

HP Internet Advisor for LAN Network Performance Analysis

At LAN data rates, it doesn't take long for your capture buffer to fill with frames. Even with the best protocol decoding capability, you can waste valuable time sifting through data searching for the problem. While you could use filters or triggers to restrict what goes into the buffer, how can you be sure of what to trigger on?

Network performance analysis uses statistical techniques to reduce volumes of captured data to meaningful information. Performance analysis measurements can tell you **what** the problem is, **why** it is happening, and even **who** is causing it — without requiring you to look at a single decoded protocol frame.

The HP Internet Advisor for LAN provides the most comprehensive statistical measurements available on any protocol analyzer. These powerful, easy-to-use measurements will change the way you troubleshoot network problems.

The network summary statistics, or "**dashboard**," combines the most important information about the overall health of the network, displaying network utilization over time, errors, protocol mix and traffic activity by node — all on a single screen. The dashboard provides an instant indication that a problem exists on the network, and **what** that problem is.

Set thresholds for each measurement, and the Internet Advisor for LAN will **alert** you, both visually and via the event log, if that threshold is ever exceeded. That way, you'll know immediately when a problem occurs.

The trends display correlates different statistical measurements over time. Many network performance parameters are measured simultaneously for Ethernet, token-ring, or FDDI, and any four can be plotted together on the same horizontal (time) axis. Cause-and-effect relationships become immediately apparent. Are errors concentrated in periods of high traffic? Is server congestion related to the level of remote source routing frames? Very often, the trends display can tell you why a problem is occurring.

Internet Advisor for LAN can store up to seven days of statistical performance data on a single

Internet Advisor for LAN problem solving series — No. 5.

screen. If that is not enough, statistical data can be stored to the disk in amounts limited only by available disk space. The file can be exported to a standard PC spreadsheet program for further analysis or for report generation using HP Internet Reporter (HP J2531A) baselining software. Statistical performance data can also be stored by the Internet Advisor for later review.

Statistical performance data is also measured and tracked for each individual station or node on the network. The Internet Advisor for LAN monitors the traffic sent and received, errors, broadcasts and routing information for each network node. This information is tracked for up to 800 nodes simultaneously, and the node list can be sorted on the results of any of the various measurements. By viewing network performance with **node statistics**, you'll quickly see **who** is involved in a network fault.

With the Internet Advisor for LAN, you're not limited to running only a single measurement at a time. The Internet Advisor keeps track of any or all performance measurements simultaneously, even while generating traffic, running active stimulus/response tests, capturing data packets, or performing any other measurement. Its never too busy to give you all the information you need to isolate and resolve problems quickly.

Network Performance Analysis Measurements

Ethernet/802.3

Ethernet Vital Signs	
Utilization	Runts (with good FCS)
Frames	Jabbers
Local Collisions	Noise Delays
Remote Collisions	Dribble Frames
Late Collisions	Broadcast Frames
Remote Late Collisions	Multicast Frames
Dashboard Display	
Uilization (percent vs. time)	
Collisions (gauge)	
Errors: sum of Jabbers, Runts, Misaligns, and Bad FCS (gauge)	
Broadcasts, Multicasts, Unicasts (pie chart)	
Layer 3 Protocol Mix (pie chart)	
Node Count (gauge)	
Bytes/Frame (gauge)	
User selected node activity for 7 nodes (horizontal bar chart of frame count)	

Trends Display (graphical or tabular)

any four of the following measurements can be time correlated: Utilization (percent, frames/sec or Kbytes/sec vs. time) Collisions (count vs. time) Errors: Jabbers, Runts, Misaligns and bad FCS (count vs. time) Broadcasts, Multicasts, Unicasts (count vs. time) Any protocol (up to 5) in pie chart (frame count vs. time) Node Count (up to 7 nodes, frames/sec vs. time) Bytes/Frame (count vs. time) Any User-Selected Node (frame count vs. time)

Token-Ring/802.5

Burst Errors

Token-Ring Vital Signs Utilization Line Errors Frames Soft Errors Code Violations Beacons Aborts Claim Tokens Receiver Congestion Ring Purges

Dashboard Display Utilization (percent vs. time) Ring Purges (gauge) Soft Errors (gauge) Claim Tokens (gauge) Beacons (gauge) Station Count (gauge) Source Routing mix (pie chart) Layer 3 Protocol Mix (pie chart) User selected node activity for 7 nodes (horizontal bar chart of frame count)

Missed Frames

Trends Display (graphical or tabular)

any four of the following measurements can be time correlated: Node Count (up to 7 nodes, frames/sec vs. time) Any protocol (up to 5) in pie chart (frame count vs. time) Utilization (percent, frames/sec or Kbytes/sec vs. time) MAC Frames (count vs. time) MAC Bytes (count vs. time) Tokens (count vs. time) Ring Purges (count vs. time) Beacons (count vs. time) Claim Tokens (count vs. time) Soft Errors (count vs. time) Bytes/Frame (count vs. time) Stations Inserted in Ring (count vs. time) Broadcast Frames (count vs. time) Multicast Frames (count vs. time) Routing: Local to Remote (frame count vs. time) Routing: Local to Local (frame count vs. time) Routing: Remote to Local (frame count vs. time) Routing: Remote to Remote (frame count vs. time) Line Errors (count vs. time) Internal Errors (count vs. time) Burst Errors (count vs. time) A/C Errors (count vs. time) Abort Errors (count vs. time) Lost Frame Errors (count vs. time) Receiver Congestion Errors (count vs. time) Frame Copy Errors (count vs. time) Frequency Errors (count vs. time) Token Errors (count vs. time)

FDDI

Dashboard Display Utilization (percent vs. time) All errors or any one of the following: Bad FCS Violations E-bit set Preamble too short PDU too long Destination Addresses (pie chart): (S) Broadcasts, Multicasts, Unicasts Layer 3 Protocol Mix (pie chart) (S) User selected node activity for 7 nodes (horizontal bar chart of frame count) (S) Frame type (pie chart): Tokens, LLC Frames, Stripped frames, MAC, SMT, other Trends Display (graphical or tabular) any four of the following can be time correlated: Utilization (percent, frames/sec or Kbytes/sec vs. time) Tokens (count vs. time) LLC Frames (count vs. time) Stripped Frames (count vs. time) Data Bytes (count vs. time) Token Rotation Time (present value) Bad FCS Frames (count vs. time) Violations (count vs. time) E-bit Set (count vs. time) Preamble too short (count vs. time)

PDU too long (count vs. time)

Claim Frames (count vs. time) Beacon Frames (count vs. time) MAC Frames (count vs. time) SMT Frames (count vs. time) Broadcast Frames (% vs. time) (S) Multicast Frames (% vs. time) (S) Unicast Frames (% vs. time) (S) Selected Stations (% vs. time) (S)

(S) = available only in sample mode

Station Performance Analysis (see "Node Statistics/Node Discovery")



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