HP Internet Advisor LAN makes it easier and more efficient for you to isolate and solve problems on your Ethernet, Token-Ring or FDDI local area networks. With HP Internet Advisor LAN, you can connect anywhere on the network, capture exactly the data you need, and clearly see and comprehend the actions you need to take. You’ll be able to find it, and fix it fast, like never before.

**LAN testing made easy**

HP Internet Advisor lets you connect anywhere on the network, capture all the necessary data, and with its exclusive Expert Analysis feature, comprehend that information as it isolates problems and provides solutions. HP Internet Advisor LAN troubleshooting tools include seven-layer protocol decodes, active stimulus/response tests, and a large collection of network performance statistics. Its most powerful capability—drill down—makes troubleshooting your network as simple as using a computer mouse. It’s very often the only tool you’ll need to identify the cause of the problem—and resolve it the first time you connect.

No matter what the traffic level, HP Internet Advisor LAN transforms data into meaningful diagnostic information, constantly monitoring the traffic on your Ethernet, Token-Ring or FDDI local area network. HP Internet Advisor LAN reduces thousands of frames to a handful of significant events. It watches continuously for router misconfigurations, slow file transfers, inefficient window sizes, connection resets, and many other problems. It does this for each protocol stack you have running, all in real time — as events actually occur.

**Key Features**

HP Internet Advisor LAN combines uncompromised monitoring and analysis and powerful, complete PC capabilities — all in a lightweight, easy-to-carry package.
- Network Vitals help you anticipate many network problems
- Commentators help you solve network problems quickly and easily using Expert Analysis
- Comprehensive test and analysis solutions for 10/100 Mbps Ethernet, 10/100 Mbps Switched Ethernet, 10/100 Mbps full-duplex Ethernet, Gigabit Ethernet, 4/16 Mbps Token-Ring, and FDDI
- All major protocol stacks on all media
- More than 100 statistical parameters measured
- All media interfaces have hardware filtering and RISC analysis processors for uncompromised data-capture performance
Specifications—Hardware

HP Internet Advisor LAN offers versatility and flexibility, with a combination of mainframes and attachable undercradles that provide additional data acquisition systems to allow you to configure the precise tool for your needs.

HP Internet Advisor Mainframe

For Ethernet and Fast Ethernet

HP Internet Advisor LAN – Fast Ethernet (HP J3446D)

Analysis system:
AMD 29040 at 40 MHz with 32 MB memory

PC system:
- 300 MHz CPU with 128 Mbytes of memory
- Monitor: 26.5 cm (10.4 in) diagonal active matrix TFT color SVGA (standard)
- 3 Gbyte hard drive
- 1.4 Mbyte 3.5 inch floppy disk drive
- Two Type I/II PCMCIA slots or one Type III slot
- Built-in tracking device or external mouse
- 9-pin serial and 25-pin parallel port
- VGA or SVGA external monitor port
- Windows® and MS-DOS®
- Expansion slots provided via the undercradle

Test interfaces

Ethernet:
- AUI connector
- RJ-45 for 10Base-T
- Second RJ-45 allows testing in switched Ethernet environment

Fast Ethernet:
- MII connector
- RJ-45 for 100 Base-TX
- Second RJ-45 allows testing in switched Fast Ethernet environment

- HP J3445A 100 Base-FX interface (for HP J3444A), HP J3447A 100 Base-FX interface (for the HP J3446C)
- 2 SC type connectors
- Multimode fiber
- 1300 nm wave length

HP Internet Advisor Undercradles

For Ethernet

HP Internet Advisor LAN – Ethernet (HP J2306B)
HP Internet Advisor LAN – Ethernet and Token-Ring (HP J2309B)

Analysis system:
AMD 29030 at 16 MHz with 16 MB of memory

For Ethernet and Fast Ethernet

HP Internet Advisor LAN - Fast Ethernet (HP J3444A)
- Data rate: 10/100 Mbps with auto-negotiation capability
- Full duplex analysis capability

Analysis system:
AMD 29040 at 40 MHz with 32 MB of memory
Specifications—Hardware, continued

For FDDI

HP Internet Advisor LAN — FDDI interface (HP J2524A)

Analysis system:
   AMD 29030 at 20 MHz with > 26 MB of memory

FDDI chip set:
   Motorola with 68332 processor for SMT
   Data capture capability: >450,000 fps, 100% network load
   Data transmit capability: >450,000 fps

Test interfaces

   Dual fiber MICs for A/S/M and B
   DB-9 for STP
   RJ-45 for UTP
   6 pin mini DIN compatible with AMP-Lytel part no. 501916-6
   bypass switch

Status Indicators

   Front panel LEDs: current line state, A and B ports
      (idle, active, halt, master, noise, or quit)

Status Icons Information

   Station type (DAS, SAS, etc.)
   CMT port status for both ports:
      (OK, ISO [isolated], or WP [wrapped])

For Token-Ring

HP Internet Advisor LAN — Token-Ring (HP J2307A)
HP Internet Advisor LAN — Ethernet and Token-Ring (HP J2309B)

Analysis system:
   AMD 29030 at 16 MHz with 16 MB of memory

Test interfaces

   Token-Ring:
      - DB-9 at 4 or 16 Mbps
Specifications—Protocol Decodes

MAC and LLC Decodes for Ethernet/Fast Ethernet, and Token-Ring:
- 802.2 ■ ○
- Ethernet/802.3 ■
- Token-Ring/802.5 ○
- SNAP (Subnet Access Protocol) ■ ○
- ELAP (EtherTalk Link Access Protocol) ■
- TLAP (TokenTalk Link Access Protocol) ○

MAC and LLC Decodes for FDDI only:
- Full MAC layer decode showing
  - Preamble length
  - Frame control field
  - Source and Destination addresses
- Frame status indicators include:
  - Valid frame check sequence
  - Error in preamble or frame length
  - Error in info field or frame termination
  - Receipt of specific violation symbols
  - Count of symbols in control indicator field
- Full SMT decode of 6.2 and 7.2 SMT frame types
  - Frame class and types
  - NIF, SIF ECF, RAF, RDF, SRF, PMF, ESF
  - Version, transaction and station ID
  - Info field length and parameters

TCP/IP Protocol Stack
- ARP (Address Resolution Protocol) RFC826 ■ ○ ▲ ▼
- BGP (Border Gateway Protocol) RFC1105 ▼
- BGP-4 (Border Gateway Protocol version 4) RFC1771 ▼
- BOOTP (BOOT Protocol) RFC951 ■ ○ ▲ ▼
- DHCP (Dynamic Host Configuration Protocol) ▼
- DNS (Domain Name Service) RFC1035 ▼
- EGP (Exterior Gateway Protocol) RFC904 ▼
- FINGER (Finger User Information) RFC1196 ▼
- FTP (File Transfer Protocol) RFC959 ■ ○ ▲ ▼
- GGP (Gateway to Gateway Protocol) RFC823 ▼
- HTTP (Hypertext Transfer Protocol) ▼
- HTTP 1.1 (Hypertext Transfer Protocol 1.1) ▼
- ICMP (Internet Control Message Protocol) RFC792 ■ ○ ▲ ▼
- IGMP (Internet Group Management Protocol) ■ ○ ▲ ▼
- IGRP (Internet Gateway Routing Protocol) ■ ○ ▲ ▼
- IP (Internet Protocol) RFC791 ■ ○ ▲ ▼
- IPv6 (Internet Protocol v.6) ▼
- NetBIOS (NetBios) ▼
- NTP (Network Time Protocol) RFC1119 ▼
- OSPF (Open Shortest Path First) RFC1247 ■ ○ ▲ ▼
- Routed (Route Daemon Protocol) RFC1993 ▼
- RARP (Reverse Address Resolution Protocol) RFC903 ■ ○ ▲ ▼
- REXEC (Remote Exec) ▼

Symbol use:
- Ethernet/Fast Ethernet (ST) ■
- Token-Ring (ST) ○
- FDDI (ST) ▲
- Ethernet/Fast Ethernet (LinW) ▼

Throughout the Specifications listings in this booklet, you may see the following symbols used to denote network types when certain specs apply to more than one.
### Specifications—Protocol Decodes, continued

<table>
<thead>
<tr>
<th>Protocol Stack</th>
<th>Symbol Use</th>
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<td>RIP (Routing Information Protocol)</td>
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<td>RIP-2 (Routing Information Protocol version 2)</td>
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<tr>
<td>RLOGIN (Remote Login) RFC1282</td>
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<td>RPRINT (RLPR) Remote Print</td>
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<td>RSHELL (Remote Shell)</td>
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<tr>
<td>RWHO (Remote Who) RFC954</td>
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<tr>
<td>SMB (Server Message Block)</td>
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<tr>
<td>SMTP (Simple Mail Transport Protocol) RFC821</td>
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<tr>
<td>SNMP (Simple Network Management Prot.) RFC1157</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>SNMP-II (SNMP Version 2)</td>
<td>▼</td>
</tr>
<tr>
<td>TCP (Transmission Control Protocol) RFC793</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>TCP/IP compression Van.Jacobsen Compression</td>
<td>▼</td>
</tr>
<tr>
<td>TELNET (Telnet) RFC854</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>TFTP (Trivial File Transfer Protocol) RFC783</td>
<td>▼</td>
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<tr>
<td>TIMED (Time Daemon Protocol)</td>
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</tr>
<tr>
<td>UDP (User Datagram Protocol) RFC768</td>
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</tr>
<tr>
<td>XWIN (XWindows)</td>
<td>▼</td>
</tr>
</tbody>
</table>

### AppleTalk Protocol Stack

<table>
<thead>
<tr>
<th>Protocol Stack</th>
<th>Symbol Use</th>
</tr>
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<tbody>
<tr>
<td>AARP (AppleTalk Address Resolution Protocol)</td>
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<tr>
<td>AEP (AppleTalk Echo Protocol)</td>
<td>□ ○ △</td>
</tr>
<tr>
<td>ADSP (AppleTalk Data Stream Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>AFP (AppleTalk Filing Protocol)</td>
<td>▼</td>
</tr>
<tr>
<td>ASP (AppleTalk Session Protocol)</td>
<td>▼</td>
</tr>
<tr>
<td>ATP (AppleTalk Transaction Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>DDP (Datagram Delivery Protocol) Phase 1 and 2</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>ELAP (Ethernet Link Access Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>NBP (Name Binding Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>PAP (Printer Access Protocol)</td>
<td>▼</td>
</tr>
<tr>
<td>RTMP (Routing Table Maintenance Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>SoftTalk (SoftTalk Session layer protocol)</td>
<td>▼</td>
</tr>
<tr>
<td>ZIP (Zone Information Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
</tbody>
</table>

### Banyan/Vines Protocol Stack

<table>
<thead>
<tr>
<th>Protocol Stack</th>
<th>Symbol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS (Applications Services)</td>
<td>▼</td>
</tr>
<tr>
<td>Matchmaker (Program to Program Communications)</td>
<td>▼</td>
</tr>
<tr>
<td>VARP (Banyan Vines Address Resolution Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>VECO (Banyan Vines Echo Protocol)</td>
<td>▼</td>
</tr>
<tr>
<td>VICP (Internet Control Protocol) like ICMP</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>VIP (BanyanVines Internet Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>VIPC (Vines Interprocess Communications Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>VRTP (Banyan Vines Routing Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
<tr>
<td>VSMB Server Message Block</td>
<td>▼</td>
</tr>
<tr>
<td>VSPP (Vines Sequence Packet Protocol)</td>
<td>□ ○ △ ▼</td>
</tr>
</tbody>
</table>

### DECnet and DECnet Phase IV Protocol Stack

<table>
<thead>
<tr>
<th>Protocol Stack</th>
<th>Symbol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTERM (Command Terminal)</td>
<td>▼</td>
</tr>
</tbody>
</table>

**Symbol use:**

- Ethernet/Fast Ethernet (ST) | □
- Token-Ring (ST) | ○
- FDDI (ST) | ▲
- Ethernet/Fast Ethernet (LinW) | ▼
Specifications—Protocol Decodes, continued

DAP (Data Access Protocol) □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
DNS (Distributed Name Services) ▼
DRP (DEcnet Routing Protocol) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
FOUND (Found) ▼
LAT (Local Area Transport Protocol) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
MOP (Maintenance Operations Protocol) ▼
NICE (Network Information and Control Exchange) ▼
NSP (Network Services Protocol) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
SCP (Session Control Protocol) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼

IBM PC LAN
NetBIOS □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
SMB (Server Message Block) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼

IBM/SNA
BPDU (Bridged Protocol Data Unit) 802.1 Spanning tree ▼
Data Flow Control (Session layer) ▼
DIAP (Document Interchange Arch. Protocol) ▼
DCAP (Document Content Arch. Protocol) ▼
DSP (Distributed Services Protocol) ▼
Function Management (Function Management) ▼
FSP (File Services Protocol) ▼
General Data Stream (General Data Stream) ▼
LLC (Logical Link Control) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
Management Services (Management Services) ▼
NCP (Network Control Protocol) ▼
NetBIOS Session layer □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
Path Control (Network layer) ▼
SCP (Session Control Protocol) ▼
SDLC (Synchronous Data Link Control) ▼
SNA (Systems Network Architecture) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
SMB (Server Message Block) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
Transmission Control (Transport layer includes FID0, 2, 3, 4, F) ▼

ISO Protocol Stack
ACSE (Association Control Services) ISO 8650 ▼
ASN.1 (Abstract Syntax Notation) ▼
CLNP (Connectionless Mode Network Prot.) ISO 8473 □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
CMIP (Common Management Information Protocol) ▼
CMIP GDMO (Common Management Information Prot. GDMO) ▼
CMISE (Common Mgt Information Service Element) □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
ES-IS (End System-Intermediate System) ▼
IS-IS (Intermediate System-Interm. Syst.) ISO 10589 □ □ □ □ □ □ ▲ ▲ ▲ ▲ ▲ ▼
ISO PP (ISO Presentation ISO 8823, X.226) ▼

Symbol use:
Ethernet/Fast Ethernet (ST) ■
Token-Ring (ST) ◆
FDDI (ST) ▲
Ethernet/Fast Ethernet (LinW) ▼
Specifications—Protocol Decodes, continued

ISO SP (ISO Session ISO 8327) ▼
ROSE (Remote Operation Service Element) ISO9072 ▼
RTSE (Reliable Transfer Service Element) ISO9066 ▼
SMB (Server Message Block Protocol) ■ ▲ ▲ ▲ ▲ ▲ ▲
TP0 (Transport Protocol Class 0) ISO 8073 ▼
TP1 (Transport Protocol Class 1) ISO 8073 ▼
TP2 (Transport Protocol Class 2) ISO 8073 ▼
TP3 (Transport Protocol Class 3) ISO 8073 ▼
TP4 (Transport Protocol Class 4) ISO 8073 ▼
X.400 Electronic Mail X.400 ISO 10021 ▼
X.500 Directory Services X.500 ISO 9594 ▼

Novell Protocol Stack including rev. 3.2 and 4.0

Diagnostic (Diagnostic) ▼
Echo (XNS protocol over IPX instead of IDP) ▼
Error (XNS protocol over IPX instead of IDP) ▼
IPX/IPD (Internet Packet Exchange) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲
NetBIOS (NetBIOS) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲
NCP 2.x (Netware Core Protocols version 2.x) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲
NCP 3.x (Netware Core Protocols version 3.x) ▼
NCP 4.x (Netware Core Protocols version 4.x) ▼
NLSP (Netware Link Services Protocol) ▼
Packet Burst (Packet Burst) ▼
PEP (Packet Exchange Protocol) ▼
RIP (XNS protocol) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
SAP (Service Advertising Protocol) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
SPX/SPP (Sequence Packet Exchange) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲

Microsoft LAN Manager

DS (Datagram Services) RFC 1001 ▼
NetBIOS (NetBIOS) RFC 1001/1002 ▼
SS (Session Services) RFC 1001 ▼
NS (Name Services) RFC 1001 ▼
SMB (Server Message Block) ▼

Media

Ethernet/802.3 (Ethernet Data Link Control) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲
Token Ring/802.5 (Token Ring MAC layer) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
FDDI (FDDI) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
FDDI SMT (FDDI SMT) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
LLC Logical (Link Control) ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
SNAP (Subnetwork Access Protocol) RFC1042 ■ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲

Symbol use:

Ethernet/Fast Ethernet (ST) ■
Token-Ring (ST) ○
FDDI (ST) ▲
Ethernet/Fast Ethernet (LinW) ▼
SUN Stack
- BOOTPARAM (Boot Parameters)
- MOUNT (Mount)
- NFS (Network File System) RFC 1094
- NIS (Network Information Services) formerly YP
- PCNFSD (PC Network File System)
- PMAP (Port Mapper)
- RLOCK (RLOCK)
- RPC (Remote Procedure Call) RFC1057
- RSTAT (Remote Statistics) YP Yellow Pages

XNS
- Echo (Echo)
- Error (Error)
- IDP (Internet Datagram Protocol)
- PEP (Packet Exchange Protocol)
- RIP (Routing Information Protocol)
- SPP (Sequenced Packet Protocol)

Cisco
- DLSw ((Data Link Switching)
- IGMP (Internet Group Management Protocol)
- IEEE 802.1p (VLAN - GARP, GVRP, GMRP)
- IEEE 802.10
- IEEE 802.1Q
- IGRP (Internet Gateway Routing Protocol)
- ISL (Cisco Inter-Switch Link Protocol)

3Com Protocol Stack
- 3COM-NBP (Name Binding Protocol)
- 3COM-NetBIOS (NetBIOS)

Application Level
- Oracle
- Sybase

Other
- Apollo

Specifications—Network Performance Statistics

For Ethernet/Fast Ethernet

Ethernet/Fast Ethernet Vitals
- Utilization
- Frames
- Local Collisions
- Remote Collisions
- Late Collisions
- Remote Late Collisions
- Runts (with good FCS)
- Jabbers
- Noise Delays
- Dribble Frames
- Broadcast Frames
- Multicast Frames
Dashboard Display

- Utilization (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)

Specifications—Network Performance Statistics, continued

For Token-Ring

<table>
<thead>
<tr>
<th>Token-Ring Vitals</th>
<th>Line Errors</th>
<th>Soft Errors</th>
<th>Claim Tokens</th>
<th>Ring Purges</th>
<th>Missed Frames</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilization</td>
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<td></td>
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<td></td>
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<tr>
<td>Frames</td>
<td></td>
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<td>Code Violations</td>
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<td>Aborts</td>
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<td>Receiver Congestion</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Burst Errors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)

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)
Specifications—Network Performance Statistics, continued

For FDDI

**Dashboard Display**

<table>
<thead>
<tr>
<th>Utilization (% over time)</th>
<th>Frame rate (frames/sec)</th>
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<tbody>
<tr>
<td>Byte counts</td>
<td>Frame types (pie chart)</td>
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<tr>
<td>Tokens</td>
<td>LLC frames</td>
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<tr>
<td>Stripped frames</td>
<td>MAC frames</td>
</tr>
<tr>
<td>Other (SMT and void frames)</td>
<td></td>
</tr>
<tr>
<td>Token rotation time (current value)</td>
<td></td>
</tr>
</tbody>
</table>

**Error condition count**

| Bad FCS | Beacons (gauge) |
| E-bit set | Violations |
| PDU too long | Claim frames (gauge) |

**Destination Addresses (pie chart):**
- Broadcasts, Multicasts, Unicasts

**Layer 3 Protocol Mix (pie chart)**

**User selected node activity for 7 nodes**
- (horizontal bar chart of frame count)

**Frame type (pie chart):**
- Tokens, LLC Frames, Stripped frames, MAC, SMT, and void frames

**Token rotation time (current value)**
- Byte counts, frame rates

**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)
- Multicast Frames (% vs. time)
- Unicast Frames (% vs. time)
- Selected Stations (% vs. time)

When the Internet Advisor for FDDI is in the participating mode, the node-card SMT software maintains node specific counts for the analyzer itself. It records:
- MAC ring op count
- Link error monitor (LEM) count
- LEM reject count
- SMT transmitted errors
Specifications—Node Statistics/Node Discovery

The following measurements are representative of those made and tracked for each network node/station.

The top 20 nodes on the network contributing to the following categories are displayed in either bar, tabular or pie chart: (Note: Data-capture filters can optionally be set while running these measurements, so that only a specific set of nodes are included.)

For Ethernet/Fast Ethernet, FDDI

Frames sent by a node
Frames received by a node
Bytes sent by a node
Bytes received by a node
Broadcast frames sent by a node
Multicast frames sent by a node
Errored frames sent by a node

For Token-Ring

Frames sent by a station
Frames received by a station
Bytes sent by a station
Bytes received by a station
Errors reported by a station
All-stations broadcast frames sent by a station
Frames sent to functional addresses by a station
Source routed broadcast frames sent by a station
Source routed frames sent by a station
Source routed frames received by a station
Line errors reported by a station
Internal errors reported by a station
Burst errors reported by a station
A/C bit errors reported by a station
Abort delimiters sent by a station
Isolating error reserved count sent by a station
Lost frames reported by a station
Receiver congestion reported by a station
Frame copy errors reported by a station
Frequency errors reported by a station
Token errors reported by a station
Non-isolating error reserved count sent by a station
Beacons sent by a station
Claim token frames sent by a station
Ring purge frames sent by a station
Report Soft Error frames sent by a station

MAC frames sent by a station
MAC frame bytes sent by a station
All-route broadcast frames sent by a station
Single-route broadcast frames sent by a station
Source routed frames sent by a station to a local address
Source routed frames sent by a station to a remote address
Source routed frames received by a station from a local address
Source routed frames received by a station from a remote address
Specifications—Protocol and Frame Length Statistics

For Ethernet/Fast Ethernet, Token-Ring, FDDI

Frame length statistics are gathered for the network and up to 20 different protocols simultaneously. HP Internet Advisor LAN shows frame length statistics for all frames on the network and one protocol selected by the user. The selected protocol can be changed at any time using a single key. All frame length statistics for all protocols are logged to disk in CSV format. The frame length buckets for:

<table>
<thead>
<tr>
<th>Ethernet protocols</th>
<th>Token-Ring protocols</th>
<th>FDDI protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;64 bytes</td>
<td>&lt;64 bytes</td>
<td>&lt;64 bytes</td>
</tr>
<tr>
<td>64...127 bytes</td>
<td>64...127 bytes</td>
<td>64...127 bytes</td>
</tr>
<tr>
<td>128...255 bytes</td>
<td>128...255 bytes</td>
<td>128...255 bytes</td>
</tr>
<tr>
<td>256...511 bytes</td>
<td>256...511 bytes</td>
<td>256...511 bytes</td>
</tr>
<tr>
<td>512...1023 bytes</td>
<td>512...1023 bytes</td>
<td>512...1023 bytes</td>
</tr>
<tr>
<td>1024...1518 bytes</td>
<td>1024...2047 bytes</td>
<td>1024...2047 bytes</td>
</tr>
<tr>
<td>&gt;1518 bytes</td>
<td>2048...4095 bytes</td>
<td>2048...4095 bytes</td>
</tr>
<tr>
<td></td>
<td>4096...8191 bytes</td>
<td>4096...4500 bytes</td>
</tr>
<tr>
<td></td>
<td>&gt;8192...16383 bytes</td>
<td>&gt;4500 bytes</td>
</tr>
<tr>
<td></td>
<td>&gt;16383 bytes</td>
<td></td>
</tr>
</tbody>
</table>

Protocol and frame length statistics measurements are run continuously with sample intervals as often as every 10 seconds. The resulting data, when plotted with HP Internet Reporter, shows detailed variations over time of frame length and protocol usage.

Since HP Internet Advisor LAN filters are designed into hardware and are independent of any measurement, the filters can be used to run protocol and frame length measurements on an isolated node or to generate frame length statistics on an unsupported protocol family.

Specifications — Vitals and Commentators

For Ethernet/Fast Ethernet, Token-Ring, and FDDI

AppleTalk Phase 2

Commentator Events:
DDP Hop Count Exceeded
DDP Destination Unreachable
ATP Excessive Retransmission
ASP Session Opened, Rejected, Closed, Slow Transfer Rate
AFP Login, Logout
ADSP Connection Open, Denied, Closed, Slow Transfer Rate,
Excessive Retransmission, Low Window
RTMP Router Change, Router Identified
PAP Open Connection, Close Connection, Printer Busy
ZIP Zone Diameter Exceeded

Vitals:
Network Utilization (%)  Network Utilization, Packets
DDP Utilization (%)      DDP Packets
### Specifications—Vitals and Commentators, continued

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDP Hop Count Exceeded Packets</td>
<td>DDP Packet Size</td>
</tr>
<tr>
<td>AARP Packets</td>
<td>ADSP Fragments</td>
</tr>
<tr>
<td>ATP Fragments</td>
<td>ATP Tickle Packets</td>
</tr>
<tr>
<td>Missed Frames</td>
<td></td>
</tr>
</tbody>
</table>

#### Banyan Vines

**Commentator Events:**
- **VIP Low Hop Count**
- **VIP Broadcast Storm**
- **VSPP Excessive Retransmissions**
- **VSPP Connection Closed**
- **VSPP Low Window**
- **VICP Exception Notification**

#### Vitals

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td>Network Utilization, Packets</td>
</tr>
<tr>
<td>VIP Utilization (%)</td>
<td>VIP Packets</td>
</tr>
<tr>
<td>VIP Packet Size</td>
<td>VIP Hop Count Exceeded</td>
</tr>
<tr>
<td>VIPC Fragments</td>
<td>VIPC Datagram Packets</td>
</tr>
<tr>
<td>VSPP Fragments</td>
<td>VSPP Low Window</td>
</tr>
<tr>
<td>VARP Packets</td>
<td>VRTP Redirects</td>
</tr>
<tr>
<td>Missed Frames</td>
<td></td>
</tr>
</tbody>
</table>

#### Novell

**Commentator Events**
- **Burst Mode:** Connection Reply, Connection Request, File Close,
  File Read, File Write, Transfer rate
- **File:** Create, Open, Read, Reading, Writing, Transfer rate
- **Create Service Connection**
- **Destroy Service Connection**
- **Watchdog Request/Reply Packets**
- **Negotiate Buffer Size**
- **Routing Information Request/Reply Packets**
- **Service Advertising Request/Reply Packets**

#### Vitals

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td>IPX Utilization</td>
</tr>
<tr>
<td>Network Packets</td>
<td>IPX Packets</td>
</tr>
<tr>
<td>Local Tx Rate</td>
<td>Remote Tx Rate</td>
</tr>
<tr>
<td>Burst Mode</td>
<td>RIP Packets</td>
</tr>
<tr>
<td>SAP Packets</td>
<td>Read Request Packets</td>
</tr>
<tr>
<td>Write Request Packets</td>
<td>Busy Server</td>
</tr>
</tbody>
</table>

#### OSI

**Commentator Events:**
- **CLNP Low Lifetime**
- **CLNP Zero Lifetime**
- **CLNP Error PDU**
- **TP Connection Initiated, Rejected, Aborted, and Closed**
- **TP Excessive Retransmissions**
- **TP Low Credit Recovered**
- **ES-IS Redirect**
- **ES-IS Int System Identified**
- **ES-IS Low Holding Time**
- **IS-IS Level 1 Router Hello**
- **IS-IS Level 2 Router Hello**
- **IS-IS Level 3 Router Hello**
### Specifications—Vitals and Commentators, continued

#### Vitals

<table>
<thead>
<tr>
<th>Vitals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td></td>
</tr>
<tr>
<td>CLNP Utilization (%)</td>
<td></td>
</tr>
<tr>
<td>CLNP Packet Size</td>
<td></td>
</tr>
<tr>
<td>CLNP Data PDUs</td>
<td></td>
</tr>
<tr>
<td>TP Error PDUs</td>
<td></td>
</tr>
<tr>
<td>TP Fragments</td>
<td></td>
</tr>
<tr>
<td>Network Packets</td>
<td></td>
</tr>
<tr>
<td>CLNP Packets</td>
<td></td>
</tr>
<tr>
<td>CLNP Error PDUs</td>
<td></td>
</tr>
<tr>
<td>CLNP Low Lifetime</td>
<td></td>
</tr>
<tr>
<td>TP Low Credit</td>
<td></td>
</tr>
<tr>
<td>Missed Frames</td>
<td></td>
</tr>
</tbody>
</table>

#### TCP/IP

**Commentator Events**

- IP: Broadcast Storm, Low Time-To-Live, Zero Time-To-Live, Duplicate Address
- TCP: Low Window, Excessive Retransmission, Close Connection, Open Connection
- RIP: Router Identified, Routing Information Reply, Routing Information Request
- IGRP: Router Identified
- OSPF: Router Identified
- RIP Router Change
- OSPF Designated Router Change
- OSPF Incorrect Hello Time
- OSPF Router Change

#### Vitals

<table>
<thead>
<tr>
<th>Vitals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td></td>
</tr>
<tr>
<td>IP Utilization</td>
<td></td>
</tr>
<tr>
<td>Network Packets</td>
<td></td>
</tr>
<tr>
<td>IP Packets</td>
<td></td>
</tr>
<tr>
<td>IP Broadcasts</td>
<td></td>
</tr>
<tr>
<td>IP Fragments</td>
<td></td>
</tr>
<tr>
<td>ICMP Redirects</td>
<td></td>
</tr>
<tr>
<td>ICMP Unreachables</td>
<td></td>
</tr>
<tr>
<td>Low TTL</td>
<td></td>
</tr>
<tr>
<td>IP Packet Size</td>
<td></td>
</tr>
<tr>
<td>SNMP Packets</td>
<td></td>
</tr>
<tr>
<td>DNS Packets</td>
<td></td>
</tr>
<tr>
<td>ARP Packets</td>
<td></td>
</tr>
<tr>
<td>Low Window</td>
<td></td>
</tr>
<tr>
<td>Routing Packets</td>
<td></td>
</tr>
</tbody>
</table>

**For Ethernet/Fast Ethernet and FDDI only**

#### DECnet

**Commentator Events**

- Level 1 and 2 Router Message
- Ethernet Router Hello Message
- Level 1 and 2 Change Message
- Duplicate Network Address
- Excessive Retransmitted Connect Initiates
- Excessive Retransmission
- Excessive LAT Retransmission
- Connection Initiated, Rejected, Aborted, and Closed
- Flow Control Stop and Resume Data Messages
- LAT Virtual Connection Initiati, Aborted, and Closed
- LAT Service Connection Initiated, Aborted, and Closed
- DAP File Open/Create, Open Error, Close, and Close Error
- DEC V Low and Zero Lifetimes
- DEC V Connection Initiated, Rejected, Closed, and Aborted
- CLNP and TP Error PDUs
- DEC V Low Credit and Low Credit Recovered
- DEC V Excessive Retransmission
Specifications—Vitals and Commentators, continued

DECnet, continued

Vitals

<table>
<thead>
<tr>
<th>Specification</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td>DRP Utilization (%)</td>
</tr>
<tr>
<td>LAT Utilization (%)</td>
<td>MOP Utilization (%)</td>
</tr>
<tr>
<td>LAVC Utilization (%)</td>
<td>Packet Count</td>
</tr>
<tr>
<td>DRP Packet Size</td>
<td>DRP Data Messages</td>
</tr>
<tr>
<td>DRP Control Messages</td>
<td>DRP RTS Packets</td>
</tr>
<tr>
<td>DRP High Visit Count Packets</td>
<td>NSP Fragments</td>
</tr>
<tr>
<td>NSP Retransmission Connect Initiates</td>
<td>DEC V Utilization (%)</td>
</tr>
<tr>
<td>DEC V Packet Size</td>
<td>CLNP Error PDU</td>
</tr>
<tr>
<td>DEC V Data PDU</td>
<td>DEC V Low Lifetime</td>
</tr>
<tr>
<td>TP Error PDU</td>
<td>DEC V Low Credit</td>
</tr>
<tr>
<td>DEC V Fragments</td>
<td>Missed Frames</td>
</tr>
</tbody>
</table>

For Ethernet/Fast Ethernet only

Ethernet/Fast Ethernet

Commentator Events (ICMP Network)

- Unreachable Networks
- Protocol Not Supported
- Fragmentation Needed
- Destination Network Unknown
- Source Host Isolated
- Time-To-Live Count Exceeded
- Parameter Problem
- Destination Network Administratively Prohibited
- Destination Host Administratively Prohibited
- Network Unreachable for Type of Service
- Host Configured with Poor Network Route
- Poor Type of Service and Network Route
- Poor Type of Service and Host Route
- Substantial Subnet Mask Requests
- Excessive Ping and Ping Replies
- Substantial Timestamp Requests

Vitals

<table>
<thead>
<tr>
<th>Specification</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td>Frames</td>
</tr>
<tr>
<td>Local Collisions</td>
<td>Remote Collisions</td>
</tr>
<tr>
<td>Late Collisions</td>
<td>Remote Late Collisions</td>
</tr>
<tr>
<td>Runts with good FCS</td>
<td>Jabbers</td>
</tr>
<tr>
<td>Jabbers with bad FCS</td>
<td>Dribble Frames</td>
</tr>
<tr>
<td>Broadcasts</td>
<td>Multicasts</td>
</tr>
</tbody>
</table>
## Specifications—Vitals and Commentators, continued

**For Token-Ring only**

### Token-Ring

**Commentator Events**

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring Purge</td>
<td>Active Monitor Error</td>
</tr>
<tr>
<td>Inserting Station</td>
<td>NAUN Change</td>
</tr>
<tr>
<td>Successful Insertion</td>
<td>Ring Purging</td>
</tr>
<tr>
<td>Station Removal</td>
<td>Beacon</td>
</tr>
<tr>
<td>New Active Monitor</td>
<td>Streaming Beacons</td>
</tr>
<tr>
<td>Beaconing</td>
<td>Request Station Removed</td>
</tr>
<tr>
<td>Isolating Soft Errors</td>
<td>Monitor Contention</td>
</tr>
<tr>
<td>Non-Isolating Soft Errors</td>
<td>Failed Insertion</td>
</tr>
<tr>
<td>Ring Resetting</td>
<td>Catastrophic Error</td>
</tr>
<tr>
<td>Neighbor Notification Failure</td>
<td></td>
</tr>
</tbody>
</table>

### Vitals

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Utilization (%)</td>
<td>Frames</td>
</tr>
<tr>
<td>Code Violations</td>
<td>Aborts</td>
</tr>
<tr>
<td>Receiver Congestion</td>
<td>Burst Errors</td>
</tr>
<tr>
<td>Line Errors</td>
<td>Soft Errors</td>
</tr>
<tr>
<td>Beacons</td>
<td>Claim Tokens</td>
</tr>
<tr>
<td>Ring Purges</td>
<td></td>
</tr>
</tbody>
</table>

### IBM LAN Manager

**Commentator Events**

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Ring Error Monitor Status</td>
<td>Error Rate Decaying</td>
</tr>
<tr>
<td>Receiver Congestion</td>
<td>Receiver Congestion Ended</td>
</tr>
<tr>
<td>Report Bridge Status</td>
<td>Bridge Counter Report</td>
</tr>
<tr>
<td>Remote Ring Soft Error - Pre-Weight Exceeded</td>
<td></td>
</tr>
<tr>
<td>Remote Ring Soft Error - Weight Threshold Exceeded</td>
<td></td>
</tr>
<tr>
<td>Remote Non-Isolating Soft Error - Threshold Exceeded</td>
<td></td>
</tr>
<tr>
<td>Beaconing Condition on the Ring</td>
<td></td>
</tr>
<tr>
<td>Beaconing Condition Recovered</td>
<td></td>
</tr>
<tr>
<td>Bridge Performance Threshold Exceeded</td>
<td></td>
</tr>
<tr>
<td>Single Route Broadcast Status Change</td>
<td></td>
</tr>
<tr>
<td>List NetBIOS Stations</td>
<td></td>
</tr>
<tr>
<td>List Novell Stations</td>
<td></td>
</tr>
<tr>
<td>List Ring Error Monitors</td>
<td></td>
</tr>
<tr>
<td>List Ring Parameter Servers</td>
<td></td>
</tr>
</tbody>
</table>
Specifications—Stimulus and Response Testing

For Ethernet/Fast Ethernet, Token-Ring, and FDDI

Following are examples of pre-written stimulus/response test sequences:

Media Tests

<table>
<thead>
<tr>
<th>Ethernet/Fast Ethernet</th>
<th>Token-Ring</th>
<th>FDDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet cable integrity test</td>
<td>Token-Ring lobe test</td>
<td>N/A</td>
</tr>
<tr>
<td>Token-Ring ring length</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Response Time Measurements

<table>
<thead>
<tr>
<th>Ethernet/Fast Ethernet</th>
<th>Token-Ring</th>
<th>FDDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICMP Ping</td>
<td>ICMP Ping</td>
<td>ICMP Ping</td>
</tr>
<tr>
<td>ARP Request</td>
<td>ARP Request</td>
<td>ARP Request</td>
</tr>
<tr>
<td>RARP</td>
<td>RARP</td>
<td>RARP</td>
</tr>
<tr>
<td>Active station list</td>
<td>Request station ID (LLC XID)</td>
<td>(local or source-routed)</td>
</tr>
<tr>
<td>Station adapter status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Novell network tests

For Ethernet/Fast Ethernet, Token-Ring, and FDDI

Server Query (test server reachability)
Find nearest server (in time, or nearest server of a specific type)
Server List (list all active Novell Servers)
View Nodes (list all Novell clients)
Node Ping (test client reachability)
Determine connected networks
 (addresses and names of remote networks)

Token-Ring topology tests

For Token-Ring only

List the station address, NAUN, physical location, group, station function, and function address for each of the following:
 Identify Active Monitor
List all bridges
List all stations
List Configuration Report Servers
List LAN Managers
List NetBIOS Stations
List Novell Stations
List Ring Error Monitors
List Ring Parameter Servers
Specifications—Filtering

Filter by Address

For Ethernet/Fast Ethernet, Token-Ring, and FDDI

Either one or two MAC, IP, or IPX addresses can be specified for each filter. These addresses can be combined in any of the following modes:

- traffic from station 1
- traffic to station 1
- traffic to or from station 1
- traffic from station 1 to station 2
- traffic from station 2 to station 1
- traffic between station 1 and station 2

Filter by Frame Attribute

Frames can be filtered by frame attribute. The various frame attributes available are network dependent, and include the following:

**Ethernet/Fast Ethernet**
- Good frames
- Bad FCS frames
- Runs (collisions)
- Jabbers
- Dribbles

**Token-Ring**
- Good frames
- Bad FCS frames
- Ring Purge
- Claim Token
- Beacon
- Remove Ring Station
- Active Monitor Error
- Abort Delimiters
- Incomplete Neighbor
- Notification
- Soft Error
- Source Routed
- Non-Source Routed
- No End Delimiter
- Priority Frames
- E-bit Set
- Token
- All MAC frames

**FDDI**
- Good frames
- Bad FCS frames
- Broadcast frames
- Stripped frames
- Frame Error
- Copied frames
- Address Recognized frames
- Non-restricted Token
- Restricted Token
- Async frames
- Sync frames
- MAC frames
- Beacon frames
- Claim frames
- LLC frames
- Void frames
- SMT frames
- Neighbor Information frames
- Station Information frames
- Configuration SIF
- Operation SIF
- Echo frames
- Resource Alloc frames
- Request Denied frames
- Status Report frames
- Parameter Mgmt frames
- Get PMF
- Change PMF
- Add PMF
- Remove PMF
- Assert PMF
- Extended Services frames
- Reserved frames

Filter by Data

For Ethernet/Fast Ethernet, Token-Ring, and FDDI

Up to 48 bytes may be specified in the data field following the MAC source and destination addresses as filter criteria (or network layer for IP and IPX network filters).
Specifications—Filtering, continued

Multiple Filters
For Ethernet/Fast Ethernet, Token-Ring, and FDDI
Up to 16 filters can be active simultaneously. Multiple active filters are logically Or-ed.

Specifications—Traffic Generator

Ethernet/Fast Ethernet

Load Specification
1 to 99%
1 to 4,000 milliseconds, interframe spacing

Iterations (number of times a group of frames is transmitted):
1 to 100,000,000 or continuous

Number of defined messages:
1 to 32

Pre-defined messages
(templates):
TST Command
XID Request
AppleTalk Echo Request
ARP Request
Fox Message
ICMP Addr Request
ICMP Echo Request
Novell RIP
Ethernet ARP Request
Ethernet DEC Request Sys ID
Ethernet ICMP Addr Request
Ethernet ICMP Echo Request
Ethernet Loopback CTP
Ethernet XNS Echo Request

Message length range
(length includes FCS)
19 to 3,998 bytes

Frame Copy
Copy from another message
Copy from capture buffer

Frame Formats
Ethernet, IEEE 802.3

Number of user-defined bytes per message
(includes address fields):
78 bytes

Pre-defined data patterns
(for data field bytes 15 to 78 of message):
0x00, 0x01, 0x10, 0x55, 0xAA,
0xFF, plus random data

Frame padding selected from these options:
User-defined:
any one byte value 0x00 to 0xFF
Incremental:
pattern increments from 0x00 to 0xFF, then repeats
Random:
data pattern is random

FCS Selection
Good: automatically calculated
Bad: user-definable

Errors: Runts, Jabbers, Bad FCS

Ethernet

Interframe spacing (minimum)
20.0 μS with frame length <64 bytes
13.2 μS with frame length >= 64 bytes

Frames per second (maximum)
24,000 fps with 19 byte frames
14,100 fps with 64 byte frames
810 fps with 1518 byte frames
310 fps with 3998 byte frames

Percent utilization (maximum)
37.0% with 19 byte frames
72.5% with 64 byte frames
98.5% with 1518 byte frames
99.5% with 3998 byte frames
Specifications—Traffic Generator, continued

Token-Ring

Load Specification
1 to 99%
1 to 4,000 milliseconds, interframe spacing

Iterations (number of times a group of frames is transmitted):
1 to 100,000,000 or continuous

Number of defined messages:
1 to 32

Pre-defined messages
(templates):
LLC Fox Message
LLC Request Test
LLC Request XID
MAC Remove Ring Station
MAC Request Ring Station
  Address
MAC Request Ring Station
  Attachments
MAC Request Ring Station State

Message length range
(length includes FCS)
19 to 4,100 bytes (4 Mbps)
19 to 18,000 bytes (16 Mbps)

Frame Copy
Copy from another message
Copy from capture buffer

Frame Formats:
MAC, LLC

Frame Priority: 0 to 6

Number of user-defined bytes per message
(includes address fields):
78 bytes

Pre-defined data patterns
(for data field bytes 15 to 78 of message):
0x00, 0x01, 0x10, 0x55, 0xAA, 0xFF, plus random data

Frame padding selected from these options:
User-defined:
  any one byte value 0x00 to 0xFF
Incremental:
  pattern increments from 0x00 to 0xFF, then repeats
Random:
  data pattern is random

FCS Selection:
Good: automatically calculated
Bad: user-definable

Errors: Bad FCS

Performance Specifications
(4 Mbps) +/- 2%

Interframe spacing (minimum)
286 uS with frame length
  = 19 bytes
150 uS with frame length
  = 75 bytes
55 uS with frame length
  = 132 bytes

Frames per second (maximum)
3300 fps with 19 byte frames
480 fps with 1000 byte frames
120 fps with 4100 byte frames

Percent utilization (maximum)
12.5% with 19 byte frames
96% with 1000 byte frames
98% with 4100 byte frames

Performance Specifications
(16 Mbps) +/- 2%

Interframe spacing (minimum)
286 uS with frame length
  = 19 bytes
161 uS with frame length
  = 500 bytes
48 uS with frame length
  = 954 bytes

Frames per second (maximum)
3300 fps with 19 byte frames
1800 fps with 1000 byte frames
480 fps with 4100 byte frames
100 fps with 18000 byte frames

Percent Utilization (maximum)
3% with 19 byte frames
90% with 1000 byte frames
97% with 4100 byte frames
98% with 18000 byte frames
Specifications—Traffic Generator, continued

FDDI

Load Specification
1 to 446,000 frames/sec

Iterations (number of times a group of frames is transmitted):
1 to 100,000,000 or continuous

Number of defined messages:
1 to 32

Pre-defined messages
(templates):
LLC Fox Message
LLC Request Test
LLC Request XID
MAC Remove Ring Station
MAC Request Ring Station
Address
MAC Request Ring Station
Attachments
MAC Request Ring Station State

Message length range
19 to 4500 bytes

Frame Copy
Copy from another message
Copy from capture buffer

Pre-defined data patterns
(for data field bytes 15 to 78 of message):
0x00, 0x01, 0x10, 0x55, 0xAA, 0xFF, plus random data

FCS Selection:
Good: automatically calculated
Bad: user-definable

Frame padding selected from these options:
User-defined:
any one byte value 0x00 to 0xFF
Incremental:
pattern increments from 0x00 to 0xFF, then repeats
Random:
data pattern is random

Errors: Claims and Beacons
Ordering Information

HP J2300D  HP Internet Advisor WAN
HP J3446D  HP Internet Advisor LAN — Fast Ethernet
HP J3447A  HP Internet Advisor LAN — 100 Base FX interface module for J3446C
HP J2306B  HP Internet Advisor LAN — Ethernet
HP J2307A  HP Internet Advisor LAN — Token Ring undercradle
HP J2309B  HP Internet Advisor LAN — Ethernet/Token Ring undercradle
HP J2524A  HP Internet Advisor LAN — FDDI undercradle
HP J3444A  HP Internet Advisor LAN — Fast Ethernet undercradle
HP J3445A  HP Internet Advisor LAN — 100 Base FX Interface for the J3444A
HP J2901A  HP Internet Advisor LAN — Gigabit Ethernet undercradle
HP J3710A  Oracle Commentator software
HP J3710B  Oracle Commentator software for LAN in Windows
HP J3711A  Sybase Commentator Software
HP J3307A  Internet Reporter LAN/WAN/ATM software

Related Literature

HP Internet Advisor LAN Product Overview  5966-0828E
HP Internet Advisor LAN in Windows Product Overview  5967-5562E
HP Internet Advisor LAN — Gigabit Ethernet Technical Specifications  5968-2747E
HP Internet Advisor LAN — Oracle Commentator Software (HP J3710A) Product Overview  5968-0415E
HP Internet Advisor LAN — Oracle Commentator Software for LAN in Windows (HP J3710B) Product Overview  5968-0414E
HP Internet Advisor Sybase Commentator Software (HP J3711A ) Product Overview  5966-0132E
HP Internet Advisor WAN Product Overview  5967-5566E
HP Internet Advisor WAN Technical Specifications  5968-3279E
HP Internet Advisor ATM Product Overview  5968-1437E
HP Internet Advisor ATM Technical Specifications  5968-1436E
HP Internet Reporter Technical Specifications  5968-6188E
HP Internet Reporter Application Note  5964-2373E
HP Internet Advisor Brochure  5968-6076E

Services

HP J2899A Software Upgrade and Subscription Service Product Overview  5965-5815E

For hardware - three year warranty
For software - 90 day replacement warranty only

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