	Time in the format of *hhmm* ***NOTE:*** □ The time is based on the 24-hour clock. □ The first two digits specify the hour and the second two digits specify the minute. **Example** 2115 designates 9:15 p.m.
Type of Messages to Display <*msgdis*>	Specifies the type of messages you want to see in the log report.	Options are: □ All □ Critical □ Major □ Minor. **Default** All
Type of Log to Display <*logfile*>	Displays all messages of the specified type. ***NOTE:*** Only the application administrator can view cmd type messages.	Options are: □ audit □ coll □ cmd

		□ dcu □ log □ tape □ xmit. **Default** log
Type of Message Display <*type*>	Specifies the type of message display.	Options are: □ all □ tail. **Default** al ***NOTE:*** □ All displays every message within the specified time and type. □ Tail displays the last 20 messages found and then continues to display messages as they are logged until you press the Delete key.

10.22 Audit Log Example

This is an example of the Audit log (audit).

10.23 Collection Log Example

This is an example of the Collection log (coll).

10.24 Command Log Example

This is an example of the Command log (cmd).

10.25 Error and Event Log Example

This is an example of the Error and Event log (log).

10.26 Disk Clean-Up Log Example

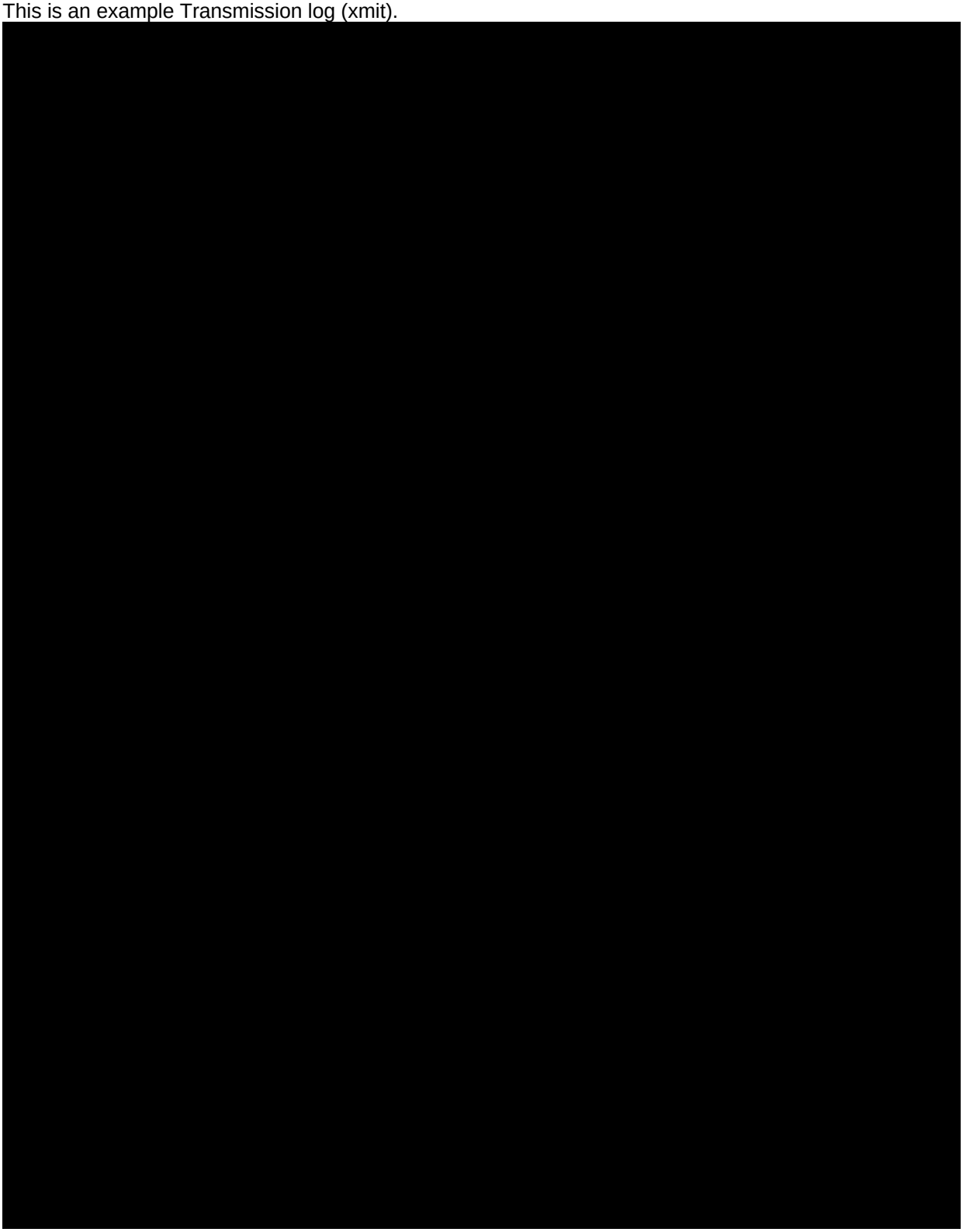
This is an example of the Disk Clean-Up log (dcu).

10.27 Tape Log Example

This is an example of the Tape log (tape).

10.28 Transmission Log Example

This is an example Transmission log (xmit).



10.29 How to Display Logs

This is an example of using prompted entry for displaying a log.

Use prompted entry or this procedure to display log reports.

Step	Action	
1	**IF you want to view the ...**	**THEN type ...**
	Audit log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> audit <*type*>** and press Enter.
	Command log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> cmd <*type*>** and press Enter.
	Collection log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> coll <*type*>** and press Enter.
	Error and Event log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> log <*type*>** and press Enter.
	Disk Clean-Up log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> dcu <*type*>** and press Enter.
	Tape log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> tape <*type*>** and press Enter.
	Transmission log	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> xmit <*type*>** and press Enter.
	messages as they are logged	**display log <*strtdate*> <*strtime*> <*endate*> <*endtime*> <*msgdis*> <*logname*>** tail and press Enter. ***NOTE:*** The tail parameter also displays the 20 messages prior to entering the command.
	current day Error and Event log with all message types	**display log ++** and press Enter. ***NOTE:*** This command uses all system-assigned default values.

10.30 Reports, Logs, and Audit Review

(1) List the reports available that concern billing files.

Billing File Summary report

Billing File report

Teleprocessing Daily DDI Summary report

Teleprocessing DDI Session Summary report

(2) Using the AMADNS file name, 020000.030000.03040.01.2, define each part and describe the naming convention of each component.

020000 - The first two digits identify the type of AMADNS component. The default for the Data Server is 02.The last four digits provide the Data Server ID. The two <DS_src_type> and <DS_src_id>

030000 - The first two digits identify the type of AMADNS component. The default is 03 for DPMS. The last four digits identify the DPMS. <DPMS_dest_type> <DPMS_dest_id>

03040 is the file sequence number generated by the Data Server.

01 is the file type. AMADNS is 01. <DPMS_dest_type>

2 is the AMADNS priority. This value matches the admnparm value set for priority.

(3) What command would you use to run a manual audit of the AMADNS file index?

audit index

(4) Why would you want to run a manual audit?

If there is an indication of problems with primary and secondary data. Typically, a manual audit is only run at the request of a technical support person.

(5) State the purpose of each billing file report.

The Billing File Summary report displays statistics for the billing data that is currently stored on your system. The Billing File report is used to display the beginning and the ending file sequence number and lists the name of the file, file state, then lists all the names and their values for each record. The Teleprocessing Daily DDI Summary report displays DDI statistics for either the current day or the previous day. The Teleprocessing DDI Session Summary report displays DDI statistics for either the current session or the most recent DDI session.

(6) Which type of message display associated with the display log command allows you to monitor the log display?

tail

(7) The Data Server allows you to display different types of logs. List and then describe them.

audit - Displays the results of an AMADNS Index audit. The AMADNS index tracks all AMADNS files on the system.

coll - Tracks the time and date that billing records are received.

cmd - Tracks user activity on the system.

dcu - Tracks the removal of old secondary files.

log - Tracks all system events, errors, and alarms.

tape - Tracks billing files written to tape.

xmit - Tracks the transmission of billing files to the DPMS

(8) What type information is maintained by the AMADNS file index?

Oldest secondary file, Newest secondary file, Oldest primary file, Newest primary file, AMADNS file name, File state of primary or secondary, File creation time, Origination switch of the file

11. Output Messages

11.1 Overview

11.1.1 Objectives

Upon completion of this chapter, you should be able to:

- list the contents of the output messages
- list the output message categories
- define module identifications which could generate output messages
- list the output message priorities

11.1.2 Chapter Contents

This chapter provides a detailed explanation of system output messages for the Data Server product line. Messages are not applicable to all products. Output messages include:

- message priority (critical, major, minor, or informational)
- date and time the message was generated
- the name of the system that generated the message (for example, SystemA or SystemB)
- identification of the Data Server module that generated the message and the message number
- the text of the message

11.1.3 Output message categories

There are three categories of output messages.

Message	Description
Log file messages	Messages that appear in the Data Server log file. In this chapter, these messages are listed by the module that generates them.
Command responses	Messages that you may see when you enter commands on the system. All of these messages have the module identification of UI. UI messages are described in the User Interface Messages chapter of this guide.
Additional messages	Messages that may appear on the screen while you are working on the system. These messages are not identified by a module identification and message number. Additional messages are listed in alphabetical order and are described in the User Interface Messages chapter of this guide.

References

- See Chapter 12 , "User Interface Messages", for more information on command responses and additional messages.
- See the *UNIX*® Operating System manuals that were provided with your system for an explanation of *UNIX*® Operating System errors.

11.1.4 Message Priorities

Messages generated on the Data Server have one of these priorities.

Code	Alarm	Description
*C	Critical	Indicates that a critical loss of functionality has occurred. Critical alarms indicate that a loss of billing data may occur or may have already occurred.
**	Major	Indicates loss of a major component or function of the system.
*	Minor	Indicates that there was no loss of major functionality, but an error condition exists that requires attention.
	Informational	Indicates that the message contains system status or administration information. These are general messages indicating how the system is running, or error messages which are self-correcting and do not require attention. Informational messages are also generated to record every command that is entered on the system. ***NOTE:*** Informational messages are preceded by two blank spaces.

11.1.5 Module Identification

Each message is also marked with the identification of the module that generated the message. This table lists the Data Server system modules that generate output messages and the module identifications that correspond to each. Messages are not applicable to all Data Server products.

Module	Module Identification
Command Execution	CMDX
Component Manager	CMGR
File Manager	DCNI
Receiver-initiated DDI	DDS
Formatter	FMTR
DDI File Transmission	FX
GRID	GR
Library Software Functions	LIB
MML Command Interface	MMLI
Switch Interface	SI
System Manager	SYSM
Tape Processing	TP
User Interface	UI
General	UMAT

11.1.6 Message Text

The message text is a brief description of the alarm condition or event that caused the message to be generated.

11.1.7 Output Message Description Format

This information is provided in this chapter for each Data Server output message.

Information Label	Description
Message Format	Shows the message text that appears on the screen. Variable information is indicated by <*var1*>, <*var2*>, <*var3*>, and so on. In the message that appears on the screen, each variable is replaced by text.
Priority	Indicates the type of alarm. These are: □ Critical □ Major □ Minor □ Informational.
Explanation of Message	Explains the text of the message or what would cause this message to be output.
Variable Fields	If the message contains variable information, explains each variable field in

	the message.
Action to be Taken	Explains what you need to do to correct the problem. No action necessary means that this message does not indicate a problem and you do not need to do anything. For some messages, an action is required only if the condition persists or if the message occurs repeatedly. In these cases, the action should be taken if the message occurs five times or more within five minutes.

11.2 Command Execution (CMDX) Messages

11.2.1 Overview

CMDX messages are generated by the Command Execution system module. The Command Execution system module performs the function of carrying out Data Server input commands that are entered on the system.

11.2.2 CMDX001

Message Format: CMDX_OPTION Invalid option passed to <*var1*>.

Priority: Minor

Explanation of Message: This message indicates that a communication error occurred with the Data Server software.

Variable Fields:<*var1*> is the name of the process receiving a message.

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.2.3 CMDX002

Message Format: CMDX_GRP Cannot <*var1*><*var2*> group ids.

Priority: Minor

Explanation of Message: This message is generated if the system encounters an error when trying to obtain or set login ID permission group information.

Variable Fields:<*var1*> indicates the action the system was attempting to perform. <*var2*> indicates the permission group.

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.2.4 CMDX003

Message Format: CMDX_SYS System call failed - <*var1*>.

Priority: Minor

Explanation of Message: This message indicates that an internal *UNIX*® Operating System command failed.

Variable Fields:<*var1*> is the attempted system command.

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.2.5 CMDX004

Message Format: CMDX_TEST Test Alarm; level = [<*var1*>].

Priority: Critical, Major, Minor, or Informational

Explanation of Message: This is a test message sent by the test alarm command.

Variable Fields:<*var1*> is the level of the test alarm.

Action to be Taken: None

11.2.6 CMDX005

Message Format: CMDX_SWTBL Failure accessing switch table, for entry <*var1*>.

Priority: Critical, Major, Minor, or Informational

Explanation of Message: An entry in the switch table could not be accessed due to an internal processing error.

Variable Fields: None

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.2.7 CMDX006

Message Format: CMDX_NETADDR Failure accessing network address file.

Priority: Critical, Major, Minor, or Informational

Explanation of Message: An attempt to access the network address file (/etc/hosts) failed.

Variable Fields: None

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.3 Component Manager (CMGR) Messages

11.3.1 Overview

CMGR messages are generated by the Component Manager (CMGR) system module. The Component Manager system module monitors the system's critical processes and restarts a process if it goes down.

11.3.2 CMGR001

Message Format: CMPMGR_SYSERR System call <*var1*> failed.

Priority: Major or Minor

Explanation of Message: This message indicates that a *UNIX*® Operating System call failed in an unexpected manner.

Variable Fields:<*var1*> identifies the system call that failed.

Action to be Taken: If this condition persists, contact your local maintenance support organization.

11.3.3 CMGR002

Message Format: CMPMGR_SWTBL Unable to <*var1*> row <*var2*> of switch table.

Priority: Minor

Explanation of Message: The Component Manager encountered a failure when accessing the switch table.

Variable Fields:<*var1*> identifies the operation that was attempted, either retrieve or set. <*var2*> identifies the switch table row on which the operation failed.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.3.4 CMGR003

Message Format: CMPMGR_NOADM Unable to obtain value for admin parameter <*var1*>, using default of <*var2*>.

Priority: Minor

Explanation of Message: This message indicates that an error was encountered reading a parameter from the administrative database.

Variable Fields:<*var1*> is the parameter name. <*var2*> is the default value that will be used for that parameter.

Action to be Taken: Using the change admnparm command, attempt to set a value for the parameter name that is specified in the message. If the message continues to occur, contact your local maintenance support organization.

11.3.5 CMGR004

Message Format: CMPMGR_BADADM Admin parameter <*var1*> assigned non-allowed value <*var2*>, using default of <*var3*>.

Priority: Minor

Explanation of Message: This message indicates that an administrative parameter has been assigned an invalid value.

Variable Fields:<*var1*> is the parameter name. <*var2*> is the invalid value. <*var3*> is the default value that will be used for that parameter.

Action to be Taken: Using the change admnparm command, attempt to change the value of the parameter that is specified in the message. If the message continues to occur, contact your local maintenance support organization.

11.3.6 CMGR005

Message Format: CMPMGR_INITFAIL Process initialization failed, exiting.

Priority: Minor

Explanation of Message: The Component Manager failed to initialize. The Data Server is stopped. If this is a duplex system, the processor where this error occurred is stopped, while the other processor should continue to run as active.

Variable Fields: None

Action to be Taken: Reboot the processor where the error occurred. If condition persists, contact your local maintenance support organization.

11.3.7 CMGR007

Message Format: CMPMGR_SIGNAL Unexpected signal received while in state <*var1*>.

Priority: Minor

Explanation of Message: This message indicates that an internal error has occurred within the Component Manager. The Data Server is stopped. If this is a duplex system, the processor where this error occurred is stopped, while the other processor should continue to run as active.

Variable Fields:<*var1*> identifies the current state of the switch interface, stopped, standby, or active.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.3.8 CMGR008

Message Format: CMPMGR_CHILDGONE Continuous component <*var1*> died unexpectedly.

Priority: Minor

Explanation of Message: A process managed by component manager has terminated unexpectedly.

Variable Fields:<*var1*> identifies the process which has terminated.

Action to be Taken: Examine the log for messages from the component which terminated. If condition persists, contact your local maintenance support organization.

11.3.9 CMGR0009

Message Format: CMPMGR_SHUTDOWN Component manager shutting down due to error.

Priority: Minor

Explanation of Message: The component manager has encountered an error causing it to exit. Other log messages will indicate the error.

Variable Fields: None

Action to be Taken: Component manager will either restart on this processor or a status switch will occur.

11.3.10 CMGR010

Message Format: CMPMGR_NOMATCH <*var1*> requested for unknown component, <*var2*>.

Priority: Minor

Explanation of Message: Component manager received a request to perform an action on an unknown component.

Variable Fields:<*var1*> is the action requested for component. <*var2*> is the component identifier.

Action to be Taken: Verify that requests are being made for valid components.

11.3.11 CMGR011

Message Format: CMPMGR_NOPARAM Required parameter <*var1*>missing.

Priority: Minor

Explanation of Message: The component scheduler was activated with a missing parameter.

Variable Fields:<*var1*> identifies the missing parameter.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.4 File Manager (DCNI) Messages

11.4.1 Overview

DCNI messages are generated by the DCNI system module. The DCNI module creates the output files that go to the DPMS.

11.4.2 DCNI003

Message Format: DCNI_DISK_OCC Primary disk occupancy is <*var1*>%.

Priority: Informational, Minor, Major, Critical

Explanation of Message: This message is logged when the percent of the billing storage area occupied by primary data exceeds the Administrative Parameters of amamin, amamaj, or amacrit.

Variable Fields:<*var1*> is percentage of the billing storage area occupied by primary data.

Action to be Taken: Contact the collector operator to schedule a polling session.

11.4.3 DCNI004

Message Format: DCNI_SEQNO_OCC Primary sequence number occupancy is <*var1*>%.

Priority: Informational, Minor, Major, Critical

Explanation of Message: This message is logged when the percent of billing file sequence numbers used by primary files exceeds the Administrative Parameters of amamin, amamaj, or amacrit.

Variable Fields:<*var1*> provides the primary sequence number occupancy percentage.

Action to be Taken: Contact the collector operator to schedule a polling session.

11.4.4 DCNI005

Message Format: DCNI_PRCT Primary billing storage is using <*var1*>% of the available space.

Priority: Minor, Major, Critical

Explanation of Message: This message is logged when the percent of the billing storage area occupied by primary data exceeds the Administrative Parameters amamin, amamaj, or amacrit.

Variable Fields:<*var1*> is percentage of the billing storage area occupied by primary data.

Action to be Taken: Contact the collector operator to schedule a polling session. Primary data needs to be transmitted to the DPMS. Check that transmission is either set to be continuous or is scheduled soon. If transmission is being attempted, but failing, verify the Administrative Parameters related to DDI transmission with the DPMS administrator.

11.4.5 DCNI008

Message Format: DCNI_GENERAL Baseworx Error: <*var1*>.

Priority: Critical

Explanation of Message: An internal error has been encountered.

Variable Fields:<*var1*> identifies where the error was encountered.

Action to be Taken: The Data Server application will stop. If this is a duplex system, the other processor will take over as the active. After the application has stopped, reboot the processor where the error occurred.

11.4.6 DCNI009

Message Format: DCNI_PRIMARY_DONE Created Primary file <*var1*>: Created <*var2*>. Contains <*var3*> records received from switch <*var4*>.

Priority: Informational (Collection log)

Explanation of Message: This message is logged each time a new primary file has been created.

Variable Fields:<*var1*> is the name of the new primary file. <*var2*> is the time at which the file was created. <*var3*> is the number of records in the file. <*var4*> is the number identifying the switch where records originated.

Action to be Taken: None

11.4.7 DCNI010

Message Format: DCNI_REC_NOT_ADDED Could not add a record to the output file (ra_fputrec).

Priority: Informational

Explanation of Message: An error was encountered when attempting to add a record to a new primary file. The record will be lost.

Variable Fields: None

Action to be Taken: None

11.4.8 DCNI011

Message Format: Secondary file <*var1*> removed: Created <*var2*>. Contains <*var3*> records received from switch <*var4*>.

Priority: Informational (Disk Clean Up Log)

Explanation of Message: This message is logged each time a secondary file is removed.

Variable Fields:<*var1*> is the name of the file. <*var2*> is the time at which the file was created. <*var3* > is the number of records in file. <*var4*> is the number identifying switch where records originated.

Action to be Taken: None

11.4.9 DCNI012

Message Format: DCNI_HI_OCCUPANCY Unable to reduce BILLINGDATA occupancy level to <*var1*>, current level = <*var2*>.

Priority: Major

Explanation of Message: After removing all secondary files, there is still less than the desired amount of space for new primary files.

Variable Fields:<*var1*> is desired max occupancy of billing data storage area. <*var2*> is current occupancy of billing data storage area.

Action to be Taken: Primary data needs to be transmitted to the DPMS. Check that transmission is either set to be continuous or is scheduled soon. If transmission is being attempted, but failing, verify the Administrative Parameters related to DDI transmission with the DPMS administrator.

11.4.10 DCNI015

Message Format: Unknown file <*var1*> found moved to <*var2*>.

Priority: Minor

Explanation of Message: The Data Server has created a new primary file, and found a pre-existing file of the same name in the primary directory. The pre-existing file is not listed in the AMADNS file index. The pre-existing file will be moved to the exception directory.

Variable Fields:<*var1*> is the original name of the unknown file which conflicts with the new primary file and <*var2*> is the full path to the exception directory where the unknown file has been stored.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.4.11 DCNI016

Message Format: System call <*var1*> (<*var2*>) failed.

Priority: Minor

Explanation of Message: This message indicates that a *UNIX*® Operating System call failed in an unexpected manner.

Variable Fields:<*var1*> identifies the system call. <*var2*> is the parameter to the system cal.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.4.12 DCNI018

Message Format: No sequence number available for new primary file. File containing <*var1*> records moved to <*var2*>.

Priority: Major

Explanation of Message: An attempt to create a new primary file found no available file sequence number. Normally, this will indicate that all sequence numbers (1 to 65,535) have been assigned to primary files. Alternatively, this may indicate an error in the AMADNS file index which tracks sequence numbers. Since no sequence number is available for the file name, the file cannot become primary. Instead, the file is moved to the exception directory.

Variable Fields:<*var1*> is the number of records in the file and <*var2*> is the full path to exception directory location where the file has been stored.

Action to be Taken: Determine if all sequence numbers are in use by primary files (use dis-bfs;). If so, a transmission session must occur to free up sequence numbers for new primary files. If not, use audit-index to attempt to clean up the AMADNS file index. Product support will be able to recover the billing files moved to the exception directory once sequence numbers are made available.

11.4.13 DCNI019

Message Format: Error transitioning primary to secondary. File moved to <*var1*>.

Priority: Minor

Explanation of Message: An error was encountered transitioning a primary file that was just transmitted to the secondary state. The file will be moved to the exception directory.

Variable Fields: Full path to exception directory location where the file has been stored.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.4.14 DCNI020

Message Format: Audit process begins.

Priority: Informational

Explanation of Message: Audit of the File Index has started. The AMADSN File Index tracks all files stored on the system.

Variable Fields: None

Action to be Taken: None

11.4.15 DCNI021

Message Format: Audit process has completed.

Priority: Informational

Explanation of Message: Audit of the File Index has completed.

Variable Fields: None

Action to be Taken: None

11.4.16 DCNI022

Message Format: Information for file <*var1*> changed. Previous state = <*var2*>, new state = <*var3*>.

Priority: Informational (Audit Log)

Explanation of Message: Audit of the File Index has found an inconsistency, and the index has been corrected.

Variable Fields:<*var1*> names the file for which the index had incorrect information. <*var2*> identifies the state of the file which had been recorded in the index. The file state is NO_FILE, PRIMARY, or SECONDARY. <*var3*> is the correct file state.

Action to be Taken: None

11.4.17 DCNI023

Message Format: File <*var1*> (<*var2*>), moved to <*var3*>.

Priority: Informational (Audit Log)

Explanation of Message: Audit of the File Index has found a file which was stored in the wrong directory. The audit has moved the file to the correct directory.

Variable Fields:<*var1*> is the name of file. <*var2*> is the state of file (PRIMARY, or SECONDARY). <*var3*> is the directory the file is moved to.

Action to be Taken: None

11.5 Receiver-Initiated DDI (DDS) Messages

11.5.1 Overview

DDS messages are generated by the receiver-initiated DDI feature.

11.5.2 DDS001

Message Format: SW_TROUBLE polling process invoked with invalid options for NE <*var1*>.

Priority: Major

Explanation of Message: Invalid arguments were part of an FTP command sent by network element (NE) <*var1*>. An example is the Change Working Directory (CWD) command; only primary or secondary arguments are supported for this command.

Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system.

Action to be Taken: Verify that the NE <*var1*> is administered to send the proper FTP command arguments. Examine the FTP commands and responses sent between the two systems.

11.5.3 DDS002

Message Format: SW_TROUBLE NE <*var1*>: Data Collection process internal error.

Priority: Major

Explanation of Message: FTP session terminated because of a variety of possible internal errors. Examples are the inability to open a data connection for data transfer or the transfer of data failed. In addition, this system may have received an invalid FTP command from NE <*var1*> or an unexpected rename command (RNFR/RNTO) was received.

Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system.

Action to be Taken: This system supports an administrable parameter to optionally use rename commands as a confirmation step prior to committing successfully transferred files to secondary storage. Verify that both this system and the FTP client (network element <*var1*>) are both administered to use rename commands for this purpose. If everything appears to administered properly and this error is still occurring, please contact the maintenance support organization.

11.5.4 DDS003

Message Format: SW_TROUBLE: Session connect/accept sequence failed for NE <*var1*>.

Priority: Major

Explanation of Message: This system may be unable to create or open a socket for data transmission. In addition, it is possible that NE <*var1*> has not been administered as a valid DPMS on this system.

Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system.

Action to be Taken: Verify that NE <*var1*> is in the DPMS table and that its TCP/IP address has been properly administered. If this appears to be done properly and the error persists, please contact the maintenance support organization.

11.5.5 DDS004

Message Format: Session established with NE <*var1*>.

Priority: Informational

Explanation of Message: NE <*var1*> has successfully established an FTP connection to this system.
Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system.

Action to be Taken: None.

11.5.6 DDS005

Message Format: Session with NE <*var1*> is terminating.

Priority: Informational

Explanation of Message: The FTP connection between this system and NE <*var1*> was terminated normally.

Variable Fields:<*var1*> is the name of network element (DPMS) that was connected to this system.

Action to be Taken: None

11.5.7 DDS006

Message Format: Session Abort succeeded for NE <*var1*>.

Priority: Informational

Explanation of Message: The FTP connection between this system and NE <*var1*> was terminated normally.

Variable Fields:<*var1*> is the name of Network Element (DPMS) that was connected to this system.

Action to be Taken: None

11.5.8 DDS007

Message Format: SW_TROUBLE NE <*var1*><*var2*>.

Priority: Major

Explanation of Message: An FTP interface error has occurred between this system and NE <*var1*>. One example is that the FTP client (NE <*var1*>) failed to rename an AMADNS file after successful transmission, which means the file was not committed to secondary storage. Another example is that NE <*var1*> is using invalid FTP commands.

Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system. <*var2*> provides additional information about the problem.

Action to be Taken: Verify that this system and NE <*var1*> are in agreement on whether the FTP client (NE <*var1*>) should rename files after successful transmission as a confirmation step.

11.5.9 DDS008

Message Format: SW_TROUBLE <*var1*>.

Priority: Major or Minor

Explanation of Message: An error occurred during the login/password confirmation step of establishing an FTP connection between the FTP client and this system.

Variable Fields:<*var1*> provides information about the problem.

Action to be Taken: Verify that the FTP login and password match on both this system and the FTP client. Also verify that the FTP client is administered in the DPMS table and that its TCP/IP address is correct.

11.5.10 DDS009

Message Format: SW_TROUBLE rename of temp file for NE <*var1*> failed <*var2*>.

Priority: Major

Explanation of Message: A protocol error has occurred between the FTP client (NE <*var1*>) and this system.

Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system. <*var2*> provides additional information about the protocol error.

Action to be Taken: Contact the maintenance support organization for this product and DPMS vendor.

11.5.11 DDS010

Message Format: SW_TROUBLE NE <*var1*><*var2*>.

Priority: Major

Explanation of Message: A data connection or data transfer problem has occurred between the FTP client (NE <*var1*>) and this system.

Variable Fields:<*var1*> is the name of network element (DPMS) that has connected to this system. <*var2*> provides additional information about the problem.

Action to be Taken: Contact the maintenance support organization.

11.6 Formatter (FMTR) Messages

11.6.1 Overview

FMTR messages are generated by the Formatter system module. The Formatter module formats billing data into a format different from the format originally received from the switch.

11.6.2 FMTR100

Message Format: Requested transition from [<*var1*>, <*var2*>] to [<*var3*>, <*var4*>] ignored.

Priority: Informational

Explanation of Message: This message indicates that the FMTR module was requested to transition to the mode and operating configuration that it is already in. This type of request is ignored.

Variable Fields:<*var1*> and <*var2*> indicate the current mode and operating configuration. <*var3*> and <*var4*> indicate the requested mode and operating configuration.

Action to be Taken: Contact your local maintenance support organization.

11.6.3 FMTR101

Message Format: Found <*var*> aggregation or time change file(s) at start-up.

Priority: Informational

Explanation of Message: This message indicates that there were unprocessed files found when the FMTR module transitioned to the active state. This is a normal part of system recovery after a failure. The files will be sent through the system for processing and will be written to disk.

Variable Fields:<*var*> is the number of files found.

Action to be Taken: None

11.6.4 FMTR102

Message Format: Record count for auditing purposes is not available.

Priority: Minor

Explanation of Message: This message indicates that it may not be possible to compare the number of records processed with number of records that were expected. This message is most likely to be generated when the system is performing a self-recovery procedure.

Action to be Taken: Contact your local maintenance support organization.

11.6.5 FMTR103

Message Format:<*var1*> signal received while in <*var2*> state.

Priority: Minor

Explanation of Message: This message indicates that an unexpected signal was received.

Variable Fields:<*var1*> indicates the type of signal. <*var2*> is the state the process was in when it received the signal.

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.6.6 FMTR200

Message Format: Error formatting or accessing formatted data.

Priority: Major

Explanation of Message: This message indicates that there was an error in processing incoming billing data.

Variable Fields: None

Action to be Taken: Use the display log command to check for related output messages. If this message occurs repeatedly, contact your local maintenance support organization.

11.6.7 FMTR201

Message Format: Processing failed due to internal error.

Priority: Major

Explanation of Message: This message indicates that there was an error in processing incoming billing data.

Variable Fields: None

Action to be Taken: Use the display log command to check for related output messages. If this message occurs repeatedly, contact your local maintenance support organization.

11.6.8 FMTR202

Message Format: More than <*var*> records in file.

Priority: Major

Explanation of Message: This message indicates that there was an error in processing incoming billing data.

Variable Fields:<*var*> is the number of records that were expected in the file.

Action to be Taken: Use the display bfs command to determine which blocks were most recently written to disk. Use the display billblk command to check validity of the recent data that is being formatted and written to disk. If an explanation for the error is not found, contact your local maintenance support organization.

11.6.9 FMTR203

Message Format: Missing environment variable.

Priority: Critical

Explanation of Message: This message indicates that there was an error in processing incoming billing data.

Variable Fields: None

Action to be Taken: Contact your local maintenance support organization.

11.6.10 FMTR210

Message Format: Formatting failed for <*var1*> records from switch <*var2*>.

Priority: Minor

Explanation of Message: This message indicates that the Data Server was unable to format a group of records received from the switch. This file of input records will be discarded.

Variable Fields:<*var1*> specifies the number of records which failed to format. <*var2*> specifies the switch from where the records originated.

Action to be Taken: Other error messages will provide more details on the specific reason the file could

not be formatted.

11.6.11 FMTR301

Message Format:<*var*> records lost

Priority: Informational

Explanation of Message: This message indicates that there was an error in processing incoming billing data. This informational message is generated after an alarm.

Variable Fields:<*var*> provides the number of records lost due to an error that was encountered during processing. If the count of expected number of records to process is unavailable, <*var*> is "Unknown number of". Unavailable record counts should only occur during system recovery.

Action to be Taken: Check for related alarm messages that have been generated recently. Follow the instructions provided with the related messages.

11.6.12 FMTR400

Message Format: Cannot read <*var*> from database; using default value.

Priority: Minor

Explanation of Message: This message indicates that there was an error accessing the administrative database.

Variable Fields:<*var*> is the name of the administrative parameter.

Action to be Taken: Use the change admnparm command to set the parameter to its correct value. Use the verify admnparm command to verify that the value is set. If this condition persists, then contact your local maintenance support organization.

11.6.13 FMTR401

Message Format: Invalid <*var*> parameter detected, using default value.

Priority: Minor

Explanation of Message: This message indicates that the value received from the change admnparm command or the value stored in the administrative database is invalid.

Variable Fields:<*var*> is the name of the administrative parameter.

Action to be Taken: Use the change admnparm command to set parameter to its correct value. Use the verify admnparm command to verify that the value is set. If this condition persists, then contact your local maintenance support organization.

11.6.14 FMTR402

Message Format:<*var1*> parameter has been changed from <*var2*> to <*var3*>.

Priority: Informational

Explanation of Message: This message indicates that the value of an administrative parameter has been changed using the change admnparm command.

Variable Fields:<*var1*> is the name of the administrative parameter that was changed. <*var2*> is the value that was previously stored in the administrative database. <*var3*> is the new value in the database.

Action to be Taken: None

11.6.15 FMTR403

Message Format: System is transitioning to validation mode. New billing data will be marked as test data.

Priority: Informational

Explanation of Message: This message indicates that the amavalid administrative parameter has been set to no. Billing data sent to the collector will be marked as test data. This feature is generally only used when a new system has been installed or a new generic of software has been loaded. This allows the system to be tested without actually generating billing data at the RAO.

Action to be Taken: Use the change admnparm amavalid command to change the value to yes when the system test period is finished.

11.6.16 FMTR404

Message Format: System is still in validation mode. Billing data is still being marked as test data.

Priority: Informational

Explanation of Message: These messages are generated approximately every hour as a reminder that the billing data from the system is being marked as test data.

Action to be Taken: Use the change admnparm amavalid command to change the value to yes when the system test period is finished.

11.6.17 FMTR405

Message Format: System is transitioning from validation mode to live. Billing data is no longer being marked as test data.

Priority: Informational

Explanation of Message: These messages indicate that the amavalid administrative parameter has been set to yes.

Action to be Taken: None

11.6.18 FMTR500

Message Format: Record count exceeded threshold.

Priority: Major or Minor

Explanation of Message: This message is generated with a minor priority if the number of records processed or the number of records lost exceeds 1701. If the record count exceeds 10,001, this message is generated as a major alarm. This message does not indicate a loss of billing data.

Action to be Taken: If your system is exceeding the recommended capacity limits, then action should be taken to reconfigure the system with additional Data Server units. Otherwise, contact your local maintenance support organization.

11.6.19 FMTR501

Message Format: Invalid record count ignored.

Priority: Critical

Explanation of Message: The message indicates that a record count greater than 20,001 was received. This record count is assumed to be incorrect and the record count is ignored. This message does not indicate a loss of billing data.

Action to be Taken: If your system is exceeding the recommended capacity limits, then action should be taken to reconfigure the system with additional Data Server units. Otherwise, contact your local maintenance support organization.

11.7 DDI File Transmission (FX) Messages

11.7.1 Overview

FX messages may be generated by the FX system module. This module monitors the status of the FTP connection to the DPMS.

11.7.2 FX0001

Message Format: FX_NOSUCHRAO SW_TROUBLE The DPMS does not exist.

Priority: Major

Explanation of Message: DDI transmission was unable to access DPMS information from the database.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.3 FX0002

Message Format: FX_BADARGS SW_TROUBLE File transfer process invoked with invalid options.

Priority: Major

Explanation of Message: DDI transmission was started with incorrect arguments.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.4 FX0003

Message Format: FX_SIG SW_TROUBLE <*var1*> File transfer process initialization failed.

Priority: Major

Explanation of Message: DDI transmission failed to initialize.

Variable Fields:<*var1*> is the initialization step that failed.

Action to be Taken: Contact Product Support.

11.7.5 FX0004

Message Format: FX_OBJNEW SW_TROUBLE Could not allocate memory.

Priority: Major

Explanation of Message: DDI transmission process was unable to allocate additional memory.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.6 FX0005

Message Format: FX_NODATA No data available to send to DPMS.

Priority: Informational

Explanation of Message: The DDI transmission process was started, but no data was available to transmit. Normally, the DDI transmission process is only started when there is data available to transfer.

Variable Fields: None

Action to be Taken: None

11.7.7 FX0006

Message Format: FX_WRKLIST SW_TROUBLE Could not set up list of files to transfer to DPMS.

Priority: Major

Explanation of Message: An internal error prevented the DDI transmission process from building the list of files to transfer. The current transmission session will fail.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.8 FX0007

Message Format: FX_SIGCGHT SW_TROUBLE Processing for DPMS terminated abnormally.

Priority: Major

Explanation of Message: An internal processing error caused the termination of the DDI transmission process.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.9 FX0008

Message Format: FX_NORAO SW_TROUBLE Name parameter missing.

Priority: Major

Explanation of Message: A start-up error caused the DDI transmission process to fail.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.10 FX0009

Message Format: FX_NOFILES SW_TROUBLE Work list file parameter missing.

Priority: Major

Explanation of Message: A start-up error caused the DDI transmission process to fail.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.11 FX0010

Message Format: FX_DBREAD SW_TROUBLE Could not get DPMS from the database.

Priority: Major

Explanation of Message: DDI transmission was unable to access DPMS information from the database.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.12 FX0015

Message Format: FX_COMMIT SW_TROUBLE Could not commit <*var1*> after transfer.

Priority: Major

Explanation of Message: After transmission of a file to the DPMS, DDI transmission was unable to convert the file to secondary.

Variable Fields:<*var1*> is file name.

Action to be Taken: Contact Product Support. Duplicate data may be sent to DPMS if primary file commit fails.

11.7.13 FX0016

Message Format: FX_CONNFAIL SW_TROUBLE Could not connect to DPMS.

Priority: Major

Explanation of Message: An attempt to connect to the DPMS failed.

Variable Fields: None

Action to be Taken: Check and correct as necessary ddi_hostname in Section 4.2 , "Administrative Parameters". Also check and correct as necessary network information for the hostname, see Chapter 7 , "Network Administration".

11.7.14 FX0017

Message Format: FX_LOGNFAIL SW_TROUBLE Login sequence failed for DPMS.

Priority: Major

Explanation of Message: The DDI transmission process failed login at the DPMS.

Variable Fields: None

Action to be Taken: Check and correct as necessary ddi_login and ddi_password in Section 4.2 , "Administrative Parameters".

11.7.15 FX0018

Message Format: FX_UNREACH SW_TROUBLE Remote host unreachable.

Priority: Major

Explanation of Message: Under the current network configuration, the DPMS is unreachable.

Variable Fields: None

Action to be Taken: Have network administrator verify network address of DPMS and routing table information. Also, if routers are used between the Data Server and the DPMS, their configuration should be checked.

11.7.16 FX0019

Message Format: FX_RMTOPEN SW_TROUBLE Could not open temporary file for <*var1*> on DPMS.

Priority: Major

Explanation of Message: Although a connection was successfully established to the DPMS, transfer of the billing file was not allowed.

Variable Fields:<*var1*> is the name of billing file.

Action to be Taken: Contact administrator of DPMS. The most common reasons for this error is that the DPMS receiving file system is full, or permissions at the DPMS do not allow file transfer.

11.7.17 FX0020

Message Format: FX_TRANSBUF SW_TROUBLE Could not allocate transfer buffer for DPMS.

Priority: Major

Explanation of Message: DDI transmission was unable to allocate the memory required to transmit a billing file to the DPMS.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.7.18 FX0021

Message Format: FX_BILLFOPEN SW_TROUBLE Could not open file <*var1*> for transfer to DPMS.

Priority: Major

Explanation of Message: DDI transmission was unable to access a billing file ready for transmission to the DPMS.

Variable Fields:<*var1*> is the name of the billing file.

Action to be Taken: Contact Product Support.

11.7.19 FX0022

Message Format: FX_DMREAD SW_TROUBLE Could not read file <*var1*> for DPMS.

Priority: Major

Explanation of Message: DDI transmission was unable to read a billing file ready for transmission to the DPMS.

Variable Fields:<*var1*> is the name of the billing file.

Action to be Taken: Contact Product Support.

11.7.20 FX0023

Message Format: FX_RMTWRITE SW_TROUBLE Could not write data for file <*var1*> to DPMS.

Priority: Major

Explanation of Message: DDI transmission was unable to write a billing file at the DPMS.

Variable Fields:<*var1*> is the name of the billing file.

Action to be Taken: Contact DPMS administrator.

11.7.21 FX0024

Message Format: FX_RENAME SW_TROUBLE Could not rename data file to <*var1*> on DPMS.

Priority: Major

Explanation of Message: DDI transmission sends billing files to the DPMS under a temporary name. Upon completion of transfer, it renames the file to its permanent name. This error indicates that the rename operation failed.

Variable Fields:<*var1*> is the final name of the billing file.

Action to be Taken: Contact DPMS administrator.

11.7.22 FX0025

Message Format: FX_CONNECT Session established with DPMS.

Priority: Informational

Explanation of Message: DDI transmission has established a session with the DPMS.

Variable Fields: None

Action to be Taken: None

11.7.23 FX0026

Message Format: FX_CONNCLSE Session with DPMS complete.

Priority: Informational

Explanation of Message: The transmission session has completed.

Variable Fields: None

Action to be Taken: None

11.7.24 FX0027

Message Format: FX_CONNTEST Test Session with DPMS complete.

Priority: Informational

Explanation of Message: A test transmission session has completed.

Variable Fields: None

Action to be Taken: None

11.7.25 FX0028

Message Format: FX_CONNGRC Session with DPMS canceled gracefully.

Priority: Informational

Explanation of Message: DDI transmission has been gracefully canceled.

Variable Fields: None

Action to be Taken: None

11.7.26 FX0029

Message Format: FX_FILESENT Session with DPMS complete; <*var1*> file(s) sent.

Priority: Informational

Explanation of Message: This message specifies the number of files that were sent to the DPMS during a polling session.

Variable Fields:<*var1*> is the number of files sent.

Action to be Taken: None

11.7.27 FX0030

Message Format: FX_NONESENT No data was sent to DPMS.

Priority: Informational

Explanation of Message: DDI transmission session has terminated without any files being transmitted to the DPMS.

Variable Fields: None

Action to be Taken: None

11.7.28 FX0031

Message Format: FX_RMTOOS DPMS: Remote file system out of space.

Priority: Major

Explanation of Message: An attempt to transmit files to the DPMS has failed due to a lack of space at the

DPMS.

Variable Fields: None

Action to be Taken: Ask remote system administrator to clean up disk.

11.7.29 FX0032

Message Format: FX_IMMTERM Session with DPMS terminated immediately.

Priority: Informational

Explanation of Message: DDI transmission has been terminated.

Variable Fields: None

Action to be Taken: None

11.7.30 FX0033

Message Format: Transmitted <*var1*> file <*var2*> to DPMS <*var3*>: Created <*var4*>. Contains<*var5*> records received from switch<*var6*>.

Priority: Informational (Transmission Log)

Explanation of Message: This message is logged each time a file is transmitted to the DPMS.

Variable Fields:<*var1*> is the file state (Primary, or Secondary).
<*var2*> is the name of the file transmitted.
<*var3*> is the name of the DPMS the file was transmitted to.
<*var4*> is the time when the file was created.
<*var5*> is the number of records in the file.
<*var6*> identifies the switch where records in the file originated.

Action to be Taken: None

11.8 GRID (GR) Messages

11.8.1 Overview

GRID refers to messages referencing Generic Record Identification.

NOTE: GRID messages are not numbered, so they are alphabetized by mnemonic.

11.8.2 GR_APPIDFAIL

Message Format: Could not get Application Manager records from database for Billing Entity <*name*>, File Format <*name*>.

Explanation of Message: Unable to get Application IDs associated with this Consumer ID and File Format.

Action to be Taken: Contact the System Administrator to check the database values for the Application Manager. Check database to make sure entries exist.

11.8.3 GR_ APPLICATION SW_TROUBLE

Message Format: GRID Application <*string*> error, tracer record <*number*> not defined in GRID for NE

<*name*> and Biller <*name*>.

Action to be Taken: Contact the System Administrator. It is necessary to add the tracer record to the GRID definitions.

11.8.4 GR_DBERROR GRID ABORT

Message Format: Failed to connect to database.

Explanation of Message: An attempt to connect to the Informix database failed. A more specific reason may be determined by examination of trace output.

Action to be Taken: Verify the status of the Informix database, and that it is available for access.

11.8.5 GR_ENVVAR GRID ABORT

Message Format: Failed to get environment variable: <*string*>.

Action to be Taken: If this is in response to a command, log off and log back in then retry the command; otherwise contact the System Administrator.

11.8.6 GR_FUNCTION_F

Message Format: GRID Function: <*string*> failed completion for: <*string*>.

Action to be Taken: Contact the System Administrator.

11.8.7 GR_LINK_F GRID ABORT

Message Format: Failed to link input file: <*name*> to output file: <*name*>.

Action to be Taken: Contact the System Administrator. Check that the file system has ample space to create the link. Also check for a file of the same name that does not have proper write permissions.

11.8.8 GR_LOGABORT GRID ABORT

Message Format:<*string*>, input file: <*name*>, error offset: <*number*>, record count: <*number*>, error count: <*number*>.

Explanation of Message: This error message indicates various problems encountered when reading records from files.

Action to be Taken: Contact the System Administrator.

11.8.9 GR_ MALLOCERROR GRID ERROR

Message Format: Failed malloc or realloc with size: <*number*>.

Explanation of Message: This error message indicates that additional memory could not be allocated for this process. This may indicate that the system needs additional memory, or that too much simultaneous activity is taking place on the system.

Action to be Taken: Contact the System Administrator.

11.8.10 GR_NOAUDIT

Message Format:<*string*> audit file <*name*> does not exist. Required by Billing Entity <*name*>, file format <*name*>.

Action to be Taken: Contact the System Administrator to check the database values for the Application Manager.

11.8.11 GR_OBJECT GRID Application

Message Format:<*string*> Object: <*string*> Failed to allocate space for <*string*><*string*>.

Action to be Taken: Contact the System Administrator.

11.8.12 GR_ ONEAPPTYPE

Message Format: More than one <*string*> type (ID <*name*>) is setup for Billing Entity <*name*>, file format <*name*> (only one <*name*> application type is allowed).

Action to be Taken: Contact the System Administrator to check the database values for the Application Manager.

11.8.13 GR_OPENERROR GRID ABORT

Message Format: Could not open file: <*name*>.

Action to be Taken: Contact the System Administrator. Check that the file exists and has permissions that allow it to be accessed.

11.8.14 GR_PROCESS_F

Message Format: GRID Process: <*string*> failed completion for file format: <*name*>.

Action to be Taken: Contact the System Administrator.

11.8.15 GR_READERROR GRID ERROR

Message Format: Could not read from file.

Explanation of Message: An error occurred while reading a file. Trace output may indicate the source of the problem.

Action to be Taken: Contact the System Administrator.

11.8.16 GR_SEARCH1 GRID

Message Format: Application: <*string*> Failed to obtain searchParmID from file <*name*>.

Action to be Taken: Contact the System Administrator.

11.8.17 GR_ SEARCH COMMIT GRID ABORT

Message Format: Application: <*string*> Could not commit work for searchParmID: <*name*>.

Action to be Taken: Contact the System Administrator. Trace output may indicate the source of the problem.

11.8.18 GR_STATFAIL

Message Format: Could not access <*name*> audit file <*string*>.

Explanation of Message: The stat command was run on the audit file and it failed.

Action to be Taken: Contact the System Administrator. Check that the file exists and its permissions allow it to be read. Trace output may indicate the source of the problem.

11.8.19 GR_ UNKNOWNAPP

Message Format: Unknown application type <*string*> (ID <*string*>) for Billing Entity <*name*>, file format <*name*>.

Action to be Taken: Contact the System Administrator to check the database values for the Application Manager.

11.8.20 GR_ WRITEERROR GRID ERROR

Message Format: Could not write to file.

Action to be Taken: Contact the System Administrator. Check that the file exists and that its permissions allow it to be overwritten.

11.9 Link Handler (LH) Messages

11.9.1 Overview

LH refers to messages referencing various link handler software. The link handler software handles the collection of data from the various types of network elements.

NOTE:

- LH0001 through LH0010 are shared messages.
- LH0011 through LH0048 are AMATPS link handler specific messages.
- LH0049 through LH00 are HICAP link handler specific messages.

11.9.2 LH0001

Message Format: LH_NONEDB SW_TROUBLE Could not get NE <*var1*> from the database.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Make sure the network element is defined in the network element database.

11.9.3 LH0002

Message Format: LH_NONENAME SW_TROUBLE polling process requires NE name to be given.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.9.4 LH0003

Message Format: LH_BADARGS SW_TROUBLE polling process invoked with invalid options for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.5 LH0004

Message Format: LH_BADMSG SW_TROUBLE Invalid poll type.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.9.6 LH0005

Message Format: LH_SIGTERM Polling session terminated immediately for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

11.9.7 LH0006

Message Format: LH_SIGUSR1 Polling session terminated gracefully for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.8 LH0007

Message Format: LH_PRIPOLL Primary poll established for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.9 LH0008

Message Format: LH_SECPOLL Secondary poll established for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.10 LH0009

Message Format: LH_TSTPOLL Test poll established for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.11 LH0010

Message Format: LH_DISKFULL File system for <*var1*> nearly full.

Variable Fields:<*var1*> is the name of the file system.

11.9.12 LH0011

Message Format: LH_INVAPROTO SW_TROUBLE NE <*var1*> Invalid protocol <*var2*> for AMATPS polling.

Variable Fields:<*var1*> is the name of the network element. <*var2*> is name of protocol.

Action to be Taken: Make sure NEPROTOCOL field is not FTAMX25 in network database.

11.9.13 LH0012

Message Format: LH_NODEVNM SW_TROUBLE: polling request for NE <*var1*> requires the device configuration file name.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.14 LH0013

Message Format: LH_NOPOLLTP SW_TROUBLE: polling request for NE <*var1*> requires specification of the polling type.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.15 LH0014

Message Format: LH_NOSTSEQ SW_TROUBLE: secondary polling request for NE <*var1*> requires the starting block sequence number.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.16 LH0015

Message Format: LH_INVNUMBLK SW_TROUBLE: secondary polling request for NE <*var1*> requires the number of blocks to be polled.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.17 LH0016

Message Format: LH_INVNUMFIL SW_TROUBLE: test file exchange request for NE <*var1*> requires the number of test exchanges.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.18 LH0017

Message Format: LH_OPENDCF SW_TROUBLE: Open of device configuration file for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.19 LH0018

Message Format: LH_NODCFVAR SW_TROUBLE: Device configuration file variable for NE <*var1*> not set.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.20 LH0019

Message Format: LH_INVAMPROTO SW_TROUBLE: NE <*var1*> Invalid protocol <*var2*> for AMATPS polling.

Variable Fields:<*var1*> is the name of the network element. <*var2*> is name of protocol.

Action to be Taken: Contact System Administrator to make sure NEPROTOCOL field is set to AMATPSX25 in the network element database.

11.9.21 LH0020

Message Format: LH_CONNFAIL SW_TROUBLE: Session connect/accept sequence failed for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator if connect attempts continue to fail for this network element.

11.9.22 LH0021

Message Format: LH_CONNSUCC Session established with NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.23 LH0022

Message Format: LH_TERM Session with NE <*var1*> is terminating.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.24 LH0023

Message Format: LH_DISCFAIL SW_TROUBLE: Normal Session disconnect failed for NE <*var1*>.

Action to be Taken: Contact System Administrator.

11.9.25 LH0024

Message Format: LH_ABORTFAIL SW_TROUBLE: Session abort failed for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.26 LH0025

Message Format: LH_DISCSUCC Normal Session disconnect succeeded for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.27 LH0026

Message Format: LH_ABORTSUCC Session Abort succeeded for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.28 LH0027

Message Format: LH_TSTCANC Test data link canceled for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.29 LH0028

Message Format: LH_TSTFAIL SW_TROUBLE: Test data link failed for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.30 LH0029

Message Format: LH_TSTSUCC Test data link completed <*var1*> successful cycles for NE <*var1*>.

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.31 LH0030

Message Format: LH_BADRTN SW_TROUBLE: Polling function returned an unexpected value for NE

<*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support.

11.9.32 LH0031

Message Format: LH_BDFILE SW_TROUBLE: File contains corrupted data for NE <*var1*>, file rejected.

Explanation of Message: Invalid file size.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator to notify the network element system administrator of the problem.

11.9.33 LH0032

Message Format: LH_BDRCD SW_TROUBLE: Block <*var1*> contains corrupted data for NE <*var2*>, skipping block.

Explanation of Message: RDW size for record places the end of the record past the end of the block.

Variable Fields:<*var1*> is the block number. <*var2*> is the name of the network element.

Action to be Taken: Contact System Administrator to notify the network element system administrator of the problem.

11.9.34 LH0033

Message Format: LH_BDNUMRCD SW_TROUBLE: Block <*var1*> contains corrupted data for NE <*var2*>, skipping block.

Explanation of Message: The number of records field in the block header is set to 0.

Variable Fields:<*var1*> is the block number. <*var2*> is the name of the network element.

Action to be Taken: Contact System Administrator to notify the network element system administrator of the problem.

11.9.35 LH0034

Message Format: LH_BLKSIZ SW_TROUBLE: Block <*var1*> contains corrupted data for NE <*var2*>.

Explanation of Message: Block size in header is an invalid value.

Variable Fields:<*var1*> is the block number. <*var2*> is the name of the network element.

Action to be Taken: Contact System Administrator to notify the network element system administrator of the problem.

11.9.36 LH0035

Message Format: LH_POLPRIFL SW_TROUBLE: Primary file poll for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.37 LH0036

Message Format: LH_ACKFL SW_TROUBLE: File poll for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.38 LH0037

Message Format: LH_UNEXPAPI SW_TROUBLE: Processing data in file for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.39 LH0038

Message Format: LH_POLSECFL SW_TROUBLE: Secondary file poll for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.40 LH0039

Message Format: LH_NODATA File poll for NE <*var1*> successful, requested data not available

Priority: Informational

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: None

11.9.41 LH0040

Message Format: LH_WORKTST SW_TROUBLE: File poll for NE <*var1*> failed, unable to create working disk file, file already exists.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.42 LH0041

Message Format: LH_WORKCRT SW_TROUBLE: File poll for NE <*var1*> failed, unable to create working disk file.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.43 LH0042

Message Format: LH_WORKSV SW_TROUBLE: File poll for NE <*var1*> failed, unable to save data in working disk file.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.44 LH0043

Message Format: LH_THRESH Primary polling threshold for NE <*var1*> exceeded, polling session terminating gracefully.

Variable Fields:<*var1*> is the name of the network element.

11.9.45 LH0044

Message Format: LH_WRONGBLK SW_TROUBLE: Received block <*var1*> when expecting block <*var2*> for NE <*var3*>.

Variable Fields: .<*var1*> and <*var2*> are block numbers. <*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator to notify the NE System Administrator of the problem.

11.9.46 LH0045

Message Format: LH_RCVFREJ Received file reject message from NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

11.9.47 LH0046

Message Format: LH_RCVFREJN Received file reject from NE <*var1*>, next block available <*var2*>.

Variable Fields:<*var1*> is the name of the network element.<*var12*> is next available block number.

11.9.48 LH0047

Message Format: LH_RCVPBLKS Received blocks <*var1*> to <*var2*> from NE <*var3*>

Variable Fields:<*var1*> and <*var2*> are block numbers. <*var3*> is the name of the network element.

11.9.49 LH0048

Message Format: LH_RCVSBLKS Received secondary file containing blocks <*var1*> to <*var1*> from NE <*var1*>.

Variable Fields:<*var1*> and <*var2*> are block numbers. <*var3*> is the name of the network element.

11.9.50 LH0049

Message Format: LH_CONRPCFL HW_TROUBLE: Connection attempt to the NE <*var1*> RPC server failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.51 LH0050

Message Format: LH_RSETRPCFL SW_TROUBLE: Attempt to reset the NE <*var1*> RPC server failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.52 LH0051

Message Format: LH_CONNFAILHC SW_TROUBLE: Session connect accept sequence failed for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator if connect attempts continue to fail for this network element.

11.9.53 LH0052

Message Format: LH_ACKFLHC SW_TROUBLE: File poll for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.54 LH0053

Message Format: LH_POLPRIFLHC SW_TROUBLE: Primary file poll for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.55 LH0054

Message Format: LH_POLSECFLHC SW_TROUBLE: Secondary file poll for NE <*var1*> failed.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.56 LH0055

Message Format: LH_TSTFAILHC SW_TROUBLE: Test data link failed for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact System Administrator.

11.9.57 LH0056

Message Format: LH_SIGOTHER SW_TROUBLE Polling session abnormally terminated for NE <*var1*>.

Variable Fields:<*var1*> is the name of the network element.

Action to be Taken: Contact Product Support if necessary.

11.9.58 LH0057

Message Format: LH_SWTBL Unable to access row <*var1*> of switch table.

Priority: Minor

Explanation of Message: The switch interface encountered a failure when accessing the switch table.

Variable Fields:<*var1*> identifies the switch table row on which the access failed.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.9.59 LH0058

Message Format: LH_NODE Unable to associate switch interface with node <*var1*>.

Priority: Minor

Explanation of Message: The switch interface was unable to select the specified node.

Variable Fields:<*var1*> identifies the node by name.

Action to be Taken: Compare the Data Server switch table and ASM node table for consistency. Correct any inconsistencies found by use of the Data Server switch commands.

11.10 Library (LIB) Messages

11.10.1 Overview

LIB messages refer to various software library functions. This software handles various functions throughout the system.

11.10.2 LIB0005

Message Format: Switch interface unable to <*var1*> row <*var2*>of switch table.

Priority: Minor

Explanation of Message: The switch interface encountered a failure when accessing the switch table.

Variable Fields:<*var1*> identifies the operation that was attempted, either retrieve or set. <*var2*> identifies the switch table row on which the operation failed.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.11 MML Interface (MMLI) Messages

11.11.1 Overview

MMLI messages may be generated by the MML Interface (MMLI) system module. The MML Interface module interprets Data Server input commands as they are entered.

11.11.2 MMLI001

Message Format: MMLI_LOGIN User <*var1*> logged in.

Priority: Informational

Explanation of Message: This message is generated each time a user or administrator logs into the system.

Variable Fields:<*var1*> identifies the login ID that was used.

Action to be Taken: None

11.11.3 MMLI002

Message Format: MMLI_LOGOUT User <*var1*> logged out.

Priority: Informational

Explanation of Message: This message is generated each time a user or administrator logs out of the system.

Variable Fields:<*var1*> identifies the login ID.

Action to be Taken: None

11.11.4 MMLI003

Message Format: MMLI_EXEC Execution of <*var1*> by user <*var2*> complete.

Priority: Informational

Explanation of Message: This message is generated each time a user or administrator enters a Data Server command.

Variable Fields:<*var1*> is the command. <*var2*> identifies the login ID of the person who entered the command.

Action to be Taken: None

11.11.5 MMLI004

Message Format: MMLI_ENV Unable to access environment variable.

Priority: Major

Explanation of Message: This message indicates that the MMLI module was unable to determine the value of a critical environment variable.

Variable Fields: None

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.11.6 MMLI005

Message Format: MMLI_CD Unable to change directory to <*var1*>.

Priority: Minor

Explanation of Message: This message indicates that the MMLI module was unable to change directories. This may indicate a system error.

Variable Fields:<*var1*> is the name of the directory.

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.11.7 MMLI006

Message Format: MMLI_SIGNAL Unexpected signal received, user <*var1*> exiting.

Priority: Informational

Explanation of Message: This message is generated if the MMLI module receives an unexpected *UNIX*® Operating System signal. If this happens, the indicated user is automatically logged out of the system.

Variable Fields:<*var1*> is the login ID that is being logged out of the system.

Action to be Taken: None

11.12 Switch Interface (SI) Messages

11.12.1 Overview

Switch interface messages are generated by the Switch Interface (SI) system module. The Switch Interface module controls the interface between the Data Server and the switch.

11.12.2 SI001

Message Format: SI_CONNDROP Connection to switch <*var1*> dropped: <*var2*>.

Priority: Informational

Explanation of Message: The connection from the Data Server to the switch has been dropped.

Variable Fields:<*var1*> identifies the particular switch. <*var2*> is the reason that the connection was dropped. Possible reasons are listed in the table.

Possible	Explanation
Record out of sequence	The sequence number on the most recently received record does not follow the sequence number of the previous record.
Initiated by remote	The connection has been dropped by the switch.
System stopping	The Data Server is preparing to stop.
Re-synchronize with new switch table	The switch table entry corresponding to this connection has been altered. Either this connection's switch table entry has been deleted, or a new switch name has been entered.
New connection from this switch	A new connection has been requested from the same switch. The new connection is accepted, and the old is dropped.

Action to be Taken: Check the switch for related errors that may be corrected. The specific action to take is dependent upon the reason for connection drop.

If Reason is ...	THEN Action to Take ...
Record out of sequence	Most frequently, this will be due to the sequence numbers wrapping at the switch (i.e., after reaching some maximum value, the sequence numbers restart with 0). The other possibility is that there has been transmission errors causing data corruption. In either case, a new connection should be established, briefly.
Initiated by remote	If the connection does not reestablish immediately, check the switch for possible alarms.
System stopping	In the case of a duplex Data Server, the connection should reestablish on the other process. Use the display log command to monitor that processor's log to verify that this happens.
Re-synchronize with new switch table	Verify that the changes made to the switch table are valid. If a name change has been made, use the display log command to monitor the log to verify that a connection is made under the new name.
New connection from this switch	Check the switch for alarms. If this message occurs repeatedly, it could indicate that there is an error in the network table, or the switch table, so these entries should be checked.

If the condition persists, contact your local maintenance support organization.

11.12.3 SI002

Message Format: SI_GDIERR Error encountered by GDI API routine <*var1*>.

Priority: Minor or Informational

Explanation of Message: This message indicates that an internal processing error was encountered between the switch interface application and its underlying networking routines.

Variable Fields:<*var1*> identifies the specific routine at which the error was encountered, and is one of these routines: GDI_getdatainfo, GDI_getdropinfo, GDI_pend, GDI_dropconnection, GDI_listen.

Action to be Taken: Use the display log command to monitor the system log to determine if it is able to recover from the error. If the condition persists, stop and reboot the current active processor (if this is a duplex system, the standby will take over as active; if it is simplex, processing will continue after the reboot). If the condition still persists, contact your local maintenance support organization.

11.12.4 SI003

Message Format: SI_INTERN Switch interface encountered internal processing error.

Priority: Informational

Explanation of Message: This message indicates that an internal processing error was encountered within the switch interface application.

Variable Fields: None

Action to be Taken: Use the display log command to monitor the system log to determine if it is able to recover from the error. If the condition persists, stop and reboot the current active processor (if this is a duplex system, the standby will take over as active; if it is simplex, processing will continue after the reboot). If this condition persists, contact your local maintenance support organization.

11.12.5 SI004

Message Format: SI_SEQNO Unable to obtain record with requested sequence no. Switch = <*var1*>.

Priority: Minor

Explanation of Message: During connection establishment, the Data Server specifies which record it expects transmission to begin with. This message indicates that the switch began sending with some record other than the one expected. This message implies a loss of data. The most common reason for this condition to occur is that the connection between the Data Server and the switch has been down for an extended period of time causing the record storage buffers at the switch to overflow.

Variable Fields:<*var1*> identifies the switch with which this error occurred.

Action to be Taken: Check the switch for alarms indicating a problem on its side which may have caused the error. If the condition persists, contact your local maintenance support organization.

11.12.6 SI005

Message Format: SI_SYSERR System call <*var1*> failed.

Priority: Major or Minor

Explanation of Message: This message indicates that a *UNIX*® Operating System call failed in a unexpected manner.

Variable Fields:<*var1*> identifies the system call that failed.

Action to be Taken: If this condition persists, contact your local maintenance support organization.

11.12.7 SI006

Message Format: SI_NOSPACE Unable to obtain space to receive record of length <*var1*> from switch <*var2*>.

Priority: Major

Explanation of Message: This message indicates that a record was received from the switch, which is larger than can be handled by the Data Server.

Variable Fields:<*var1*> is the indicated record length. <*var2*> identifies the switch sending the record.

Action to be Taken: The most typical cause for this error is that there has been data corruption due to transmission error. If this is the case, the connection to the switch will soon be dropped and then reestablished. Use the display log command to monitor the system log to determine if this is the case. If the condition persists, stop and then reboot the current active processor (if this is a duplex system, the standby will take over as active; if it is simplex, processing will continue after the reboot). If the condition still persists, contact your local maintenance support organization.

11.12.8 SI007

Message Format: SI_GDILOST Record from switch <*var1*> lost due to error on GDI.

Priority: Informational

Explanation of Message: Some messages from the switch have a certain number of "groups" in them. If this number is exceeded, the extra messages are lost. This output message is generated when such a situation occurs.

Variable Fields:<*var1*> is the type of message that was lost.

Action to be Taken: If this message occurs repeatedly, contact your local maintenance support organization.

11.12.9 SI008

Message Format: SI_NOHOST Unable to identify switch originating connection.

Priority: Major

Explanation of Message: A connection request has been received from a switch, but the Data Server is unable to identify the switch originating the connection request. The connection request will be rejected.

Variable Fields: None

Action to be Taken: This message indicates a problem in the network table (use the verify network command to check current contents, the change or enter network commands to correct). In particular, check with the switch administrator to verify that the network address entered in the network table is correct. If this Data Server is serving multiple switches, then these checks must be made for each switch served.

11.12.10 SI009

Message Format: SI_NOSWITCH Connection from <*var1*>: No corresponding switch table entry.

Priority: Major

Explanation of Message: A connection request has been received from a switch, but the Data Server is unable to identify the switch originating the connection request. The connection request will be rejected.

Variable Fields:<*var1*> is the switch name as listed in the network table.

Action to be Taken: This message indicates a problem in the switch table. Use the verify switch command to check the current contents of the switch table. If there are errors, use the change or enter switch command to correct. In particular, use verify network check to check that for each input source listed in the network table there is a corresponding entry in the switch table.

11.12.11 SI011

Message Format: SI_CONNLOST Connection attempted by <*var1*> failed.

Priority: Minor

Explanation of Message: This message indicates that an internal processing error was encountered between the switch interface application and its underlying networking routines. The result of this error is that the Data Server failed to complete establishing a connection with a switch.

Variable Fields:<*var1*> identifies the switch that was attempting to connect.

Action to be Taken: Use the display log command to monitor the system log to determine if it is able to recover from the error. If the condition persists, stop and reboot the current active processor (if this is a duplex system, the standby will take over as active; if it is simplex, processing will continue after the reboot). If the condition still persists, contact your local maintenance support organization.

11.12.12 SI012

Message Format: SI_CONNECT Connection established to switch <*var1*>.

Priority: Informational

Explanation of Message: A connection to a switch has successfully been established.

Variable Fields:<*var1*> identifies the switch to which the connection was established.

Action to be Taken: None

11.12.13 SI013

Message Format: SI_SIGNAL Unexpected signal received while in state <*var1*>.

Priority: Minor

Explanation of Message: This message indicates that an internal error has occurred within the switch interface process. The Data Server will be stopped (if this is a duplex system, the processor where this error occurred will be stopped; the other processor should continue to run as active).

Variable Fields:<*var1*> identifies the current state of the switch interface, Stopped, Standby, or Active.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.12.14 SI014

Message Format: SI_NOTRANS State transition (<*var1*> to <*var2*>) failed.

Priority: Major

Explanation of Message: There are several operations that are performed by the switch interface module as it transitions from Stopped to Standby, and then from Standby to Active. This message is produced if one of those operations fails or is requested in an improper order. Messages preceding this one will indicate the specific cause of the failure.

Variable Fields:<*var1*> is the current state. <*var2*> is the state to which the switch interface failed to transition.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.12.15 SI015

Message Format: SI_NOCONNS Switch <*var1*> has not connected in last <*var2*> seconds.

Priority: Informational

Explanation of Message: This message indicates that there is an entry in the switch table for which a connection is currently not established.

Variable Fields:<*var1*> identifies the switch which does not have an established connection. <*var2*> indicates how long it has been since a connection was last established, or how long since the last SI015 message was issued for this switch.

Action to be Taken: Check network and switch table entries for the switch in question. If these are correct, check the switch for alarms which may be preventing it from connecting to the Data Server.

11.12.16 SI016

Message Format: SI_INITFAIL Process initialization failed, exiting.

Priority: Minor

Explanation of Message: The switch interface process failed its initialization procedure.

Variable Fields: None

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.12.17 SI017

Message Format: SI_SWTBL Switch interface unable to <*var1*> row <*var2*> of switch table.

Priority: Minor

Explanation of Message: The switch interface encountered a failure when accessing the switch table.

Variable Fields:<*var1*> identifies the operation that was attempted, either retrieve or set. <*var2*> identifies the switch table row on which the operation failed.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.12.18 SI018

Message Format: SI_DUP_SW Switch table entry <*var1*> (<*var2*>) is a duplicate of switch table entry <*var3*> (<*var4*>).

Priority: Major

Explanation of Message: Two rows of the switch table have the same switch name. **Variable Fields:**<*var1*> is the number of the first row, <*var2*> is the switch name for that row. <*var3*> is the number of the second row, <*var4*> is the switch name for that row.

Action to be Taken: Use the switch table commands (enter, change, delete switch) to correct the switch table.

11.12.19 SI019

Message Format: SI_BADENV Environment variable <*var1*> not set.

Priority: Major

Explanation of Message: A configuration parameter required by the switch interface is not set.

Variable Fields:<*var1*> identifies the configuration parameter.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.12.20 SI022

Message Format: SI_SUSPEND Data collection suspended: billing file system <*var1*>% full.

Priority: Major

Explanation of Message: The storage area for billing data is nearly full. No new data can be accepted.

Variable Fields:<*var1*> provides the percentage that the billing system is full.

Action to be Taken: Contact the collector operator to schedule a polling session.

11.12.21 SI023

Message Format: SI_RESUME Data collection resumed: billing file system <*var1*>% full.

Priority: Informational

Explanation of Message: The storage area for billing data has returned to a normal level.

Variable Fields:<*var1*> provides the percentage that the billing system is full.

Action to be Taken: None

11.13 System Manager (SYSM) Messages

11.13.1 Overview

SYSM messages are generated by the System Manager module. The System Manager module controls and monitors the operation of the two systems in a duplex configuration.

11.13.2 SYSM110

Message Format: SYSM_NO_STANDBY System has no standby unit.

Priority: Major

Explanation of Message: This message indicates that the system is operating without a backup system unit while configured as a duplex system.

Variable Fields: None

Action to be Taken: Using the start command, start the system that is in the stopped mode. This system transitions to the standby mode.

NOTE: This message will continue to be generated until the backup system is operational or the system is reconfigured for simplex operation. To reconfigure the system for simplex operation, enter the change admnparm operconfig=1 command. Once the system is operational again, the operconfig parameter is automatically reset to 2 (duplex operation).

11.13.3 SYSM120

Message Format: Data Server application shutting down due to errors.

Priority: Major

Explanation of Message: Unrecoverable errors have caused the Data Server to shutdown. Preceding messages in the log will identify the specific error. If this is a duplex Data Server, the partner system will take-over as active.

Variable Fields: None

Action to be Taken: Perform any actions prescribed for the other error messages, then reboot the system. If this conditions persists, contact your local maintenance support organization.

11.13.4 SYSM130

Message Format: System transitioned from the <*var1*> state to the <*var2*> state.

Priority: Informational

Explanation of Message: This message shows status changes of the system: STOPPED to STANDBY, and STANDBY to ACTIVE.

Variable Fields:<*var1*> is the previous state, <*var2*> is the new state.

Action to be Taken: None

11.13.5 SYSM140

Message Format: State of application and shared disk on <*var1*> system inconsistent.

Priority: Major

Explanation of Message: The shared disk should only be mounted by the active system. The system manager has detected a situation where either a non-active system has the shared disk mounted, or the active system does not have the shared disk mounted.

Variable Fields:<*var1*> identifies which side of the duplex the error was detected on.

Action to be Taken: The system on which the error was detected will automatically be rebooted. If this situation persists halt the side of the duplex where the error is occurring, allowing the system to run in simplex mode, then contact Product Support.

11.13.6 SYSM150

Message Format: Partner system has assumed STANDBY state.

Priority: Informational

Explanation of Message: This message is logged by the active system when it first detects that its partner has assumed the STANDBY state.

Variable Fields: None

Action to be Taken: None

11.13.7 SYSM160

Message Format: Application running in stopped state.

Priority: Minor

Explanation of Message: This message is logged if the system manager is running when the application should be stopped.

Variable Fields: None

Action to be Taken: The system on which the error was detected will automatically be rebooted. If this situation persists halt the side of the duplex where the error is occurring, allowing the system to run in simplex mode, then contact Product Support.

11.13.8 SYSM210

Message Format: Unable to bind to <*var1*> udp port.

Priority: Major

Explanation of Message: This message is logged if a networking problem prevents the system manager and the state server from communicating. Either of these programs may log this message.

Variable Fields: If logged by the state server, <*var1*> indicates the port to which it is attempting to bind. If logged by the system manager this field is blank.

Action to be Taken: The system on which the error was detected must be rebooted. If this situation persists halt the side of the duplex where the error is occurring, allowing the system to run in simplex mode, then contact Product Support.

11.13.9 SYSM220

Message Format: Unable to execute command <*var1*>.

Priority: Major

Explanation of Message: An error was encountered attempting to start a child process.

Variable Fields:<*var1*> identifies the child process.

Action to be Taken: The system on which the error was detected must be rebooted. If this situation persists halt the side of the duplex where the error is occurring, allowing the system to run in simplex mode, then contact Product Support.

11.13.10 SYSM230

Message Format: Unable to get IP address for host <*var1*>.

Priority: Minor

Explanation of Message: Lookup of the specified host name failed.

Variable Fields:<*var1*> identifies the host name.

Action to be Taken: Use the enter net command to enter the correct IP address for the specified host name.

11.13.11 SYSM240

Message Format: No response from IP interface <*var1*>.

Priority: Minor

Explanation of Message: SYSM checks status of its partner system over all configured networks. This message indicates that SYSM failed to get a response on one network, but did get a response on the other networks, indicating a problem with the identified network.

Variable Fields:<*var1*> identifies the network interface.

Action to be Taken: Check networking hardware associated with the identified network interface.

11.13.12 SYSM250

Message Format: Shutting down due to signal <*var1*>.

Priority: Minor

Explanation of Message: A system manager process has received a signal.

Variable Fields:<*var1*> identifies the signal.

Action to be Taken: If this condition persists, contact Product Support.

11.13.13 SYSM260

Message Format: REX - Attempting automatic side switch.

Priority: Informational

Explanation of Message: An automatic duplex side switch has been initiated.

Variable Fields: None.

Action to be Taken: None.

11.13.14 SYSM261

Message Format: REX - Automatic side switch failed. Former active has resumed active role.

Priority: Major

Explanation of Message: Automatic duplex side switch has been attempted. The standby system did not successfully assume the active role. The former active has become active again.

Variable Fields: None.

Action to be Taken: Check the log on the standby system to determine why it failed to become active.

11.13.15 SYSM262

Message Format: REX - Automatic side switch not attempted. No standby.

Priority: Informational

Explanation of Message: The scheduled automatic duplex side switch did not occur since one side of the duplex is currently stopped.

Variable Fields: None.

Action to be Taken: None.

11.14 Tape Processing (TP) Messages

11.14.1 Overview

TP messages may be generated by the Tape Processing system module. The Tape Processing system module monitors the FTP function.

11.14.2 TP0001

Message Format: TP_NOSUCHRAO SW_TROUBLE The DPMS does not exist.

Priority: Major

Explanation of Message: Tape processor was unable to access DPMS information from the database.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.3 TP0002

Message Format: TP_BADARGS SW_TROUBLE Tape process invoked with invalid options.

Priority: Major

Explanation of Message: Tape processor was started with incorrect arguments.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.4 TP0003

Message Format: TP_SIG SW_TROUBLE <*var1*>: Tape process initialization failed.

Priority: Major

Explanation of Message: Tape processor failed to initialize.

Variable Fields:<*var1*> is the initialization step that failed.

Action to be Taken: Contact Product Support.

11.14.5 TP0004

Message Format: TP_DIRFAIL SW_TROUBLE Tape process initialization failed.

Priority: Major

Explanation of Message: The tape processor creates a temporary working directory. Its attempt to create that directory failed.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.6 TP0005

Message Format: TP_DIRCHG SW_TROUBLE Tape process initialization failed.

Priority: Major

Explanation of Message: The tape processor was unable to change to its temporary working directory.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.7 TP0006

Message Format: TP_OBJNEW SW_TROUBLE Tape for DPMS could not allocate memory.

Priority: Major

Explanation of Message: Tape processor was unable to allocate additional memory.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.8 TP0007

Message Format: TP_NODATA No data available to write to tape for DPMS.

Priority: Informational

Explanation of Message: The tape processor was started, but no data was available to transmit. Normally, the tape processor is only started when there is data available to transfer.

Variable Fields: None

Action to be Taken: None

11.14.9 TP0008

Message Format: TP_WRKLIST SW_TROUBLE Could not set up list of files for tape for DPMS.

Priority: Major

Explanation of Message: An internal error prevented the processor from building the list of files to transfer. The current tape writing session will fail.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.10 TP0009

Message Format: TP_SIGCGHT SW_TROUBLE Tape Processing for DPMS terminated abnormally.

Priority: Major

Explanation of Message: An internal processing error caused the termination of the tape processor.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.11 TP0010

Message Format: TP_NORAO SW_TROUBLE Name parameter missing.

Priority: Major

Explanation of Message: A start-up error caused the tape processor to fail.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.12 TP0011

Message Format: TP_NOTAPE SW_TROUBLE Tape device name parameter missing.

Priority: Major

Explanation of Message: The tape processor is unable to access the specified tape device.

Variable Fields: None

Action to be Taken: Verify and change as necessary the tape device specified in Section 4.2 , "Administrative Parameters".

11.14.13 TP0012

Message Format: TP_NOFILES SW_TROUBLE Work list file parameter missing.

Priority: Major

Explanation of Message: A start-up error caused the DDI transmission process to fail.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.14 TP0013

Message Format: TP_DBREAD SW_TROUBLE Could not get DPMS from the database.

Priority: Major

Explanation of Message: DDI transmission was unable to access DPMS information from the database.

Variable Fields: None

Action to be Taken: Contact Product Support.

11.14.15 TP0018

Message Format: TP_BILLFGET SW_TROUBLE Could not retrieve data for file <*var1*> for transfer to tape for DPMS.

Priority: Major

Explanation of Message: Tape processor was unable to access a billing file ready for writing to tape.

Variable Fields:<*var1*> is the name of the billing file.

Action to be Taken: Contact Product Support.

11.14.16 TP0019

Message Format: TP_COMMIT SW_TROUBLE Could not commit <*var1*> after transfer.

Priority: Major

Explanation of Message: After writing a file to tape, the tape processor was unable to convert the file to secondary.

Variable Fields:<*var1*> is the file name.

Action to be Taken: Contact Product Support. Duplicate data may be sent to DPMS if primary file commit fails.

11.14.17 TP0020

Message Format: TP_LINKFAIL SW_TROUBLE Could not copy file <*var1*> to tape for DPMS.

Priority: Major

Explanation of Message: The tape processor encountered an error when preparing a file for transfer to tape.

Variable Fields:<*var1*> is the file name.

Action to be Taken: Contact Product Support.

11.14.18 TP0021

Message Format: TP_CPIOFAIL SW_TROUBLE Could not copy file <*var1*> to tape for DPMS.

Priority: Major

Explanation of Message: The tape processor encountered an error when writing a file to tape.

Variable Fields:<*var1*> is the file name.

Action to be Taken: Contact Product Support.

11.14.19 TP0022

Message Format: TP_CONNCLSE Tape for DPMS complete.

Priority: Informational

Explanation of Message: The tape writing session has completed.

Variable Fields: None

Action to be Taken: None

11.14.20 TP0023

Message Format: TP_CONNGRC Tape writing for DPMS canceled gracefully.

Priority: Informational

Explanation of Message: Tape writing session has been gracefully canceled.

Variable Fields: None

Action to be Taken: None

11.14.21 TP0024

Message Format: TP_FILESENT <*var1*> file(s) written to tape for DPMS.

Priority: Informational

Explanation of Message: This message specifies the number of files that were written to tape.

Variable Fields:<*var1*> is the number of files written.

Action to be Taken: None

11.14.22 TP0025

Message Format: TP_NONESENT No data was written to tape for DPMS.

Priority: Informational

Explanation of Message: Tape writing session has terminated, no files were written.

Variable Fields: None

Action to be Taken: None

11.14.23 TP0026

Message Format: TP_IMMTERM Tape writing for DPMS terminated immediately.

Priority: Informational

Explanation of Message: Tape writing has been terminated.

Variable Fields: None

Action to be Taken: None

11.14.24 TP0027

Message Format: TP_ST_PRIMARY Primary file <*var1*> size <*var2*> bytes written to tape successfully for DPMS as <*var3*>.

Priority: Informational

Explanation of Message: A primary file has been successfully written to tape.

Variable Fields:<*var1*> is the name of primary file on Data Server. <*var2*> is the number of bytes in file. <*var3*> is the name of the primary file on tape.

Action to be Taken: None

11.14.25 TP0028

Message Format: TP_ST_TERTIARY Secondary file <*var1*> size <*var2*> bytes written to tape successfully for DPMS as <*var3*>.

Priority: Informational

Explanation of Message: A secondary file has been successfully written to tape.

Variable Fields:<*var1*> is the name of secondary file on Data Server. <*var2*> is the number of bytes in file. <*var3*> is the name of the secondary file on tape.

Action to be Taken: None

11.15 General (UMAT) Messages

11.15.1 Overview

UMAT messages are general output messages that may be generated by more than one system module.

11.15.2 UMAT001

Message Format: UMAT_ISUP <*var1*>: is running.

Priority: Informational

Explanation of Message: This message indicates that the specified Data Server module has been successfully initialized.

Variable Fields:<*var1*> is the name of the module.

Action to be Taken: None

11.15.3 UMAT003

Message Format: UMAT_RT <*var1*>: Internal communications error.

Priority: Minor, Major or Critical, depending on the circumstances

Explanation of Message: This message indicates that an internal communications function has failed.

Variable Fields:<*var1*> is the module name.

Action to be Taken: If this condition persists, contact your local technical support organization.

11.15.4 UMAT004

Message Format: UMAT_UNKWNMSG <*var1*>: unknown message ID <*var2*>.

Priority: Minor

Explanation of Message: This message indicates that an unknown internal message was received by a module.

Variable Fields:<*var1*> is the module name that received the message. <*var2*> is an identification tag for the message received.

Action to be Taken: If this condition persists, contact your local technical support organization.

11.15.5 UMAT006

Message Format: UMAT_BADACT <*var1*>: action <*var2*> only permitted in active state.

Priority: Major

Explanation of Message: This message indicates that a module was requested to perform an action that is permitted only while the module is in the active mode. The module is not currently in the active mode. The request is ignored.

Variable Fields:<*var1*> is the module name. <*var2*> is the requested action.

Action to be Taken: If this condition persists, contact your local technical support organization.

11.15.6 UMAT007

Message Format: UMAT_BADTRANS <*var1*>: requested transition from [<*var2*>, <*var3*>] to [<*var4*>, <*var5*>] is illegal.

Priority: Major

Explanation of Message: This message indicates that a module was asked to make a transition that is not allowed for that module. The request is ignored.

Variable Fields:<*var1*> is the module name. <*var2*> is the current mode (active, standby, or stopped). <*var3*> indicates the current operating configuration (simplex or duplex). <*var4*> is the new mode that was requested. <*var5*> is the new operating configuration that was requested.

Action to be Taken: If this condition persists, contact your local technical support organization.

11.15.7 UMAT008

Message Format: UMAT_TRANS <*var1*>: transitioning from [<*var2*>, <*var3*>] to [<*var4*>, <*var5*>].

Priority: Informational

Explanation of Message: This message indicates that a module is making the specified transition.

Variable Fields:<*var1*> is the module name. <*var2*> is the current mode of the module (active, standby, or stopped). <*var3*> is the current operating configuration (simplex or duplex). <*var4*> is the new mode of the module. <*var5*> is the new operating configuration of the module.

Action to be Taken: None

11.15.8 UMAT009

Message Format: UMAT_FILE <*var1*>: error accessing file <*var2*> for <*var3*>.

Priority: Informational

Explanation of Message: This message indicates that a module failed to access a given file for the indicated action.

Variable Fields:<*var1*> is the module name. <*var2*> is the full *UNIX*® Operating System pathname of the file. <*var3*> is the type of access reading or writing.

Action to be Taken: If this message occurs repeatedly, contact your local technical support organization.

11.15.9 UMAT010

Message Format: Component <*var1*> shutting down due to error.

Priority: Minor

Explanation of Message: This message indicates that the named Data Server component encountered an error causing it to shutdown.

Variable Fields:<*var1*> identifies the component encountering the error.

Action to be Taken: The component will automatically be re-started. If the error continues to occur the Data Server application will automatically shutdown, and product support should be contacted.

11.15.10 UMAT011

Message Format: Unexpected signal received by <*var1*>.

Priority: Minor

Explanation of Message: This message indicates that the named Data Server component encountered an error resulting in the receipt of a signal. The component will be shutdown.

Variable Fields:<*var1*> identifies the component encountering the error.

Action to be Taken: The component will automatically be re-started. If the error continues to occur the Data Server application will automatically shutdown, and product support should be contacted.

11.15.11 UMAT012

Message Format: Process <*var1*> initialization failed, exiting.

Priority: Minor

Explanation of Message: This message indicates that the named Data Server component failed initialization and is unable to communicate with other components. The component will be shutdown.

Variable Fields:<*var1*> identifies the component encountering the error.

Action to be Taken: The component will automatically be re-started. If the error continues to occur the Data Server application will automatically shutdown, and product support should be contacted.

11.15.12 UMAT014

Message Format: UMAT_WRG_STATE Current state incorrect in SYSTEM_STATUS_MESSAGE.

Priority: Minor

Explanation of Message: This message indicates that the internal processes of the Data Server are not synchronized. After this message is generated, the system on which it was generated should automatically shut down.

Variable Fields: None

Action to be Taken: If the system does not automatically shut down after this message is generated, enter the stop command on the system that generated this message. After the system is in the stopped mode, enter the start command. If this message occurs repeatedly, contact your local maintenance support organization.

11.15.13 UMAT018

Message Format: UMAT_NOTRANS State transition (<*var1*> to <*var2*>) failed.

Priority: Minor

Explanation of Message: System state transition failed.

Variable Fields:<*var1*> is previous state. <*var2*> is new state.

Action to be Taken: If condition persists, contact your local maintenance support organization.

11.15.14 UMAT020

Message Format: UMAT_SHIP Unable to ship record file <*var1*>. <*var2*> records from switch <*var3*> lost.

Priority: Minor

Explanation of Message: The Data Server software was unable to pass billing data from one stage of processing to the next. This set of billing data is lost.

Variable Fields:<*var1*> is the name the billing file. <*var2*> is the number of records. <*var3*> identifies the originating switch by number.

Action to be Taken: If this error persists, contact customer support.

11.15.15 UMAT100

Message Format: System call <*var1*> failed.

Priority: Minor

Explanation of Message: This message indicates that a *UNIX*® Operating System call failed in an unexpected manner.

Variable Fields:<*var1*> identifies the system call.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.15.16 UMAT225

Message Format: Data collection suspended: <*var1*> occupancy <*var2*>.

Priority: Major

Explanation of Message: The volume of primary data on the system has reached the level where no new data may be accepted. Collection of billing data from the switch has been suspended until a successful transmission of primary data occurs. Once collection has been suspended, this alarm will issue every 5 minutes until collection is resumed.

Variable Fields:<*var1*> indicates that either the disk or sequence number occupancy measure has

exceeded its limit. <*var2*> is current percent occupancy of <*var1*>.

Action to be Taken: Primary data needs to be transmitted to the DPMS. Check that transmission is either set to be continuous or is scheduled soon. If transmission is being attempted, but failing, verify the Administrative Parameters related to DDI transmission with the DPMS administrator.

11.15.17 UMAT226

Message Format: Data collection resumed: <*var1*> occupancy <*var2*>.

Priority: Informational

Explanation of Message: The volume of primary data on the system has dropped back to an acceptable level, and data collection has been resumed.

Variable Fields:<*var1*> indicates that the disk or sequence number occupancy measure has exceeded its limit. <*var2*> is current percent occupancy of <*var1*>.

Action to be Taken: None

11.15.18 UMAT300

Message Format:<*var1*> records processed.

Priority: Informational

Explanation of Message: This message indicates the number of records successfully processed from an input file by FMTR. It is issued in conjunction with either UMAT301 or UMAT302.

Variable Fields:<*var1*> is the count of records successfully processed.

Action to be Taken: None

11.15.19 UMAT301

Message Format:<*var1*> records lost.

Priority: Informational

Explanation of Message: This message is issued when the number of records found by FMTR in an input file is less than indicated by the file's header.

Variable Fields:<*var1*> is the count of records lost.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.15.20 UMAT302

Message Format: More than <*var1*> records in file.

Explanation of Message: This message is issued when the number of records found by FMTR in an input file is greater than indicated by the file's header.

Variable Fields:<*var1*> is the count of excess records.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.15.21 UMAT500

Message Format: Record count exceeded threshold.

Priority: Major

Explanation of Message: The number of records in an input file to the FMTR exceeds the threshold limit.

Variable Fields: None

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.15.22 UMAT501

Message Format: Invalid record count ignored.

Priority: Critical

Explanation of Message: The number of records specified in the header of a FMTR input file is invalid.

Variable Fields: None

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

11.16 Output Messages Review

(1) Output messages are categorized three ways. List and describe each category.

Log file message - A message that appears in the Data Server log file and appear when you log on the system.

Command responses - Messages that you may see when you enter commands on the system.

Additional messages - Messages that may appear on the screen while you are working on the system.

(2) List the output message priorities and the code used to identify each one.

Critical - *C

Major - **

Minor - *

Informational - no code (blank(

(3) Describe the output message format labels listed below.

Message format - Message text that appears on the screen.

Priority - Critical, Major, Minor, or Informational.

Explanation of message - Indicates what would cause message.

Variable Fields - Explains each variable field in message.

Action to be taken -What should be done to correct the problem.

(4) Match each module identification in the left column with its corresponding system module from the right column.

D	CMDX	A	Switch Interface

G	CMGR	B	General
J	DCNI	C	System Manager
F	FX	D	Command Execution
I	MMLI	E	Tape Processing
A	SI	F	DDI File Transmission
C	SYSM	G	Component Manager
E	TP	H	User Interface
H	UI	I	MML Command Interface
B	UMAT	J	AMADNS File Manager

(5) Using this Output Messages chapter, define these output messages and determine your course of action.

CMDX005 - An entry in the switch table could not be accessed due to an internal processing error. If repeated, contact your local support.

SI009 - Data Server is unable to identify the switch originating the connection request. Action: Use verify switch and use chg or enter switch.

TP0028 - A secondary file has been successfully written to tape. NAR

FX0024 - DDI transmission sends billing files to the DPMS under a temporary name. The error indicates that the rename operation failed. Contact DPMS administrator.

12. User Interface Messages

12.1 Overview

12.1.1 Objectives

Upon completion of this chapter, you should be able to:

- define the severity of an output message
- use the output message to determine the action required

12.1.2 Chapter Contents

This chapter describes the UI messages which are generated by the UI system module. The messages are displayed to provide additional information when you are entering input commands.

NOTE:

- The output messages in this section do not appear in the log file.
- The messages generated by the UI module do not have message priorities.

12.1.3 Format of Messages

This information is provided for each Data Server output message.

Information Label	Description
Message Format	Shows the message text that appears on the screen. Variable information is indicated by <*var1*>, <*var2*>, <*var3*>, and so on. In the message that appears on the screen, each variable is replaced by text.
Explanation of Message	Explains the text of the message or what would cause this message to be output.
Variable Fields	If the message contains variable information, explains each variable field in the message.
Action to be Taken	Explains what you need to do to correct the problem. No action necessary means that this message does not indicate a problem and you do not need to do anything. For some messages, an action is required only if the condition persists or if the message occurs repeatedly. In these cases, the action should be taken if the message occurs five times or more within five minutes.

12.1.4 Additional Messages

Additional messages are messages that may appear on the screen while you are working on the system. These messages are not identified by a module identification and message number. In this chapter, the messages are listed in alphabetical order.

NOTE: These messages do not appear in the log file.

12.2 User Interface (UI) Messages

12.2.1 UI001

Message Format: UI_PRM COMMAND FAILED: No command parameter specified.

Explanation of Message: This message indicates that an interface error within the Data Server caused

this command to fail.

Variable Fields: None

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.2 UI002

Message Format: UI_ADM COMMAND FAILED: Cannot <*var1*> administrative parameter value.

Explanation of Message: This message indicates that a database access error caused this command to fail.

Variable Fields:<*var1*> indicates whether the database access failure was an attempt to retrieve a value or an attempt to specify a value.

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.3 UI003

Message Format: UI_GRP COMMAND FAILED: Cannot retrieve <*var1*> group ids.

Explanation of Message: This message indicates that an error was encountered obtaining login IDs from one of the permission groups.

Variable Fields:<*var1*> identifies the permission group, either usr or adm.

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.4 UI004

Message Format: UI_CHG COMMAND FAILED: Could not change administrative parameter <*var1*>.

Explanation of Message: This message indicates that an internal communication problem prevented the administrative parameter from being changed.

Variable Fields:<*var1*> is the name of the parameter.

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.5 UI006

Message Format: UI_ERR COMMAND FAILED: Error executing command.

Explanation of Message: This message indicates that an internal error prevented the command from being performed.

Variable Fields: None

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.6 UI007

Message Format: UI_DISP COMMAND FAILED: Unable to display verbs.

Explanation of Message: This message indicates that an error prevented the system from finding the list of valid verbs.

Variable Fields: None

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.7 UI009

Message Format: UI_GET_OBJ COMMAND FAILED: Unable to obtain object list.

Explanation of Message: This message indicates that a processing error prevented the system from finding the objects associated with the verb that was entered.

Variable Fields: None

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.8 UI010

Message Format: UI_OPEN COMMAND FAILED: Unable to open <*var1*> file.

Explanation of Message: This message indicates that an error occurred while attempting to open a file.

Variable Fields:<*var1*> indicates the type of file that was being opened.

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.9 UI011

Message Format: UI_INTERNAL COMMAND FAILED: Internal system error, see output message log.

Explanation of Message: This message indicates that an error occurred while the system was performing the requested command.

Variable Fields: None

Action to be Taken: Use the display log command to view recent messages in the message log. Follow the instructions provided with these messages. Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.10 UI012

Message Format: UINOTACTIVE COMMAND FAILED: Internal error prevented <*var1*>.

Explanation of Message: This message indicates that an internal failure prevented the system from performing this command.

Variable Fields:<*var1*> describes the action that failed.

Action to be Taken: Use the display log command to view recent messages in the message log. Follow the instructions provided with these messages. Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.11 UI026

Message Format: UI_PARM_VALUE INPUT ERROR: Invalid <*var1*> parameter value.

Explanation of Message: This message indicates that the value that was specified for a parameter is not one of the possible values for that parameter.

Variable Fields:<*var1*> is the name of parameter.

Action to be Taken: See Chapter 4 , "System Parameters and Version", to determine the possible values for the parameter. Enter the command again with a new parameter value.

12.2.12 UI027

Message Format: UI_OPTION INPUT ERROR: Option does not match the allowable set for this command.

Explanation of Message: This message indicates that an internal error caused the command to fail.

Variable Fields: None

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.13 UI028

Message Format: UI_VALUES INPUT ERROR: The <*var1*> parameter (<*var2*>) cannot be > = the <*var3*> parameter (<*var4*>).

Explanation of Message: This message indicates an error in specifying values for the amamin, amamaj, and amacrit administrative parameters. The values for these parameters must be specified so that amamin is less than amamaj and amamaj is less than amacrit.

Variable Fields:<*var1*> and <*var3*> are the names of the parameters. <*var2*> is the value of the first named parameter. <*var4*> is the value of the second named alarm parameter.

Action to be Taken: Reenter the command with valid values for these administrative parameters.

12.2.14 UI030

Message Format: UI_NO_HELP INPUT ERROR: On-line help is not available for requested command.

Explanation of Message: This message indicates that the requested on-line help information is not available.

Variable Fields: None

Action to be Taken: For information on all Data Server commands, see Section 3.5 , "Input Commands".

12.2.15 UI031

Message Format: UI_SPEC INPUT ERROR: All required parameters not specified.

Explanation of Message: This message indicates that the command could not be performed because the required information was not specified with the command.

Variable Fields: None

Action to be Taken: Reenter the command with all of the required parameters.

12.2.16 UI032

Message Format: UI_INV_NAME INPUT ERROR: Invalid administrative parameter name specified.

Explanation of Message: This message indicates that the administrative parameter name that was entered is not a valid name.

Variable Fields: None

Action to be Taken: Check the spelling of the administrative parameter and reenter the command.

12.2.17 UI033

Message Format: UI_IDLE2 INPUT ERROR: Idle too long, logged out.

Explanation of Message: This message indicates that a user inactivity time-out has occurred. This occurs if you do not enter a command within the time limit specified by the usrtimeout administrative parameter.

Variable Fields: None

Action to be Taken: If you need to continue working on the system, login again. Otherwise, no action is necessary.

12.2.18 UI034

Message Format: UI_INVALID INPUT ERROR: Invalid <*var1*> entered.

Explanation of Message: This message indicates that some portion of the command that was entered is invalid.

Variable Fields:<*var1*> specifies one of the following:

- command - the command was entered incorrectly
- verb - an invalid verb was entered
- parameter - an invalid parameter was entered
- value - an invalid value was entered; check for proper use of quotation marks
- display - an unknown report was requested.

Action to be Taken: See Section 3.5 , "Input Commands", for the correct command format, and reenter the command.

12.2.19 UI035

Message Format: UI_INV_PARAM INPUT ERROR: Invalid parameter name <*var1*>.

Explanation of Message: This message indicates that the named parameter is not a valid parameter for the command that was entered.

Variable Fields:<*var1*> is the name of the invalid parameter.

Action to be Taken: Refer to a list of valid parameters for each command.

12.2.20 UI036

Message Format: UI_NO_DEFAULT INPUT ERROR: No default exists for parameter <*var1*>.

Explanation of Message: This message indicates that there is no default value for the specified parameter. This means that the + value is not allowed for this parameter.

Variable Fields:<*var1*> is the name of the parameter.

Action to be Taken: Enter the command again and specify a value for the parameter.

12.2.21 UI037

Message Format: UI_NO_OBJECTS INPUT ERROR: No objects exist for verb <*var1*>.

Explanation of Message: This message indicates that a processing error prevented the system from finding the objects associated with the named verb.

Variable Fields:<*var1*> is the name of the verb.

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.22 UI038

Message Format: UI_NO_PARAMS INPUT ERROR: No parameters exist for the command.

Explanation of Message: This message indicates that parameters were entered for a verb-object pair that has no parameters.

Variable Fields: None

Action to be Taken: Reenter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.23 UI039

Message Format: UI_PERMISSION INPUT ERROR: Permission denied.

Explanation of Message: This message indicates that the command that was attempted is restricted to application administrators using a login ID with adm permissions.

Variable Fields: None

Action to be Taken: In order to use this command, you must log into the system using a login ID with adm permissions.

12.2.24 UI040

Message Format: UI_PARAMS INPUT ERROR: Too many parameters entered for this command.

Explanation of Message: The number of parameters entered is greater than the number of parameters defined for this command.

Variable Fields: None

Action to be Taken: Reenter the command.

12.2.25 UI041

Message Format: UI_INVCMD INPUT ERROR: Invalid <*var1*> command: <*var2*>.

Explanation of Message: This message indicates that the verb that was entered does not have an object.

Variable Fields:<*var1*> is the verb that was entered. <*var2*> is the object that was entered.

Action to be Taken: Reenter the command without the object.

12.2.26 UI042

Message Format: UI_SYNTAX INPUT ERROR: Syntax error.

Explanation of Message: This message indicates that the command that was entered does not have the correct format.

Variable Fields: None

Action to be Taken: See Section 3.5 , "Input Commands", for detailed information on how to enter Data Server commands. Enter the command again with the correct format.

12.2.27 UI043

Message Format: UI_PARM_VALUE2 INPUT ERROR: Invalid <*var1*> parameter value: <*var2*>.

Explanation of Message: The value given for the named administrative parameter is invalid.

Variable Fields:<*var1*> identifies the administrative parameter. <*var2*> is the value given.

Action to be Taken: Use help to determine acceptable values for the parameter.

12.2.28 UI053

Message Format: UI_IDLE1 INFO: Idle too long.

Explanation of Message: This is a warning message indicating that a user inactivity time-out is about to occur. This happens if you do not enter a command within the time limit specified by the usrtimeout administrative parameter.

Variable Fields: None

Action to be Taken: To avoid being automatically logged out, press Enter.

12.2.29 UI101

Message Format: UI_INV_UID INPUT ERROR: Login ID must be 1-7 alphabetic characters.

Explanation of Message: This message indicates that an invalid login ID was entered. A login ID must consist of one to seven lowercase alphabetic characters with no numbers or special characters.

Variable Fields: None

Action to be Taken: Reenter a valid login ID.

12.2.30 UI102

Message Format: UI_INV_PERM INPUT ERROR: usr and adm are the only valid permissions.

Explanation of Message: This message indicates that an invalid permission for a login ID was entered.

Variable Fields: None

Action to be Taken: Enter either usr or adm at the prompt.

12.2.31 UI103

Message Format: UI_INV_UNAM INPUT ERROR: name must be 1-20 characters, for example, BDNS User.

Explanation of Message: This message indicates that an invalid name was entered. The name may have a maximum of 20 alphanumeric characters and must be enclosed with quotation marks if the name includes spaces.

Variable Fields: None

Action to be Taken: Enter the name again, limiting the entry to 20 characters or less. The name should be enclosed with quotation marks if it includes spaces.

12.2.32 UI104

Message Format: UI_INV_EUID INPUT ERROR: Login ID <*var1*> exists, use del logid to remove.

Explanation of Message: This message indicates that the specified login ID cannot be created because it already exists.

Variable Fields:<*var1*> is the login ID that was entered.

Action to be Taken: Enter another login ID or use the delete logid command to remove the login ID that already exists.

12.2.33 UI105

Message Format: UI_INV_USER INPUT ERROR: <*var1*> does not exist or is not a valid system user.

Explanation of Message: This message may be displayed after you enter the delete logid command, if the specified login ID does not exist or if the login ID is not a registered Data Server user.

Variable Fields:<*var1*> is the login ID.

Action to be Taken: Check the spelling of the login ID and reenter.

12.2.34 UI106

Message Format: UI_ADM_PERM INPUT ERROR: You must have adm permissions to change someone else's password.

Explanation of Message: This message is displayed if you do not have adm permissions and you try to use the change passwd command to change the password for a login ID other than your own.

Variable Fields: None

Action to be Taken: Log into the system with a login ID that has adm permissions or log into the system with the login ID whose password you are trying to change. Reenter the change passwd command.

12.2.35 UI107

Message Format: UI_PERM_UID INPUT ERROR: <*var1*> login IDs cannot be removed.

Explanation of Message: This message is displayed if you try to use the delete logid command to remove umatadm or umatsup. This operation is not allowed by the system.

Variable Fields:<*var1*> indicates the login ID that cannot be deleted.

Action to be Taken: No action necessary.

12.2.36 UI108

Message Format: INFO: Logid <*var1*> created: Use `chg-passwd' to set password.

Explanation of Message: A new login ID has been created. The login is created without a password. The chg-passwd command should now be used to assign the password to the new login ID and preserve system security.

Variable Fields:<*var1*> is the new login ID.

Action to be Taken: No action necessary.

12.2.37 UI120

Message Format: UI_INV_MSG INPUT ERROR: log, pro, and motd are the only valid message types.

Explanation of Message: This message may be displayed when you use commands in the msg command set.

Variable Fields: None

Action to be Taken: Reenter the command and specify one of the three valid message types.

12.2.38 UI133

Message Format: INPUT ERROR: <*var1*> invalid regular expression, <*var2*>.

Explanation of Message: The display record commands allow regular expression matches on field names. The regular expression given for a field search is invalid.

Variable Fields:<*var1*> is the regular expression search string given. <*var2*> indicates the regular expression error.

Action to be Taken: Re-enter the command with a valid regular expression.

12.2.39 UI134

Message Format: INPUT ERROR: maximum day supported is <*var1*>.

Explanation of Message: The day specified for the report is out of range.

Variable Fields:<*var1*> is the largest day value which may be specified.

Action to be Taken: Re-enter the command with a valid day specified.

12.2.40 UI201

Message Format: UI_INV_MONTH INPUT ERROR: <*var1*> is an invalid month. Range is 1 to 12.

Explanation of Message: This message is displayed if a value was entered for the month that is not in the proper range.

Variable Fields:<*var1*> is the month that was entered.

Action to be Taken: Reenter a value that is in the indicated range.

12.2.41 UI202

Message Format: UI_INV_YEAR INPUT ERROR: <*var1*> is an invalid year. Range is 0 to 99.

Explanation of Message: This message is displayed if a value was entered for the year that is not in the proper range.

Variable Fields:<*var1*> is the year that was entered.

Action to be Taken: Reenter a value that is in the indicated range.

12.2.42 UI203

Message Format: UI_INV_DAY INPUT ERROR: <*var1*> is an invalid day. Range is 1 to 31.

Explanation of Message: This message is displayed if a value was entered for the day that is not in the proper range.

Variable Fields:<*var1*> is the day that was entered.

Action to be Taken: Reenter a value that is in the indicated range.

12.2.43 UI204

Message Format: UI_INV_DAYMN INPUT ERROR: <*var1*> is an invalid day for month <*var2*>.

Explanation of Message: This message is displayed if a value was entered for the day is not valid for the corresponding month. For example, this message is displayed if "31" is entered as the day and "June" is entered as the month.

Variable Fields:<*var1*> is the day that was entered. <*var2*> is the month.

Action to be Taken: Reenter a value that is valid for the indicated month.

12.2.44 UI205

Message Format: UI_INV_HOUR INPUT ERROR: <*var1*> is an invalid hour. Range is 0 to 23.

Explanation of Message: This message is displayed if a value was entered for the hour that is not in the proper range. The time is based on a 24-hour clock.

Variable Fields:<*var1*> is the hour that was entered.

Action to be Taken: Reenter a value that is in the indicated range.

12.2.45 U1206

Message Format: UI_INV_MINUTE INPUT ERROR: <*var1*> is an invalid minute. Range is 0 to 59.

Explanation of Message: This message is displayed if a value was entered for the minute that is not in the proper range.

Variable Fields:<*var1*> is the minute that was entered.

Action to be Taken: Reenter a value that is in the indicated range.

12.2.46 UI207

Message Format: INPUT ERROR: <*var1*> is an invalid timezone. Use help for valid choices.

Explanation of Message: The timezone specified is invalid.

Variable Fields:<*var1*> is the specified timezone.

Action to be Taken: Re-enter the command with a valid timezone specified.

12.2.47 UI208

Message Format: WARNING: Timezone change will not take affect until after systems have been re-booted.

Explanation of Message: A change in the system's timezone does not take effect until the system has been re-booted.

Variable Fields: None

Action to be Taken: Stop the application and reboot the system.

12.2.48 UI226

Message Format: UI_NOENTRY INPUT ERROR: The specified switch table entry (<*var1*>) is empty.

Explanation of Message: An attempt has been made to change or delete information in a row of the switch table which is empty. Only non-empty rows of the switch table may be changed or deleted.

Variable Fields:<*var1*> identifies the empty switch table row.

Action to be Taken: Use the verify switch command to determine the contents of the switch table.

12.2.49 UI227

Message Format: UI_NOTABLE INFO: There are no entries in the switch table.

Explanation of Message: A request has been made to display the contents of the switch table using the verify switch command, however, the switch table is currently empty.

Variable Fields: None

Action to be Taken: Entries may be added to the switch table by use of the enter switch command.

12.2.50 UI228

Message Format: UI_SW_FULL INPUT ERROR: The switch table is already full (max entries = <*var1*>).

Explanation of Message: An attempt has been made to add an entry to the switch table using the enter switch command, however, the switch table is currently full.

Variable Fields:<*var1*> is the maximum number of entries in the switch table.

Action to be Taken: If you want to add another row, use the delete switch command to delete an existing row from the switch table.

12.2.51 UI229

Message Format: UI_SNGL_SW INPUT ERROR: Only 1 switch table entry allowed when multi_switch = n.

Explanation of Message: An attempt has been made to add an entry to the switch table using the enter switch command, however, the multi-switch feature has not been turned on and there is already 1 entry in the switch table.

Variable Fields: None

Action to be Taken: Use upd-admnparm:multi_switch=y; to enable the multi-switch feature.

12.2.52 UI230

Message Format: UI_NEWROW INFO: Switch table entry assigned switch_no = <*var1*>.

Explanation of Message: An entry has been added to the switch table.

Variable Fields:<*var1*> identifies the switch table row where the entry was placed. Future references to this switch table entry will be made by use of this row number.

Action to be Taken: No action necessary.

12.2.53 UI231

Message Format: UI_MULTIROW INPUT ERROR: Cannot set multi_switch to n. Switch table contains <*var1*> entries.

Explanation of Message: An attempt has been made to turn the multi-switch feature off (change the value of admnparam multi_switch from `y' to `n'). This cannot be done as long as there is more than 1 entry in the switch table.

Variable Fields:<*var1*> specifies the number of entries currently in the switch table.

Action to be Taken: The delete switch command may be used to delete entries from the switch table.

12.2.54 UI232

Message Format: UI_SW_DUPS INPUT ERROR: The connection ID <*var1*> already exists in the switch table.

Explanation of Message: Each connection ID specified in the switch table must be unique. The connection ID given already exists.

Variable Fields:<*var1*> is the specified connection ID.

Action to be Taken: If a new switch is being added, obtain a unique ID for that switch.

12.2.55 UI233

Message Format: INPUT ERROR: The sensor ID must be unique within the switch table.

Explanation of Message: An attempt to create a switch table entry has failed because the sensor ID entered is not unique.

Variable Fields: None

Action to be Taken: Determine a unique sensor ID for the switch and re-execute the `enter-switch' command.

12.2.56 UI241

Message Format: UI_STNOENTRY INPUT ERROR: The specified stream table entry <*var1*> is empty.

Explanation of Message: An attempt has been made to change or delete information in a row of the stream table which is empty. Only non-empty rows of the stream table may be changed or deleted.

Variable Fields:<*var1*> is the specified stream table entry.

Action to be Taken: Use the verify stream command to determine the contents of the stream table.

12.2.57 UI242

Message Format: UI_STNOTABLE INFO: There are no entries in the stream table.

Explanation of Message: A request has been made to display the contents of the stream table using the verify stream command, however, the stream table is currently empty.

Variable Fields: None

Action to be Taken: Entries may be added to the stream table by use of the enter stream command.

12.2.58 UI243

Message Format: UI_ST_FULL INPUT ERROR: The stream table is already full (max entries =<*var1*>).

Explanation of Message: An attempt has been made to add an entry to the stream table using the enter stream command, however, the stream table is currently full.

Variable Fields:<*var1*> is the maximum number of entries allowed in the stream table entry.

Action to be Taken: If you want to add another row, use the delete stream command to delete an existing row from the stream table.

12.2.59 UI244

Message Format: UI_STNEWROW INFO: Stream table entry assigned stream_no = <*var1*>.

Explanation of Message: An entry has been added to the stream table.

Variable Fields:<*var1*> identifies the stream table row where the entry was placed. Future references to this stream table entry will be made by use of this row number.

Action to be Taken: No action necessary.

12.2.60 UI245

Message Format: UI_ST_DUPS INPUT ERROR: The connection ID <*var1*> already exists in the stream table.

Variable Fields: Each connection ID specified in the stream table must be unique. The connection ID given already exists.

Variable Fields:<*var1*> is the specified connection ID.

Action to be Taken: The delete stream command may be used to delete entries from the stream table.

12.2.61 UI251

Message Format: INFO: There are no entries in the host table.

Explanation of Message: The command verify net has been entered, but the net table is empty.

Variable Fields: None

Action to be Taken: Entries may be added to the Host table by use of the enter net command.

12.2.62 UI252

Message Format: INPUT ERROR: The host table partition is already full (max entries = <*var1*>.

Explanation of Message: An attempt has been made to add an entry to the net table, however, the partition of the net table to which the entry is to be added is currently full. The net table is divided into three partitions, with a fixed maximum number of entries in each partition. The partition a new entry is added to is determined by the host type.

Variable Fields:<*var1*> identifies the maximum number of entries allowed in the partition.

Action to be Taken: If you want to add another row, use the delete net command to delete an existing row from the Host table.

12.2.63 UI253

Message Format: INFO <*var1*><*var2*> assigned host_no = <*var3*>

Explanation of Message: An entry has been added to the net table.

Variable Fields:<*var1*> is host type. <*var2*> is host name. <*var3*> identifies the net table row where the entry was placed. Future references to this net table entry will be made by use of this row number.

Action to be Taken: No action necessary.

12.2.64 UI254

Message Format: INPUT ERROR: <*var1*> name is invalid: <*var2*>

Explanation of Message: Either the primary name or the alias specified is invalid.

Variable Fields:<*var1*> indicates the host name or the alias name. <*var2*> is the reason the name is invalid. Reasons could be:

- Name is too long or contains invalid characters.

  Valid host names must be 24 characters or less and consist only of alpha-numeric characters with the leading character an alpha.

- Host name is reserved.

  There is a list of reserved host names which may not be used.

- Host name matches uname.

  The host name may not match or begin with the system's uname. For a duplex system, the partner system's uname is similarly not allowed.

- Host name already defined.

  There is already an existing name in the /etc/hosts file.

Action to be Taken: Re-enter the command with a valid host name specified.

12.2.65 UI255

Message Format: INPUT ERROR: The specified host name entry (<*var1*>) is empty.

Explanation of Message: A request has been made to change, delete, or verify a row of the net table which is empty.

Variable Fields:<*var1*> is the net table row specified.

Action to be Taken: Use the verify net command to determine the contents of the Host table.

12.2.66 UI256

Message Format: COMMAND FAILED: Host table <*var1*> operation failed.

Explanation of Message: An internal processing failure prevented the user's command from being carried out.

Variable Fields:<*var1*> identifies the user operation selected.

Action to be Taken: Re-enter the command. If this message occurs repeatedly, contact your local maintenance support organization.

12.2.67 UI257

Message Format: INPUT ERROR: The specified network address is invalid.

Explanation of Message: The network address must consist of four dot separated fields. Each field being a number between 1 and 255. For example, 190.1.1.5.

Variable Fields: None

Action to be Taken: Re-enter the command with a valid IP address.

12.2.68 UI258

Message Format: INPUT ERROR: Only the IP address may be changed for table entries of type partner.

Explanation of Message: An attempt was made to change a net table entry of type partner. The attempt included a change to some field other than the IP address.

Variable Fields: None

Action to be Taken: None

12.2.69 UI259

Message Format: INPUT ERROR: <*var1*> operation not allowed for table entries of type <*var2*>.

Explanation of Message: An attempt was made to perform an operation on a net table entry which is not allowed. The change operation is not allowed for entries of type interface. The delete operation is not allowed for entries of type interface or partner.

Variable Fields:<*var1*> is the type of operation requested. <*var2*> is the type of net table entry.

Action to be Taken: None

12.2.70 UI260

Message Format: INPUT ERROR: Interface host <*var1*> not in Data Server host table.

Explanation of Message: An attempt to disable an interface failed because the host name associated with the interface is not in the net table. It is possible for system interfaces to be defined directly to the OS, bypassing the net commands. When this is done, it is not possible to use the disable net command on the interface.

Variable Fields:<*var1*> identifies the interface host name.

Action to be Taken: None

12.2.71 UI261

Message Format: INPUT ERROR: Interface <*var1*> specified is not valid.

Explanation of Message: The interface name specified is not recognized by the system.

Variable Fields:<*var1*> identifies the interface name given.

Action to be Taken: Re-enter the command with a valid network interface name.

12.2.72 UI262

Message Format: INPUT ERROR: Interface <*var1*> is already enabled.

Explanation of Message: The specified interface to enable is already enabled.

Variable Fields:<*var1*> identifies the interface name given.

Action to be Taken: None

12.2.73 UI263

Message Format: INPUT ERROR: Interface <*var1*> is not enabled.

Explanation of Message: The specified interface to disable is not enabled.

Variable Fields:<*var1*> identifies the interface name given.

Action to be Taken: None

12.2.74 UI264

Message Format: INFO: Creating host table entry for <*var1*> on partner <*var2*>. Use change net to set correct IP address for this entry.

Explanation of Message: When interfaces are enabled on a duplex system, a partner entry is also added to the net table for the corresponding network interface on the partner system. These entries are created with an arbitrary network address, which should be changed to the correct value by use of the change net command.

Variable Fields:<*var1*> identifies a network interface on the partner system. <*var2*> identifies the host name assigned that network interface.

Action to be Taken: Use the change net command to associate the correct IP address with this entry.

12.2.75 UI265

Message Format: INPUT ERROR: Interface address <*var1*> is not unique.

Explanation of Message: The IP address assigned to an interface must be unique. No other entry in /etc/hosts may have the same address.

Variable Fields:<*var1*> identifies the IP address specified interface.

Action to be Taken: Re-enter the command with a unique IP address.

12.2.76 UI280

Message Format: INPUT ERROR: The specified schedule table entry (<*var1*>) is empty.

Explanation of Message: An attempt has been made to change or delete information in a row of the schedule table which is empty. Only non-empty rows of the schedule table may be changed or deleted.

Variable Fields:<*var1*> identifies the empty schedule table row.

Action to be Taken: Use the verify schedule command to determine the contents of the schedule table.

12.2.77 UI281

Message Format: INFO: There are no entries in the schedule table.

Explanation of Message: A request has been made to display the contents of the schedule table using the verify schedule command, however, the schedule table is currently empty.

Variable Fields: None

Action to be Taken: Entries may be added to the schedule table by use of the enter schedule command.

12.2.78 UI282

Message Format: INPUT ERROR: The schedule table is already full (max entries = <*var1*>).

Explanation of Message: An attempt has been made to add an entry to the schedule table using the enter schedule command, however, the schedule table is currently full.

Variable Fields:<*var1*> is the maximum number of entries allowed in the schedule table.

Action to be Taken: If you want to add another schedule, use the delete schedule command to delete an existing schedule from the Schedule table.

12.2.79 UI283

Message Format: INFO: Schedule table entry assigned sched_no = <*var1*>.

Explanation of Message: An entry has been added to the switch table.

Variable Fields:<*var1*> identifies the schedule table row where the entry was placed. Future references to this schedule entry will be made by use of this row number.

Action to be Taken: None

12.2.80 UI284

Message Format: ERROR: A schedule field exceeds the max length of <*var1*> characters.

Explanation of Message: A field specified for the schedule table is too long.

Variable Fields:<*var1*> is the maximum length of any schedule table field.

Action to be Taken: Re-enter the command, making sure that fields are less than the specified maximum number of characters in length.

12.2.81 UI285

Message Format: INPUT ERROR: Specified component <*var1*> is invalid.

Explanation of Message: The value specified for the schedule table component field is invalid.

Variable Fields:<*var1*> is the specified component field value.

Action to be Taken: Re-enter the command. Currently the only allowed value for the component field is ddiout.

12.2.82 UI300

Message Format: INPUT ERROR: The <*var1*> entered <*var2*> does not exist in /etc/hosts.

Explanation of Message: Connection IDs and DPMS names must be entered in the network table (/etc/hosts) first. The host name entered was not found in the network table.

Variable Fields:<*var1*> indicates the type of host name that was being entered, either dpms id, or connection id. <*var2*>is the host name entered.

Action to be Taken: Use the enter net command to first add the host name to the network table, then re-enter this command.

12.2.83 UI301

Message Format: INPUT ERROR: Invalid parameter length. <*var1*> must be between <*var2*> and <*var3*>characters.

Explanation of Message: The parameter entered is of invalid length.

Variable Fields:<*var1*> is the name of the entered parameter. <*var2*> is the minimum length for the parameter. <*var3*> is the maximum length for the parameter.

Action to be Taken: Re-enter the parameter, with a correct length.

12.2.84 UI302

Message Format: INPUT ERROR: The <*var1*> should be in the range <*var2*> -<*var3*>; the system ulimit = <*var4*>.

Explanation of Message: The value specified for the parameter is out of range. The value must be within given minimum/maximum values and must also be less than the system ulimit.

Variable Fields:<*var1*> is the name of the entered parameter. <*var2*> is the minimum value for the parameter. <*var3*> is the maximum value for the parameter. <*var4*> is the system ulimit value.

Action to be Taken: Re-enter the command with a value which is in range.

12.2.85 UI303

Message Format: INPUT ERROR: The <*var1*> should only contain digits and should be in the range <*var2*> - <*var3*>.

Explanation of Message: The value specified for the parameter is invalid. Acceptable values will be numeric and within the specified range.

Variable Fields:<*var1*> is the name of the entered parameter. <*var2*> is the minimum value for the parameter. <*var3*> is the maximum value for the parameter.

Action to be Taken: Re-enter the command with a value which only contains digits and is within the acceptable range.

12.2.86 UI304

Message Format: INPUT ERROR: The <*var1*> should be an integer value between <*var2*> and <*var3*> both inclusive.

Explanation of Message: The value specified for the parameter is invalid. Acceptable values will be numeric and within the specified range.

Variable Fields:<*var1*> is the name of the parameter. <*var2*> is the minimum value for the parameter. <*var3*> is the maximum value for the parameter.

Action to be Taken: Re-enter the command with a value which only contains digits and is within the acceptable range.

12.2.87 UI305

Message Format: INPUT ERROR: The <*var1*> should be greater than <*var2*> records.

Explanation of Message: The value specified for the parameter is invalid. Acceptable values will be numeric and within the specified range.

Variable Fields:<*var1*> is the name of the entered parameter. <*var2*> is the minimum value for the parameter

Action to be Taken: Re-enter the command with a value which only contains digits and is within the acceptable range.

12.2.88 UI306

Message Format: INPUT ERROR: The <*var1*> entered does not exist.

Explanation of Message: The device name specified does not exist.

Variable Fields:<*var1*> is the name of the entered parameter.

Action to be Taken: Re-enter the command with a value which is a valid tape device.

12.2.89 UI307

Message Format: ERROR: The <*var1*> entered is not a character special file.

Explanation of Message: The device name specified is not a character special file.

Variable Fields:<*var1*> is the name of the entered parameter.

Action to be Taken: Re-enter the command with a value which is a valid tape device. The permission of a valid character special device will be crw-rw-rw-.

12.2.90 UI308

Message Format: INPUT ERROR: The <*var1*> must contain <*var2*> digits in <*var3*> range.

Explanation of Message: The parameter value entered must be the specified number of digits and within the given range.

Variable Fields:<*var1*> is the name of the entered parameter. <*var2*> is the number of digits required. Leading zeros may be used (e.g. 0001). <*var3*> is the allowable numeric range.

Action to be Taken: Re-enter the command with a value which is in range and has the correct number of digits.

12.2.91 UI309

Message Format: INPUT ERROR: The last sequence number <*var1*> for <*var2*> is not zero.

Explanation of Message: A switch table connection ID may only be changed if data has never been collected from the switch.

Variable Fields:<*var1*> is the current sequence number of last record collected. A non-zero value indicates data has been collected from the switch. <*var2*> is the current connection ID for the switch.

Action to be Taken: This safe-guard may be worked around by deleting and re-adding the switch information.

12.2.92 UI310

Message Format: INPUT ERROR: The number of days has to be 0, 1, 2, 3, 4 or 'all'

Explanation of Message: The display bfs report is capable of displaying data for zero to four days ago, or all days. The days' parameter must be one of these values.

Variable Fields: None

Action to be Taken: Request the report with a valid number of days specified.

12.2.93 UI311

Message Format: WARNING: Number of <*var1*> in display exceeds limit <*var2*>, display truncated.

Explanation of Message: The display billfile report is limited in the number of bytes and records it can display. This message is generated when that limit is exceeded. The report is truncated to the size limit.

Variable Fields:<*var1*> indicates the limit exceeded, either input records, or output bytes. <*var2*> is the limit.

Action to be Taken: Re-run the report with a smaller range of files selected.

12.2.94 UI313

Message Format: UI_PORTINUSE INPUT ERROR: The ddi_ftp_port number specified is already selected by <*var1*> application.

Explanation of Message: The ddi_ftp_port value selected must be unique across all applications. If a ddi_ftp_port number is specified which is not unique, then this message is generated.

Variable Fields:<*var1*> names the application with the conflicting ddi_ftp_port value.

Action to be Taken: Choose a different port number.

12.2.95 UI326

Message Format: INPUT ERROR: The specified dpms table entry <*var1*> is empty.

Explanation of Message: An attempt has been made to change or delete information in a row of the DPMS table which is empty. Only non-empty rows of the DPMS table may be changed or deleted.

Variable Fields:<*var1*> identifies the empty DPMS table row.

Action to be Taken: Use the verify dpms command to determine the contents of the DPMS table.

12.2.96 UI327

Message Format: INFO: There are no entries in the dpms table.

Explanation of Message: A request has been made to display the contents of the DPMS table using the verify dpms command, however, the DPMS table is currently empty.

Variable Fields: None.

Action to be Taken: Entries may be added to the DPMS table by use of the enter dpms command.

12.2.97 UI328

Message Format: INPUT ERROR: The dpms table is already full (max entries = <*var1*>)

Explanation of Message: An attempt has been made to add an entry to the DPMS table using the enter dpms command, however, the DPMS table is currently full.

Variable Fields:<*var1*> is the maximum number of entries allowed in the DPMS table.

Action to be Taken: If you want to add another row, use the delete dpms command to delete an existing row from the DPMS table.

12.2.98 UI329

Message Format: INFO: DPMS table entry assigned dpms_no = <*var1*>.

Explanation of Message: An entry has been added to the switch table.

Variable Fields:<*var1*> identifies the DPMS table row where the entry was placed. Future references to this DPMS entry will be made by use of this row number.

Action to be Taken: None

12.2.99 UI330

Message Format: INPUT ERROR: The DPMS ID <*var1*>already exists in the dpms table.

Explanation of Message: An entry has been added to the switch table.

Variable Fields:<*var1*> identifies the DPMS table row where the entry was placed. Future references to this DPMS entry will be made by use of this row number.

Action to be Taken: None

12.2.100 UI341

Message Format: UI_ANOENTRY INPUT ERROR: The specified application table entry <*var1*> is empty.

Explanation of Message: An attempt has been made to change or delete information in a row of the application table which is empty. Only non-empty rows of the application table may be changed or deleted.

Variable Fields:<*var1*> identifies the empty application table row.

Action to be Taken: Use the verify application command to determine the contents of the application table.

12.2.101 UI342

Message Format: UI_ANOTABLE INFO: There are no entries in the application table.

Explanation of Message: A request has been made to display the contents of the application table using the verify application command, however, the application table is currently empty.

Variable Fields: None

Action to be Taken: Entries may be added to the application table by use of the enter application command.

12.2.102 UI343

Message Format: UI_AP_FULL INPUT ERROR: The application table is already full (max entries = <*var1*>).

Explanation of Message: An attempt has been made to add an entry to the application table using the enter application command, however, the application table is currently full.

Variable Fields:<*var1*> specifies the maximum number of entries in the application table.

Action to be Taken: If you want to add another row, use the delete application command to delete an existing row from the application table.

12.2.103 UI344

Message Format: UI_ANEWROW INFO: APPL table entry assigned appl_no = <*var1*>.

Explanation of Message: An entry has been added to the application table.

Variable Fields:<*var1*> identifies the application table row where the entry was placed. Future references to this application table entry will be made by use of this row number.

Action to be Taken: No action necessary.

12.2.104 UI345

Message Format: UI_AP_DUPS INPUT ERROR: The APPL ID <*var1*> already exists in the application table.

Explanation of Message: Each application ID specified in the application table must be unique. The application ID given already exists.

Variable Fields:<*var1*> specifies the Application ID in the application table.

Action to be Taken: If a new application is being added, obtain a unique ID for that application.

12.2.105 UI346

Message Format: UI_AP_NOTSTOP INFO: You must stop the system prior to performing this operation.

Explanation of Message: Creation of an application results in the system automatically creating new directories and new processes that will run. The activities need to be performed when the system is in a stopped state.

Variable Fields: None

Action to be Taken: At a convenient time, stop the system, define the new application(s), and then start the system. The system CANNOT process billing data when it is stopped.

12.2.106 UI347

Message Format: UI_AP_APPFORM COMMAND FAILED: Attempt to apply format failed (exit code =<*var1*>).

Explanation of Message: The format name specified either does not exist or there is something wrong with the format definition (for example, input file format, output file format, or format conversion).

Variable Fields:<*var1*> specifies the exit code.

Action to be Taken: Use the verify format command to get a list of available format names.

12.2.107 UI348

Message Format: UI_AP_CNFGAPP COMMAND FAILED: Attempt to configure application failed (exit code =<*var1*>).

Explanation of Message: Attempt to add or delete directories associated with a change, enter or delete of an application failed.

Variable Fields:<*var1*> specifies the exit code.

Action to be Taken: Retry operation. If the condition persists, contact your local maintenance support organization.

12.2.108 UI350

Message Format: INFO Audit in progress. Use 'dis-log: logfile=audit;' to view results.

Explanation of Message: The AMADNS file audit has been started in the background. Any changes made to the AMADNS file index will be noted in the audit log.

Variable Fields: None

Action to be Taken: None

12.2.109 UI360

Message Format: INFO: Daily Teleprocessing Summary Report has been sent to the ROP.

Explanation of Message: The Daily Teleprocessing Summary is being sent to the *5ESS*® ROP.

Variable Fields: None

Action to be Taken: None

12.2.110 UI380

Message Format: UI_FTAMBADID Login ID selected <*var1*> already in use, please select another.

Explanation of Message: The login ID given to the enter ftam_login command is already in use on the Data Server.

Variable Fields:<*var1*> specifies the login ID.

Action to be Taken: Select a different login ID.

12.2.111 UI381

Message Format: UI_FTAMEXISTS An FTAM login ID <*var1*> has already been defined.

Explanation of Message: Only one FTAM login may be specified per application. This message indicates that an attempt was made to enter a second FTAM login.

Variable Fields:<*var1*> specifies the login.

Action to be Taken: To change the FTAM login, use the change ftam_login command.

12.2.112 UI382

Message Format: UI_FTAMNULL The FTAM login has not been defined.

Explanation of Message: This message indicates an attempt was made to change the FTAM login, when no FTAM login has been defined.

Variable Fields: None

Action to be Taken: To create an FTAM login, use the enter ftam_login command.

12.2.113 UI420

Message Format: INPUT ERROR: Rex is already disabled.

Explanation of Message: An attempt was made to disable REX when REX was not enabled.

Variable Fields: None

Action to be Taken: None.

12.2.114 UMAT240

Message Format: Destination directory <*var1*> has not cleared after <*var2*> seconds.

Explanation of Message: There are several synchronization points in the Data Server. These synchronization points inhibit one component while another completes its work. This message indicates that a component timed out waiting for go-ahead from another component.

Variable Fields: Synchronization uses file system directories. When the directory has emptied it is okay for the component to proceed. <*var1*> field names the directory being waited on. <*var2*> is the time out period.

Action to be Taken: If this conditions persists, contact your local maintenance support organization.

12.3 User Interface Messages Review

(1) Why are User Interface messages generated by the system?

To provide additional information when you enter commands.

(2) Will you find the User Interface messages in the log file?

No

(3) Define the following User Interface output messages.

UI004 - An internal communication problem. Reenter the command.

UI106 - You need to have adm permissions.

UI300 - Connection IDs and DPMS names must be entered in the (/etc/hosts) first. Host name entered not found in network table. Action: Use the enter net command to populate the network table and reenter.

UI350 - AMADNS file audit has been started in the background. Action: None

GLOSSARY

-- A --

ACCS
Automated Calling Card Service

ACTS
Automated Coin Toll Service

AMA
Automatic Message Accounting. This acronym usually refers to AMA billing data.

AMADNS
Automatic Message Accounting Data Networking System

APS
Automated Position System

ARU
Alarm Relay Unit. A desktop unit that provides audible and visual alarms. Three levels of alarms are provided: critical, major, and minor. This unit is part of the event message/alarm interface.

Active
Mode of operation for a Data Server system. An active system receives, processes, and transmits billing data. The other system modes are standby and stopped.

Administrative database
Collection of data on disk that contains the values for the administrative parameters. The administrative parameters are used to customize your Data Server.

Administrative parameters
Variables that you can specify to customize certain aspects of the Data Server. The administrative parameters allow you to specify the length of the inactivity time-out security feature, the frequency of password aging, and other variables related to the system.

Administrator
Person(s) responsible for managing a system. For the Data Server, there are two kinds of administrators: the application administrator and the system administrator.

Application administrator

Level of security on the Data Server system. The application administrator specifies administrative parameters, sets aggregation intervals, administers login IDs, and can switch the active and standby systems. The application administrator can also perform any of the commands available to the user.

-- B --

BAF
Bellcore Automatic Message Accounting Format. This is the required format for records that are transmitted from the Data Server to the collector. A BAF record contains billing data that has been collected into a record and formatted according to Bellcore Automatic Message Accounting Format.

BCD
Binary Coded Decimal

Billing source
System in the billing teleprocessing network that collects billing data from the network. The billing source sends usage records to the Data Server.

Billing teleprocessing network
Group of systems that collect usage data from the network to produce billing records. The billing teleprocessing network includes a generating system, Data Server, and Data Processing and Management System (DPMS).

-- C --

CDR
Call Detail Record is a generic term for a record that may report charging, measurement, and maintenance data. CDR's are comprised of a series of data item values of known lengths written in a fixed order.

Collector
A collector is Data Processing and Management System in the billing teleprocessing network that provides centralized collection of billing records from the Data Server to the billing mainframe in the Revenue Accounting Office (RAO).

Collector data link
Arrangement used by the Data Server to transmit billing data to the collector. The data link may be accomplished by either dedicated lines or modems.

Command line mode
Mode for entering input commands. In this mode, you enter all the information the system needs to perform the command on the command line. Commands can also be entered using prompting mode.

-- D --

DDI
Data Server/Data Processing and Management Systems Interface

DPMS
Data Processing and Management System

Data item value
The numerical data recorded in a Call Detail Record field. A data item value corresponds to an entry in an AMA table. Data items may be recorded as binary, hexadecimal, or Binary Coded Decimal (BCD) numbers.

Disk
Type of hardware equipment that stores data.

Duplex configuration
Hardware configuration consisting of two identical systems that are connected to each other. This arrangement provides high reliability because if one system fails, the other system takes over the processing without a loss of data.

-- E --

Ethernet
Interface used to connect the two Data Server systems in a duplex configuration.

-- F --

FTAM
File Transfer, Access, and Management communication and file transfer protocol that provides secure file transmission utilizing point to point X.25 communications, between the network elements and the Data Server. FTAM is based upon CCITT recommendations and ISO standards.

FTP
File Transfer Protocol

-- G --

GDI
Generating System to Data Server Interface

-- H --

Hardware
The physical components of the Data Server system: the computer, the disk drives, connecting equipment, and so on.

-- I --

Inactivity time-out
Security feature of the Data Server. If a user is logged onto the Data Server for a specified period of time without entering any commands, the system will automatically log the user out of the system. The period of time that the system waits can be specified by using the change admnparm usrtimeout command.

Initial installation
Procedure for loading the software on the Data Server for the first time. An initial installation erases all of the information that is currently on the machine and installs the software needed to run the Data Server.

Initialization
Procedure for specifying initial values for key system parameters on your Data Server.

Interface
The method of communication between two systems or two parts of the same system.

Intra-LATA service
Communication service that is provided within a specific Local Access and Transport Area (LATA).

-- L --

LNP

Local Number Portability.

Log of user activity
Security feature of the Data Server. The log records all commands that are performed on the system along with the date and time. The application administrator can view the log of user activity by using the display log type=cmd command.

Login ID
Unique identification for each Data Server user. A login ID and password are required to access the Data Server.

-- M --

Multi-Switch Configuration
System configuration which allows several switches to be connected to the server at the same time through a trunking arrangement.

-- N --

Named parameter entry
Method of specifying variables on the command line. Some commands allow you to enter parameters using this method by typing the name of the parameter to be entered followed by the parameter value on the command line. Some commands also allow you to use position defined parameter entry.

Network element
Any switch which generates call detail records.

-- O --

OSPS
Operator Service Position System

Operating System
The collection of programs that monitor and control all other programs and all other system resources on a computer.

Optional parameter
Information that is not required to perform a command. If this information is not specified on the command line, the system uses the default value for the parameter. Optional parameters in the admnparm command set may be removed from the administrative database using the none keyword.

-- P --

PC
Personal computer.

Parameter
Variable that you specify in a command. There are two ways to enter parameters on the command line: named parameter entry and position defined parameter entry. The prompting mode may also be used to enter parameters.

Password aging
Security feature of the Data Server. Password aging automatically requires passwords to be changed at regular intervals. The change admnparm pswdage command is used to customize this feature.

Position defined parameter entry
Method of specifying variables on the command line. The parameters are defined by their positions in

the command line and can only be entered in a specific order. Some commands also allow you to use named parameter entry.

Primary data
The data on the Data Server that has been collected from the generating system, but has not been sent to the DPMS.

Prompting mode
Mode for entering input commands. The Data Server prompts you for the information required to complete a command. Commands can also be entered using command line mode.

-- R --

RAO
Revenue Accounting Office

ROP
Read Only Printer interface. This is an RS232 interface which provides visual alarms.

RTCD
Real Time Call Detail is the name chosen for the equivalent of Call Detail Records (CDRs) written by the 5ESS-2000 Long Distance Platform or Toll switch.

Required parameter
Information that is needed to perform a command. If the required parameter values are not specified on the command line, the system prompts for the information.

root
Special login ID used by the system administrator. *UNIX*® Operating System commands are used with the root login ID.

-- S --

Secondary data
The data on the Data Server that has been sent to the DPMS.

Security level
One of three groups of access permissions on the Data Server: user, application administrator, or system administrator. Different commands are available to different security levels.

Simplex configuration
Hardware arrangement that contains only one system for processing and storing data. The Data Server is effectively operating in a simplex configuration when one of the systems is stopped or shut down. See duplex configuration.

Standby
Mode of operation for a Data Server system. In a duplex configuration, the Standby system mirrors everything the active system does.

Stopped
Mode of operation for a Data Server system. A system in the stopped mode does not have the Data Server application software running. The other system modes are active and standby.

Switch
Any system that generates call detail records.

Switch Table
Database table containing all database fields for the switch commands and multi-switch configuration

parameters.

System administrator
Level of security on the Data Server system. The system administrator uses *UNIX*® Operating System commands and the root login ID. The other security levels are application administrator and user.

-- T --

TCP/IP
Transport Control Protocol/Internet Protocol of the Internet protocol.

Tape drive
Hardware component of the Data Server that billing files may be written to.

-- U --

umatadm
Special login ID provided for Data Server application administrators.

umatsup
Special login ID provided for Lucent Technologies support personnel.

***UNIX*® Operating System**
The operating system used by the Data Server application.

Upgrade
Update to the Data Server software.

User
Level of security on the Data Server system. A user can enter report and test commands. The other security levels are application administrator and system administrator.

