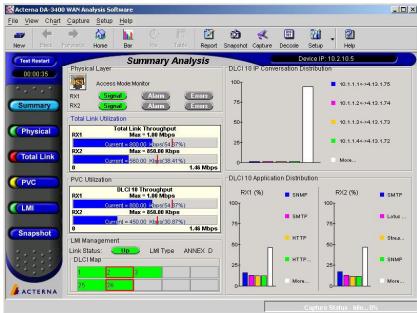


DA-3400/DA-3600A High-Speed WAN Analysis

Real-time Monitoring and Testing



Key Features

- T1, E1, DS3, and E3 support
- PPP, Cisco HDLC, frame relay, HDLC, and PRI analysis
- Signaling support for SS7, PRI, and GR303
- Analysis of L2TP and GRE tunneled traffic
- Full seven-layer analysis
- Distributed/remote or local control
- Real-time signaling and routing protocol analysis
- Real-time traffic decodes

Because wide area networks (WANs) are fundamental for transporting data throughout the world, problems must be resolved quickly in order to restore normal business operations. This requires that technicians determine whether faults lie with the circuit, the transport protocol, or the end users' applications. The use of the JDSU DA-3400 or DA-3600A Data Network Analyzer together with the JDSU High-speed WAN (HSW) Analysis Software allows for the fast identification and troubleshooting of problems on a variety of WANs.

The powerful combination of either the DA-3400 or DA-3600A with the HSW Analysis Software provides visibility into difficult higher layer data problems. Through real-time displays and historical network information, technicians can compare current network conditions to determine how the network operated minutes, hours, or days before. Results are accessed via an easy-to-navigate graphical user interface (GUI), and customized reports are generated either on demand or automatically through the report scheduler. This comprehensive troubleshooting hardware and software package is capable of maintaining uptime on WAN networks and identifying customer traffic anomalies, providing expert tools for the fast resolution of complex problems.

In addition to HSW Analysis Software, JDSU offers Ethernet Analysis Software and ATM Analysis Software for both the DA-3400 and DA-3600A as well as Packet over SONET (PoS) Software for the DA-3600A.

Features

Multiple interface support

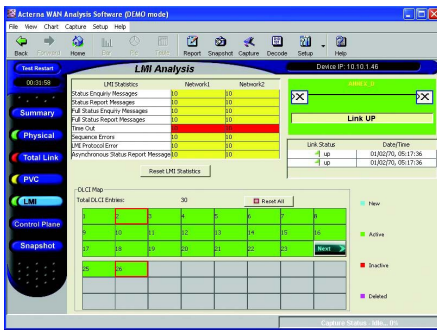
The HSW interface provides support for fractional and full T1, E1, DS3 as well as full E3 on a single plug-in interface module. A variety of network connection methods are supported, including in-line, bridged, and DSX. Network TAPs are also supported.

Data traffic analysis

The HSW Analysis Software automatically identifies data conversations on a WAN circuit. IP host and application statistics provide insight into traffic level problems. Line rate filtering focuses on problem applications, hosts, PVCs, or subnets with real-time analysis.

Frame relay

The HSW Analysis Software automatically identifies and provides statistics on each DLCI on a frame relay network. LMI analysis tracks events and provides realtime decoding for LMI messages. Detailed traffic analysis is displayed for the userselected DLCIs.



LMI analysis

PRI ISDN

The HSW Analysis Software allows monitoring of ISDN signaling messages in real time. Real-time analysis and protocol decoding of signaling messages speeds the troubleshooting process of connection problems. For data connections, the HSW Analysis Software can monitor PPP and Cisco HDLC traffic on any B channel(s).

Reporting

Professional, customized report generation is an integral capability of the WAN Analysis Software. Easily customized and formatted for printing, it is also possible to export the reports to standard database applications.

Control plane analysis

Monitoring of control plane protocols, including routing, signaling, and authentication protocols, is performed in real time. Real-time statistics and decoding with filters allows for the detailed analysis of any control plane protocol.

Remote or local operation

Using IP networks or dial-up connections, technicians can control the DA-3400 or DA-3600A remotely. A direct connection to a PC allows for easy control in portable field service environments. Once initiated, network monitoring continues without the need to maintain the connection.

History mode

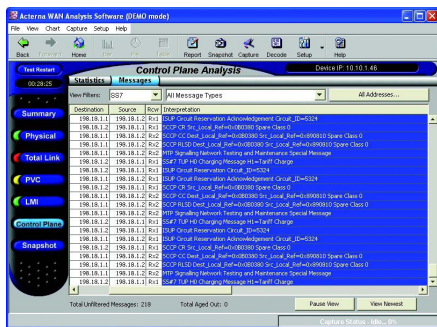
To aid in problem solving, the HSW Analysis Software provides a history mode. When selected, the history mode displays statistics of active stations, protocols, and utilization, reflecting a user-defined time period. History mode can go back hours or days.

Real-time protocol decodes

The HSW Analysis Software allows technicians to display protocol decodes in real time. Summary, hex, and detailed decode views are available. Packets streamed to the technician's PC can be saved onto disk for subsequent analysis.

Tunneling analysis

GRE and L2TP tunneling is common on WAN circuits. The HSW Analysis Software allows technicians to view tunnel statistics or specific statistics for the traffic within the tunnel.

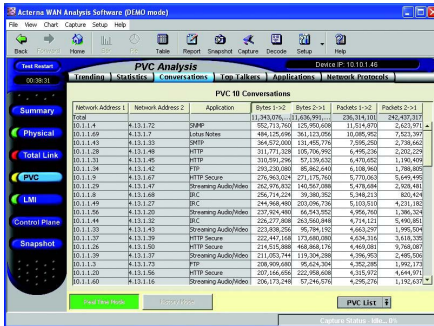


Control plane analysis

Applications

Data service troubleshooting

The HSW Analysis Software application uses a combination of control plane analysis and detailed IP conversation monitoring and analysis to solve the complex higher-layer problems that traditional element management systems are unable to solve. Coupled with an intuitive graphical user interface (GUI), the HSW Analysis Software allows for the rapid identification and solution of problems that decrease mean time to repair (MTTR) and increase customer satisfaction.



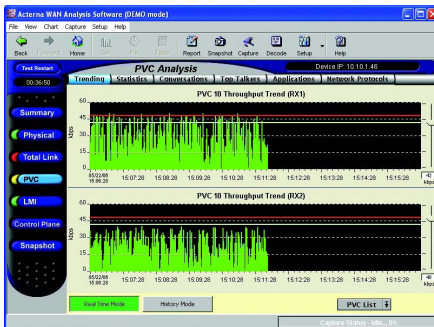
Data service troubleshooting

Circuit vs. traffic problem identification

Identifying the cause of a problem can be the key to quickly resolving the problem. Issues that at first appear to be related to the physical circuit are often the result of problems with traffic being transported over the network. The HSW Analysis Software can quickly segment between the physical circuit layer, the transport protocol (such as frame relay or PPP), and the end user's application, thereby identifying the cause of the problem and helping to resolve the issue.

Network baselining

Profiling WAN traffic over WAN links is always challenging. When planning the addition of new traffic sources and applications, the HSW Analysis Software can be used to profile the current network performance. This information can then be used to determine if the network is capable of supporting the additional traffic. Periodic measurements can be obtained in order to monitor how the network changes over time. When problems occur, the technician has historic records of performance and traffic loads based on optimal network operations. The technician is then equipped to understand how the traffic patterns have changed and how best to adjust the network to improve performance.



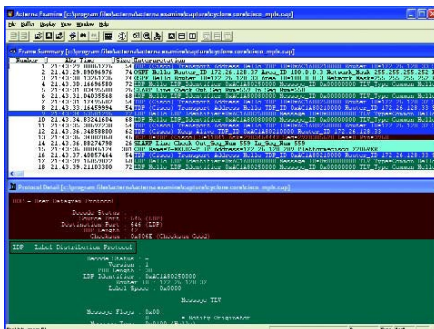
Network baselining provides an understanding of current network use

IP tunneling analysis

Identifying problems on tunneled networks is difficult for many analyzers. The HSW Analysis Software allows visibility into the tunnels on the network as well as into the conversations and applications inside the tunnels. This gives technicians a complete view into the network traffic for troubleshooting GRE and L2TP tunnels.

Filter, capture, and decode

With powerful filtering and a line rate capture capability of one Gigabyte RAM, the DA-3400 and DA-3600A allow technicians to capture traffic for post-capture decoding and analysis. Additionally, it is possible to view decodes in real time. Coupled with line rate filters, technicians can focus on specific traffic, improving efficiency and reducing problem resolution time.



Real-time protocol decodes

Reporting

Often the final step in the troubleshooting process is the generation of reports. The reporting function of the HSW Analysis Software provides an integral report generator. Generating customized reports containing charts, graphs, and tables is quick and easy. If needed, reports can be saved in CSV format for use with standard database applications.

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Specifications

DA-3400 and DA-3600A Mainframes

Physical characteristics

Overall dimensions (w x l x d)	10.5 x 12.6 x 2.6 in (26.7 x 32 x 6.6 cm)
Weight	7 lb (3.2 kg)
Rack mount height	2U

Environment

Ambient temperature range	+5°C to +40°C
Storage and transport	-10°C to +60°C

Electrical

Power supply	100–240 VAC, 50/60 Hz
DA-3400 power consumption	70 W
DA-3600A power consumption	90 W

Safety

UL 3111-1, CAN/CSA C22.2 No. 1010.1,
IEC-61010-1, EN61010-1

Configuration/control/power connectors

RJ-45 10/100 Ethernet console port
Keypad with LCD for communication setup
LED indicators for physical, link, error
Dual cardbus slot
RS-232 serial port
12 VDC power supply input

Minimum system requirements

Windows 2000, Windows XP Professional
800 MHz processor
128 MB RAM — 256 MB recommended
300 MB disk space

Ordering Information

Mainframe

Description	Part number
DA-3400 Data Network Analyzer	DA3400
DA-3600A Data Network Analyzer	DA3600A

Interface Modules

DS1/DS3 E1/E3 WAN/ATM/ISDN	DA3000M-DS/E
DS1/Channelized DS1: Dual RJ connectors, receive sensitivity 0 dBdsx to -30 dBdsx	
DS3/Channelized DS3: Dual BNC connectors, terminate receive sensitivity 200 mVp to 1.2 Vp, DSX receive sensitivity 30 mVp to 80 mVp, designed for -20 dB resistive loss	
E1/Channelized E1: Dual RJ connectors, receive sensitivity 0 dBdsx to -30 dBdsx	
E3: Dual BNC connectors, terminate receive sensitivity 110 mVp to 1.2 Vp, DSX receive sensitivity 30 mVp to 85 mVp, designed for -20 dB resistive loss	

OC-3 STM-1 POS/ATM

OC-3 STM-1 Singlemode (DA-3400 only)	DA3000M-155-SM
Dual SC full-duplex connectors: Optical transmit power -8 dBm to -15 dbm, optical receive sensitivity -14 dBm to -26 dbm	
OC-3 STM-1 Multimode (DA-3400 only)	DA3000M-155-MM
Dual SC full-duplex connectors: Optical transmit power -14 dBm to -20 dbm, optical receive sensitivity -14 dBm to -26 dbm	

OC-3/12 STM-1/4 POS/ATM

OC-3/12 STM-1/4 Singlemode	DA3000M-622-SM
Dual SC full-duplex connectors: Optical transmit power -8 dBm to -15 dbm, optical receive sensitivity -14 dBm to -26 dbm	
OC-3/12 STM-1/4 Multimode	DA3000M-622-MM
Dual SC full-duplex connectors: Optical transmit power -14 dBm to -20 dbm, optical receive sensitivity -14 dBm to -26 dbm	

Ethernet

10/100 Base-T Ethernet (DA-3400 only)	DA3000M-10/100
10/100/Gigabit Ethernet	DA3000M-1G

Software and Options

DA-3400 and DA-3600A software

ATM Analysis	DA3000S-ATM
Ethernet Analysis	DA3000S-Ethernet
WAN Analysis	DA3000S-HSW
VoATM Analysis	DA3000T-VoATM
VoIP Analysis	DA3000T-VoIP
Application Response Time	DA3000T-APPRES

DA-3600A advanced software

Advanced (POS/Ethernet) Analysis	DA3600S-Advanced
Streaming Application	DA3600S-Streaming

Options

Cardbus Hard Disk Drive	AC-018398
Rack Mount Kit	RM-18006
Gigabit Ethernet Upgrade (DA-3400 only)	DA3000T-1G-U1
622 ATM Upgrade (DA-3400 only)	DA3000T-622-U1
PVA-1000 VoIP Analysis and Playback	PVA-1000-VOIPN

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