



OptiView™ T1/E1 WAN Analyzer

Total integration.

Total control.

Total Network SuperVision.

Our OptiView Network Analysis Solution is a breakthrough in integrated portable and distributed network monitoring and troubleshooting. It gives you a fast, complete view of your entire enterprise, from portable devices to rackmounted workgroup analyzers to high-performance gigabit line-rate link analyzers – all monitoring across heterogenous or homogenous vendor environments. Only OptiView combines the analysis techniques of monitoring, packet capture, statistical analysis and network discovery to deliver new speed, new ease of use, new depth of vision and new control to optimize the performance of WAN, LAN and wireless networks.

Fast vision into WAN links

The OptiView WAN Analyzer family provides a complete view of your WAN link performance and facilitates rapid problem resolution from the convenience of your desktop. Fluke Networks' family of analyzers lets you examine Frame Relay, ATM, Packet over SONET, PPP and HDLC WAN links. Use our OC3/OC12 or DS3/E3 analyzer to examine links connected to your main offices and use our T1/E1 analyzer to examine your lower speed links at your branch and remote offices.

From any IP connected workstation, remotely access the health status of any high-speed ATM or lower speed Frame Relay/PPP/HDLC links and examine link performance from the physical layer to the application layer. You can even perform remote capture and protocol analysis if necessary. Easily and quickly verify policy decisions regarding wide area network usage. Optimize WAN link performance for critical processes. Examine network security robustness. Produce trend reports on link utilization and errors as well as examine service level metrics. Quickly discover what devices are consuming WAN bandwidth and which applications they are using. When problems are detected, be alerted to changes in network topology or availability immediately and have the events logged and presented in an easy-to-understand format automatically. In short, complete diagnostics of your WAN links.

Features

- T1/E1 digital interface and serial WAN interface (V.35, X.21, etc.)
- Supports Frame Relay, PPP and HDLC on the same unit
- Fail-safe, non-intrusive full-duplex interface
- T1/E1 test access through an external or built-in tap (RJ48)
- Serial WAN test access through a Y-cable accessory
- Multi-user simultaneous remote access via 10/100 Mbps Ethernet management port
- Physical layer through application layer testing
- Complete RMON/RMON2 traffic analysis
- Service level statistics



- Network discovery with address-to-name resolution
- Real-time problem detection and notification
- Bandwidth utilization statistics including top applications, conversations and protocols
- Discover non well-known protocols or add your own custom protocols and set thresholds
- Strong security featuring admin level authentication, user account authorization and syslog accounting
- Advanced Encryption Standard employed to protect data transfer integrity
- Context sensitive line rate packet capture with 256 MB buffer
- Instant contextual reports on all 7 layers
- Small size - half rack width, single height (1U)

Monitor across the entire OSI stack

Unlike existing solutions, the WAN Analyzer is highly automated, providing meaningful information about your WAN immediately with virtually no configuration. The unit analyzes measured parameters and “rolls up” important information to a comprehensive front page view. Combined with context sensitive packet capture and full RMON2, the OptiView WAN Analyzer provides a complete solution for performance monitoring and troubleshooting critical WAN links.

Fast vision into WAN Links.



Make efficient use of your time

From any workstation, remotely access the health status of any of your WAN links from the physical layer to the application layer and even perform remote protocol analysis when necessary.

Interoperates with your existing network management software

Standards based SNMP and RMON2 compatibility allows you to add analyzers to your strategic network management software (NMS) solution.

Understand how your WAN bandwidth is being utilized

Verify policy decisions regarding WAN link usage and optimize performance for critical processes. Find rogue protocols and their associated users.

Know the health and status of the link and key devices

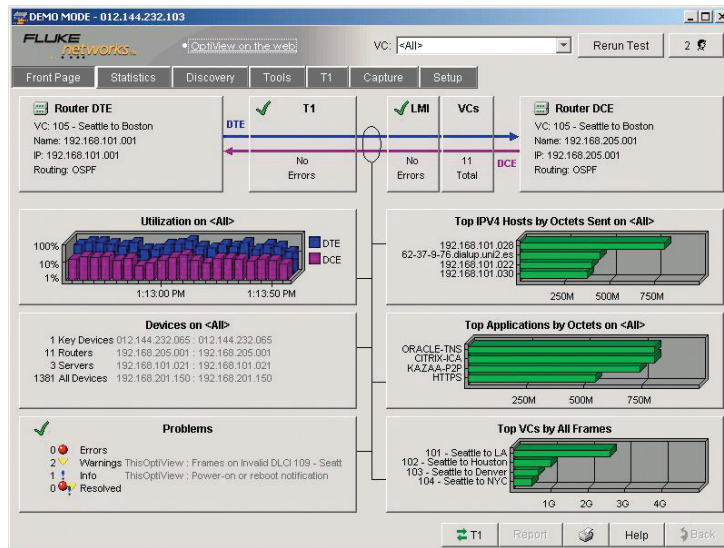
Be alerted to changes in topology or availability. Problems are detected, logged and presented in an easy-to-understand format.

The OptiView WAN Analyzer uses Fluke Networks' unique FPGA design to capture cells and packets at line rate, as well as provide real-time traffic statistics. This design separates RMON statistics gathering from packet capture. So, unlike some other solutions, performing packet capture does not interfere with statistics gathering.

Stand-alone analysis or part of an integrated management solution

The OptiView WAN Analyzer may be used as an independent system requiring as little as one analyzer and a PC. Even in this simple configuration, users can discover, trend, report and troubleshoot WAN links. For the most difficult troubleshooting tasks, perform packet captures using context sensitive filter and triggering mechanisms and view the decodes in Fluke Networks' Protocol Expert software to isolate root causes of network problems.

Gain simultaneous visibility of both your critical WAN and LAN topologies by adding multiple OptiView analyzers. Get instant access to not only multiple WAN analyzers, but also OptiView LAN analyzer products



User interface

including the Integrated Network Analyzer, Workgroup Analyzer and Link Analyzer. Alternately, you can integrate your OptiView WAN Analyzers with your existing NMS to enable troubleshooting and monitoring of WAN segments from your NMS console.

In addition to the remote user interface software supplied, the analyzer offers access via standard SNMP protocol and supports the RMON, RMON2 and WAN Transmission MIBs that are easily accessible from your existing NMS solution. In addition, SNMP trap or Syslog messages can be sent to your NMS when problems are detected on the WAN link as well as when the analyzer sees that they are resolved.

Simple, fast deployment

The OptiView WAN Analyzer offers the same ease of installation and ease of use that customers have come to expect from Fluke Networks. The unit is so compact, it fits into a standard half width, single height (1U) rack space. The unit is self-configuring and self-contained so you can begin link analysis within minutes out of the box. Just plug the unit into your pre-installed WAN tap, connect the management port to your existing Ethernet LAN, install and start up the OptiView remote user interface software on your networked PC and you're up and running. The unit automatically discovers WAN

link virtual circuits and devices that are consuming your valuable WAN bandwidth. This self-contained analyzer really is this simple to install and use.

Full analysis of Frame Relay, Point-to-Point and HDLC technologies

The OptiView WAN Analyzer is equipped with both enterprise side and service provider side interfaces to maximize monitoring access. Standard RJ48 connectors are used for T1/E1 connectivity on the service provider facing side. Alternatively, Serial WAN Y-cable accessories may be used on the enterprise side of the network to tap the link for analysis.

Full duplex traffic patterns are displayed simultaneously for all link analysis. The OptiView WAN Analyzer supports Frame Relay, PPP and HDLC – all in one unit. This configuration provides ultimate flexibility, allowing for use of the analyzer on multiple T1/E1 links.

Rapid automatic discovery of devices using the WAN

The OptiView WAN Analyzer automatically discovers and monitors Virtual Circuits on Frame Relay links (DLCIs). Drill down on any virtual circuit and find utilization, errors, protocols, top conversations, top hosts and top applications.



Display network devices discovered by the analyzer for all DLCIs on the WAN link or only a selected DLCI. Devices are automatically classified by type as routers, servers, SNMP agents or client hosts. All devices are discovered and classified via passive traffic monitoring.

Physical layer monitoring

Telco quality errors, alarms and performance metrics are continuously monitored on the T1 or E1 WAN circuit. Instant reports are available for sending to the local loop service provider to aid in problem resolution related to the physical transport.

When tapping into the serial WAN interface, physical layer errors and alarms consist of a breakout of all critical control signals (clear to send, ready to send, etc.).

Frame Relay circuit monitoring

Utilization statistics are simultaneously measured in relation to the bandwidth of the entire WAN link or as it relates to the far end capacity of a specific DLCI. Measurement metrics include traffic volume, throughput within CIR, throughput in excess of CIR, congestion, and Errored frames. Selectable time durations let you view gathered statistics from a 5-minute view up to a 7-day view. In addition, you can view your top virtual circuits in rank order by volume, throughput, congestion, errors or other sort criteria.

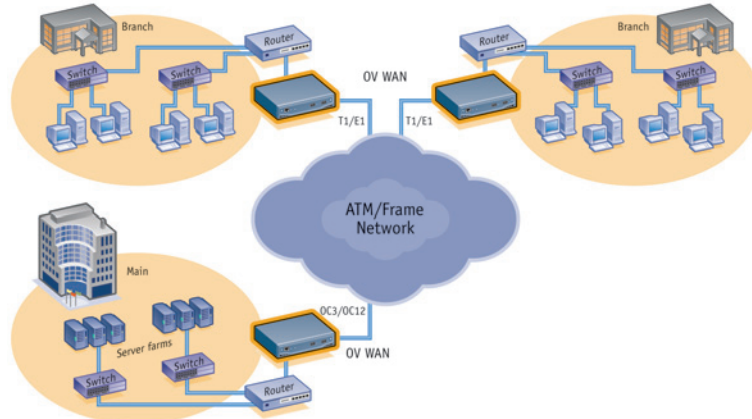
Frame Relay service level and LMI monitoring

Service level statistics are collected including metrics such as DLCI availability, DLCI status, circuit uptime, downtime, MTBSO, MTTSR and more.

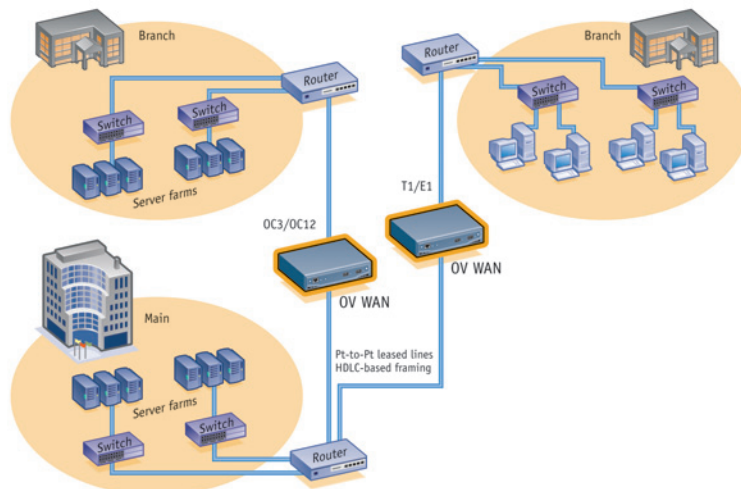
Local management interface (LMI) statistics including channel inactive seconds, link reliability errors, protocol errors, channel inactive events, LMI state and LMI protocol type are all monitored.

PPP and HDLC statistics

When configured to monitor PPP/HDLC circuits, utilization statistics are measured in relation to the bandwidth of the entire WAN link. These statistics include traffic volume, throughput and errors. Selectable time durations let you view gathered statistics from a 5-minute view up to a 7-day view.



Monitor ATM to frame relay internetworking networks



Monitor point-to-point leased line networks

Upper layer statistics

Upper layer statistics are displayed in the familiar OptiView RMON/RMON2 views. Analyze traffic by protocol distribution, top hosts, top conversations and top applications. Host conversations and host protocols also let you view activity related to a specific device or host of interest. You can choose to view any traffic information as a sum of all virtual circuits or select an individual virtual circuit.

Problem logs and alarms

Problem logs are created when specific failures are detected or specific user config-

urable thresholds are exceeded. Rising threshold, falling threshold and time duration are configurable. Severity levels for each problem type may also be configured by the user. Problems detected include T1/E1 and serial WAN physical layer errors, Frame Relay and HDLC layer errors, VC availability, suspicious protocols, key device not responding and many more. Status, severity, device, time and date stamp as well as problem description are recorded for each event logged. Notification of events is facilitated via SNMP trap or Syslog message.



Ping and traceroute tools

Perform ping and/or traceroute on any device discovered by the analyzer. Target IP addresses will automatically be converted to DNS name if one is found in addition to IP address.

Report generation

Instant HTML reports may be created for the measurement screen being viewed. A rich set of statistics is made available such as link utilization, throughput, errors, etc. After drilling down to get the desired data that relates to your troubleshooting task, you can use these instant reports to provide evidence concerning the root cause. Because the reports are context sensitive to the data that you have filtered down to, the report contains just what you need rather than forcing you to use canned formats.

Remote management

Each OptiView WAN Analyzer has a dedicated 10/100 Mbps Ethernet RJ-45 management port that allows it to be controlled remotely from any point on the network using the OptiView remote user interface software (included with the analyzer). Up to eight users may access any single WAN Analyzer and perform different analyses at the same time. Settings of the OptiView WAN Analyzer system, such as SNMP Trap destinations, scope of discovery and user access privileges, can be easily configured from any workstation running the analyzer's remote software.

Upgrade functionality when you need it

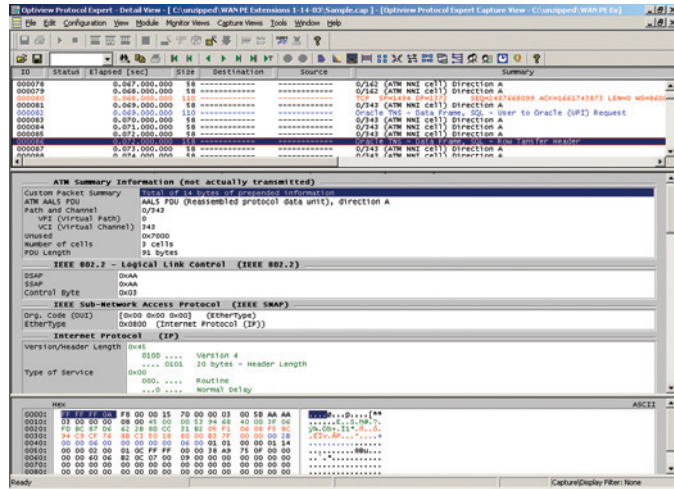
Buy only what you need today, but be assured that future needs are easily accommodated through simple updates. The OptiView WAN Analyzer is designed to accommodate software upgrades through simple flash updates that can be performed remotely.

Options

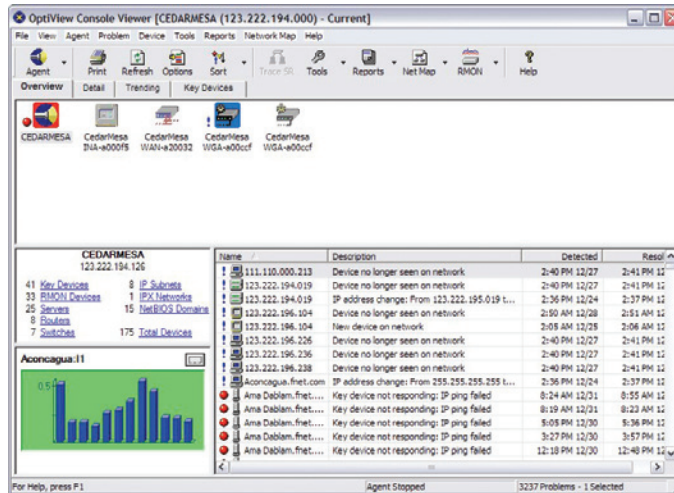
Maximize the visibility of your WAN links through add-on options.

OptiView Protocol Expert

Analyze traffic traversing your WAN link with precision detail using OptiView's Protocol



OptiView Protocol Expert view showing ATM cells and reassembled PDU's



OptiView Console showing remote WAN analyzers and device discovery with utilization trend

Expert analysis software. The OptiView WAN Analyzer provides capture files for decode by the Protocol Expert software module that enables views of WAN traffic. Use Protocol Expert's extensive seven-layer decodes to identify and solve tough problems on link segments. Simultaneously capture specific IP traffic or conversations across multiple virtual circuits. Rather than examining virtual circuits one-by-one to isolate link problems, the OptiView WAN Analyzer allows you to capture packets across all discovered VCs at line rate to dramatically improve monitoring and troubleshooting capability.

OptiView Console

Monitor all your WAN and LAN links from a single workstation. Easily obtain performance summaries, trending analysis, detailed device and VC discovery information, and event notifications across the entire network from a single console. Generate professional looking reports automatically or on demand.



Specifications

PC system requirements for user interface	
Operating system	Windows 2000, XP or Windows 2003
Hard disk space	65 MB (temporary)
Processor speed	200 MHz Pentium
System RAM	128 MB
Display	800 x 600 video SVGA
Disk drive	120 MB free hard disk space CD-ROM drive
General Specifications	
WAN technologies	Frame Relay, HDLC & PPP
Media access	Built-in or external Passive T1/E1 tap (RJ48). RSV Serial V.35, X.21, RS-449, EIA-530, RS-232 (via Y-cable to RSV port)
Configuration port	Serial RS-232 (9-pin male)
Management port	10BASE-T/100BASE-TX (RJ-45) Ethernet, Full and Half Duplex
Capture memory	256 Mbytes
Interface	Java-based Remote GUI
Power	100 to 240 VAC; 47/63 Hz; 25 watts
Dimensions	1.6 x 8.3 x 12.9 in (4.1 x 21.1 x 32.8 cm)
Weight	3.8 lbs. (1.7 kg)
LED indicators (4)	Signal (DTE&DCE), Mgmt port Link, Pwr
Vibration	Meets requirements of MIL-PRF-28800F for Class 3 equipment
Operating temperature	10° C to 30° C (50° F to 86° F) with up to 95% relative humidity; 10° C to 40° C (50° F to 104° F) with up to 75% relative humidity
Non-operating temperature	-20° C to +60° C (-4° F to +140° F)
Connection to public telephone network: Do <i>not</i> connect the analyzer's network interfaces to public telephone systems.	
Standards compliance	
DS1:ANSI T1.102, T1.107, T1.231, T1.403, AT&T Technical References 54016 and 62411.	
E1: ITU-T G.703, G.704, G.706, G.775, G.821, and G.826.	
RFC compliance	
2819 RMON MIB, 2021 RMON2 MIB, 2895 RMON Protocol Identifier Reference, SMIV2 [2011 IP, 2012 TCP, 2013 UDP], 2233 IF-MIB, RFC 2495 DS1/E1 MIB, RFC 2496 DS3/E3 MIB, 2954 Frame Relay Service MIB, 2115 Frame Relay DTE MIB.	
Safety and EMC information	
Complies with CSA C22.2 No. 1010, UL 61010B and EN60950 3rd edition (CE Mark).	
EMC: CE Complies with EN61326 Class A, criteria C.	

Gold Support

Protect your investment with our premium annual software support package and receive:

- Unlimited priority technical product support 24/7, with a highly-trained Fluke Networks customer support technician
- Software application updates/upgrades at no charge
- Unlimited repair and defective accessory replacement with use of a loaner unit for zero downtime
- Online training and knowledge base
- Members-only promotions and benefits
- For more information, see www.flukenetworks.com/goldsupport

Warranty

The OptiView WAN Analyzer comes with a standard, one-year exchange warranty. Fluke Networks will exchange the unit with a unit of equal or better performance. Contact your local Fluke Networks representative or visit our web site www.flukenetworks.com for more details.

Ordering Information

Model	Description
OPV-WAN/T1E1/DVS	OptiView WAN T1/E1 with Protocol Expert & OptiView Console
OPV-WAN/T1/E1	OptiView WAN T1/E1, RSV Serial WAN
GLD-OPV-WAN/T1E1/D	Gold Support 1 year for OPV-WAN/T1E1/DVS
GLD-OPV-WAN/T1E1	Gold Support 1 year for OPV-WAN/T1E1
OPV-PE/PRO	OptiView Protocol Expert
OVC	OptiView Console
TAP-T1E1	Single Port T1/E1 Passive rackmount Tap
TAP-T1E1-2X8	2x8 T1/E1 WAN switch
NT907	Pack of four T1/E1 in-line taps
OPV-RMK	19" Rack Mount kit
OPV-TCASE	Ruggedized Transit Case
NT803	RS-232 Cable (for serial configuration port)
NT804	CAT5 Patch Cable
NS101	RSV Serial WAN extension cable
NS102	RSV Serial WAN X.21 Y cable
NS103	RSV Serial WAN V.35 Y cable
NS104	RSV Serial WAN French V.35 Y cable
NS105	RSV Serial WAN RS-449/V.36 Y cable
NS106	RSV Serial WAN EIA-530 Y cable
NS107	RSV Serial WAN RS-232 Y cable

NETWORK SUPERVISION

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Fluke Networks operates in more than 50 countries worldwide. To find your local office contact details, go to www.flukenetworks.com/contact.

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