

HP 4990S LanProbe Distributed LAN Analysis System

Technical Data

Product Numbers
HP 4990A, HP 4990S
HP 4991A, HP 4992A
HP 4993A, HP 18490A

Overview

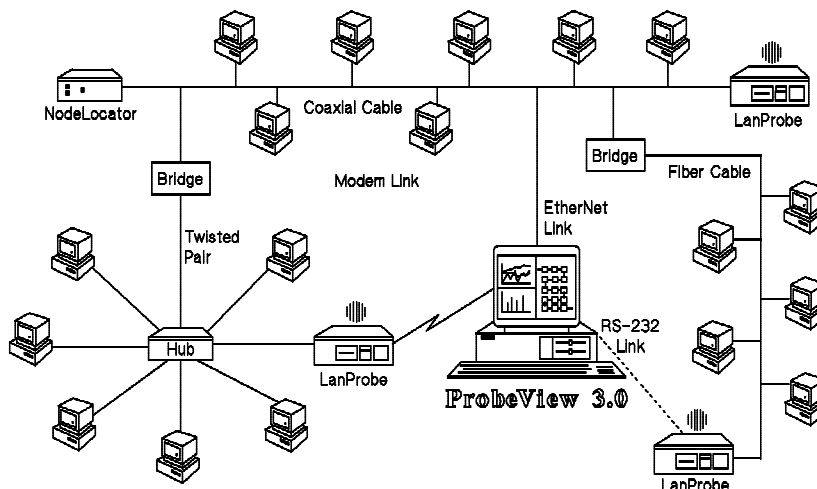
The HP LanProbe distributed LAN analysis system from Hewlett-Packard gives local area network managers the power to systematically maintain, intelligently manage, and plan the growth of Ethernet networks.

With unprecedented ease-of-use, the HP LanProbe system monitors, tests, and diagnoses virtually all aspects of your network and presents its findings in clear, color graphics.

The HP LanProbe system enables a network manager to monitor all critical aspects of a remote or local network from

one central vantage point. It tracks the range of problems that can plague an Ethernet LAN, including those related to the cable, communications software, traffic load, equipment malfunction, and even user error. Furthermore, the system's rich array of statistics and extensive export capabilities finally enables network planning to be based on facts—not guesses.

LanProbe & ProbeView Configuration



The system consists of one or more HP 4991A LanProbe segment monitors and HP 4990A ProbeView™ 3.0 software running under Microsoft® Windows 3.0.

HP 4991A LanProbe Segment Monitor

The HP LanProbe segment monitor attaches to the end of an Ethernet segment and monitors all traffic. Attachment can be made directly to a thin or thickcoaxial cable, or via an external transceiver to fiber optic or twisted pair cabling.

Network data relating to the segment is transferred to a workstation running HP ProbeView via RS-232-C, an Ethernet adapter, or a modem connection. Network data relating to the segment is transferred to a workstation running HP ProbeView via RS-232-C, an Ethernet adapter, or a modem connection.

HP 4990A ProbeView C.00.00 Software

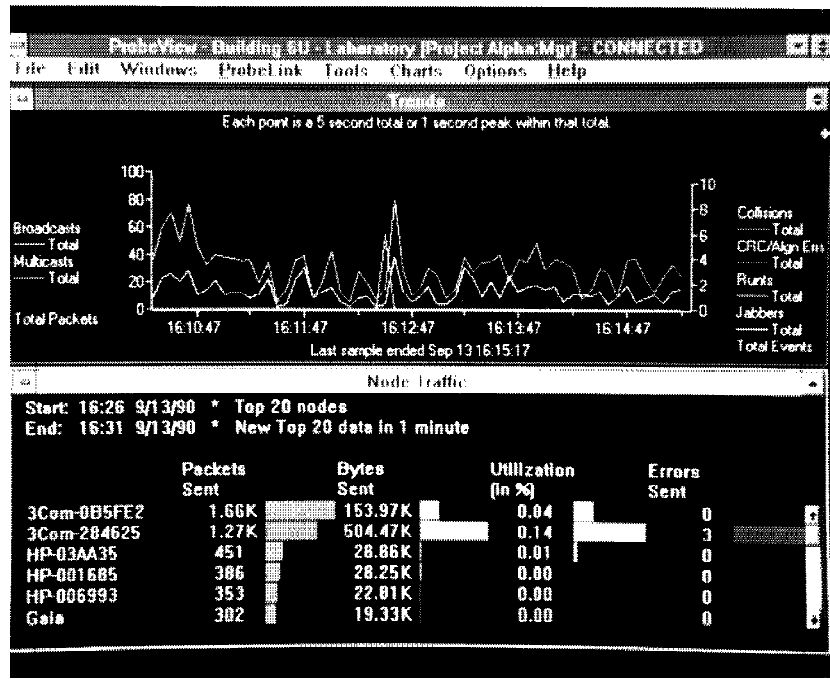
HP ProbeView C.00.00 software, which runs on a PC/AT or PS/2 workstation, presents network information in graphical displays. Running under Windows, its point-and-click logic and simplicity help ensure that the system pays dividends from day one.

HP 4992A NodeLocator

The NodeLocator option attaches to the opposite end of the cable from the HP LanProbe segment monitor. It automatically locates the position of nodes on Ethernet networks using coaxial cabling schemes.

HP 4993A ProbeView Console

A fully-configured HP Vectra PC with all the necessary software, including HP ProbeView, is provided as an option. Because all of the required workstation hardware and software are properly



installed and configured by HP, the user has the convenience of virtually instant system use.

Put Your LAN on the Map

Installed in minutes, the HP LanProbe system quickly and automatically identifies all active nodes on a segment and displays them on a map with their adapter vendor names and addresses. You can enter additional information about the nodes—such as equipment types, their location, and other notes – into the database by simply clicking on an icon and typing in the desired data.

When the NodeLocator option is used, the relative distances of the nodes are automatically discovered and scaled on the map to accurately depict the physical layout of the segment.

Thereafter, when a new node is installed and becomes active, or one is moved or becomes inactive, the change will be detected and dynamically shown on your map. The HP LanProbe system provides an unmatched tool for documenting your network.

Addressing Your LAN's Weakest Link

The most vulnerable part of an Ethernet LAN is the cable itself. This cabling is subject to considerable abuse, which can bring the whole network down. Tracking the source of a problem through the labyrinth of building ducts, walls, and conduits is often a nightmare. With the HP LanProbe system, you can conduct sensitive tests to assure the continual good condition of the coaxial cable.

When a fault is detected, you are alerted and given its precise location on the map; all you need to do is go to that place and fix it.

Vital Statistics

The HP LanProbe system continuously monitors vital parameters of a LAN segment to learn the network's operating norms. Traffic statistics, such as valid packets, collisions, errors, and broadcasts, are gathered and displayed on a "QuickView" chart. This gives a clear snapshot of the LAN's operation in an easy-to-understand format that also makes anomalies immediately apparent. Current activity, peaks, and averages are displayed, and you can set threshold levels for any of the parameters. In the event that your specified thresholds are exceeded, the HP LanProbe will alert you—even if you are not currently connected to it—and make a log entry. It can also forward these alerts as SNMP traps to other network management consoles.

"Trends" showing the ebb and flow of segment activity are also charted. You can choose to view these on a daily basis or at any other preferred time interval.

"Node Traffic" presents the key LAN variables specific to each node, with the option of only reviewing the top 20 nodes or plotting all node traffic on the segment. This chart, like any other, can be copied and pasted into other Windows 3.0 applications, enabling the generation of authoritative performance reports and memos.

Echo Tests

An extensive set of echo tests using IP, DECnet and Novell® protocols, provides immediate node response status, which is depicted on both network and segment maps. Automatic background testing allows you to check your most critical nodes continually. Echo statistics from these tests reflect the quality of internet performance in terms of response times and rates. Statistics that can be exported are: maximum, minimum, average, and current echo response times and number of successful tries.

Solving Protocol Mysteries

A LAN's performance is radically affected by the inner workings of complicated and invisible protocols. When the rules governing these protocols are violated or contradict themselves, a network can be rendered inoperative or unreliable. The HP LanProbe system looks at every packet to give you insight to your network's activity.

The Trace capability enables you to capture packets and examine their architecture. It flags bad packets, facilitating the quick identity of their origin. In addition to the trace tool's library of the 28 most commonly used filters, you have the complete flexibility to create your own filters to look for packets of particular interest.

Decodes Option

An optional protocol analysis option translates the content of each packet into English. This facilitates solving numerous problems such as: client-server connectivity, protocol mismatches, and excessive broadcasts. The protocol analysis option now lets you decode AppleTalk, Banyan Vines, DECnet, OSI, Novell NetWare®, TCP/IP, XNS—all from the console.

SNMP Traps

HP ProbeView alerts can now be received by SNMP management consoles, such as HP's OpenView, through SNMP traps. These include information on status of both IP and non-IP nodes, threshold exceeded, and cable faults. In this way the HP LanProbe system becomes a powerful subsystem for SNMP enterprise network management. It gives you a much deeper view of individual LAN operations than from just an SNMP management "umbrella."

Other Key Features

A Log of critical events that occur on the segment is provided. This information, including thresholds exceeded, duplicate IP address detected, power outage, new node discovered, node aged, cable fault, and many other items, is automatically entered in the log. This data is uploaded whenever connected to HP ProbeView software. With any of the predefined filters installed, protocol specific events are now flagged. Log data can be sent to an online printer for continuous printing and, as with statistics, can also be exported.

AutoPolling enables a schedule to be set for HP ProbeView to connect with any HP LanProbe segment monitor, collect specified information, and optionally back up the system. Trends, Node Traffic, Map, and Log data can thus be gathered on a continual basis and saved in standard MS-DOS® CSV files. These files, which may also be automatically appended over an extensive period of time, can then be used by spreadsheets, databases, and other applications for further analysis and reporting.

Alert Manager enables multiple HP LanProbe segment monitors to connect to HP ProbeView simultaneously to deliver an alert message. When an alert has been received, the Alert Manager icon pulsates red with an accompanying beep. The alert message can be read by clicking the icon. All alerts are automatically entered into the log.

Filters and Tests

The HP LanProbe system comes with a library of predefined filters and built-in network tests that can be used in conjunction with trace tool or the log. Some of these are listed below:

- runts, jabbers, broadcasts, multicasts
- alignment and CRC errors
- 3Com diagnostics run for 3C501, 3C503, 3C505
- bad Ethernet source addresses
- ICMP parameter problems
- ICMP time exceeded
- bad IP addresses
- SNMP Traps

Concurrent operation of all HP ProbeView functions – map, log, trace, statistics alert management, and echo – is an essential part of the HP LanProbe design. It allows documentation of critical events and the observation of significant correlations, giving you in-depth analysis of the LAN's operation. All tools can be displayed simultaneously as windows, providing a method to

quickly and easily navigate from one to another. Furthermore, HP ProbeView can be run simultaneously with other Windows 3.0 applications.

Remote out-of-band access is provided for HP LanProbe through an integral 2,400 baud modem or an external Hayes-compatible modem. This works in exactly the same manner as if the workstation running HP ProbeView were directly connected to the HP LanProbe segment monitor through an RS-232-C or an Ethernet port. In-band remote access is possible through any IP router or gateway.

The export of Map, Trends, NodeTraffic, Log, and echo tests can be done automatically through AutoPolling into MS-DOS CSV files. Manual export into MS-DOS files of this data, and that of trace, is also possible.

Specifications

HP 4991A LanProbe Segment Monitor

Data capture rate: 10 Mbps

Network compatibility: Ethernet version 2.0, IEEE 802.3 compatible

Transceiver connector: 15-pin D subminiature connector with slide latch

Ethernet connector: Standard BNC* (BNC-to-N type connector included)

Modem: Internal, 2400 baud modem standard; support for external Hayes-compatible modem

Termination: Internal 50 Ohm, switchable

Cable test: Standard; opens: range 50-1700 feet, accuracy 2% or ± 10 feet shorts: range 50-600 feet, accuracy 2% or ± 10 feet

Standard compliance: FCC part 68; CSA 556B, CSA 22.2 #0.7 complies with IEC 348; meets FTZ 1064/84; UL 1244

Dimensions (hxwxd): 4.15 \times 16.3 \times 17.5 inches (10.5 \times 41.4 \times 44.5 cm)

Weight: 16 pounds (7.26 kilograms)

Power requirements: 120 VAC/240 VAC

Power consumption: 35 watts

Operating environments: Temperature = 0° to 55°C, Humidity = 0% to 90% noncondensing

Storage temperature: -40°C to +70°C

* HP LanProbe provides electrical grounding for the coaxial cable when connected via the optional internal transceiver

HP 4992A NodeLocator

Network compatibility: Ethernet version 2.0, IEEE 802.3 compatible

Ethernet connector: BNC (BNC-to-N type connector included)

Termination: Internal 50 Ohm, switchable

Standard compliance: CSA 556B, IEC 348, UL 1244

Dimensions (hxwxd): 1.64 \times 5.57 \times 7.20 in (4.17 \times 14.15 \times 18.29 cm)

Weight: 1.2 pounds (.55 kilograms)

Power requirements: 120 VAC or 240 VAC, separate module

Power consumption: 5 watts

Operating environments: Temperature = 0° to 55°C, Humidity = 0% to 90% noncondensing

Storage temperature: -40°C to +70°C

HP 4990A ProbeView Software Host Requirements

(For preconfigured solution see HP 4993A HP ProbeView Console.)

Host computer: HP Vectra PC, IBM PC/AT, PS2, or compatible 386 class computer

Memory: 2 Mbytes or more recommended

Floppy disk: 1.2 Mbyte 5¼-inch, or 1.44 Mbyte 3½-inch

Hard disk: 4 Mbytes free space after installing Windows

Graphic interface: Windows-compatible EGA or VGA

Mouse: Windows-compatible mouse

DOS: 3.3 or higher

Windows: 3.0 or higher (for optimal performance, use Windows extended memory and disk cache drivers)

Serial port: COM1 or COM2

Printer (not required): HP PaintJet; HP LaserJet, DeskJet, and ThinkJet families; HP 7550 plotter; Epson 9-pin dot matrix; PostScript® laser printer

Phone line: Required for remote access only, RJ11 analog connection for direct dial

Network access: HP 27250A ThinLAN, 27245A EtherTwist, 27210A or B ThinLan, 27236A StarLAN 10, 3Com 3C501, 3C503, 3C523, and other cards supported by HP ARPA Services 2.1

Network access software: ARPA 2.1 HP D1812B

HP 4993A ProbeView Console

ProbeView: HP 4990A HP ProbeView Manager

Host computer: HP Vectra 386/25 Personal Computer, video controller card, keyboard

Memory: 4 Mbytes

Floppy disk: 1.44 Mbyte 3½-inch

Hard disk: 84 Mbytes

Graphic interface: Super VGA color display

Mouse: Windows compatible HP mouse

Network access: HP 27250A ThinLAN card

DOS: HP Vectra MS-DOS version 3.3, USA

Windows: MS Windows version 3.0, USA

Network Access software: ARPA 2.1 HP D1812B

Ordering Information

HP 4990A ProbeView Software

Requires Microsoft Windows version 3.0 or higher and HP ARPA Services (D1812B option 0012) for Ethernet card support.

Options:

- 100** Adds HP ProbeView Observer Software with HP ProbeView Manager software
- 200** Adds Protocol analysis capability
- 300** Adds HP ARPA Services
- 400** Adds Microsoft Windows
- 500** Replaces English manual with Japanese manual

HP 4991A LanProbe Segment Monitor

Options:

- 001** Deletes cable test, BNC connector, and NodeLocator capability*
- 002** Deletes internal modem*
- 003** Deletes cable test, BNC connector, internal modem, and NodeLocator capability

HP 4992A NodeLocator (optional)

Automatically locates nodes on coaxial cable. Requires cable test, BNC connector, and NodeLocator capability with HP LanProbe. Will not work with HP 4991A options 001 or 003.

* Once deleted, cannot be retrofitted

HP 4993A ProbeView Console

HP Vectra Intel 386/25 with 4 Mbytes memory and 3½-inch floppy disk drive. Has VGA monitor, HP 27250A ThinLAN card and HP mouse. Comes with HP ProbeView, HP ARPA

Services, and MS Windows installed.

Options:

- 003** Adds an additional 2 Mbytes memory
- 004** Adds an additional 4 Mbytes memory
- 005** Deletes HP ProbeView Manager software, adds HP ProbeView Observer software
- 006** Adds 5¼-inch floppy disk drive
- 007** Deletes ThinLAN card, adds EtherTwist card
- 008 A** Adds protocol analysis capability

HP 18490A ProbeView Observer Software

HP 18491A Protocol Analysis Option (for existing HP ProbeView installations) Requires version B.00.00 or higher.

Support Services

The following HP support options are available for HP LanProbe system products.

HP 4990A ProbeView Manager Software update service (contract for 1 year)

Contains appropriate upgrades for HP ARPA Services and Microsoft Windows.
+UA6 Media is 5¼-inch disk
UA8 Media is 3½-inch disk

HP 4991A LanProbe Firmware update service (contract is for 1 year)

- U0J** Firmware updates only HP 4991A LanProbe Hardware support contracts
- W30** 3 year return to HP
- 02A** Priority support 8 a.m.–9 a.m.
- 02B** Next Day support 8 a.m.–9 a.m.
- 22B** Return to HP support HP 4992A NodeLocator Hardware support contracts
- W30** 3 year return to HP
- 02A** Priority support 8 a.m.–9 a.m.
- 02B** Next Day support 8 a.m.–9 a.m.
- 22B** Return to HP support

HP 18490A ProbeView Observer Software update service (contract is for 1 year)

Contains appropriate upgrades for HP ARPA Services and Microsoft Windows.
UA6 Media is 5¼-inch disk
UA8 Media is 3½-inch disk

HP 18491A Protocol Analysis Option Software update service (contract is for 1 year)

UA6 Media is 5¼-inch disk
UA8 Media is 3½-inch disk

Microsoft® and MS-DOS® are U.S. registered trademarks of Microsoft Corporation.
Novell® and NetWare® are U.S. registered trademarks of Novell Corporation.
PostScript® is a registered trademark of Adobe Systems, Inc. in the U.S. and other countries.