Gigabit Network Analysis

Monitor Gigabit Communication from the Edge to the Core

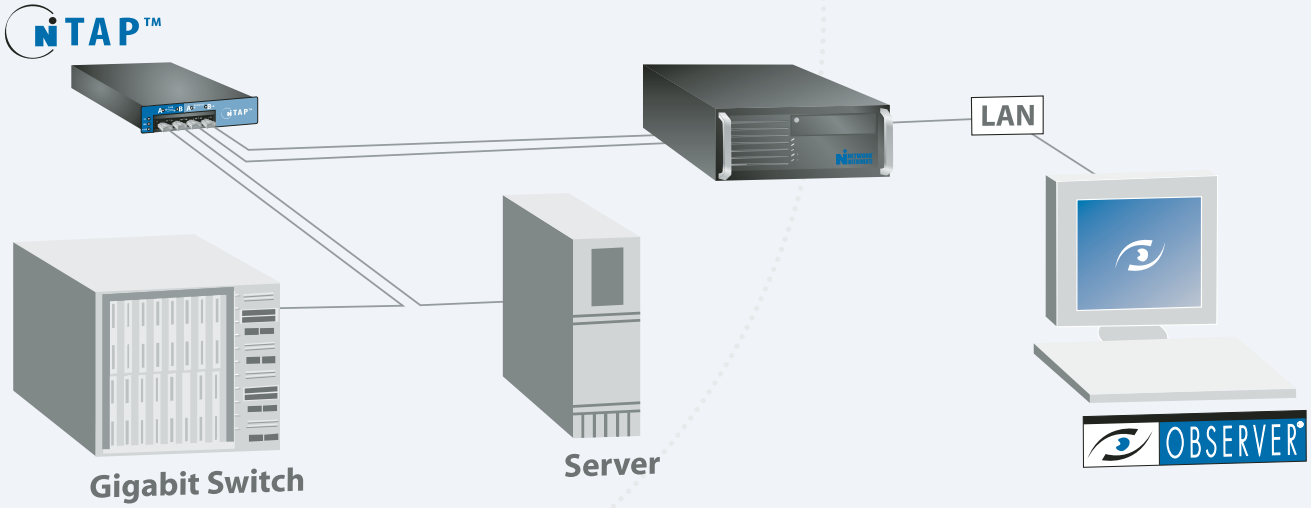
For enterprise management, gigabit networks mean high-speed communication, on-demand systems, superior customer service, and improved business functions. For enterprise IT professionals, gigabit networks mean an entirely new set of challenges that require diligent maintenance, analysis, monitoring, troubleshooting, and overall network management. To help fulfill the promise of gigabit and maximize the organization's gigabit investment, network professionals require a comprehensive, distributed gigabit analysis system.

The Network Instruments® Gigabit Observer® product family provides multiple, customizable options for enterprise organizations demanding comprehensive network management tools. Gigabit appliances are 64-bit enabled with a 64-bit application core to maximize analysis performance on critical gigabit links.

As with all Network Instruments products, the gigabit product line is based on Network Instruments' unique Distributed Network Analysis (NI-DNA™) architecture, which assures complete visibility, a comprehensive feature set, seamless integration, and unparalleled functionality across the entire enterprise.

Network Instruments Gigabit Analysis Advantages

- Monitors up to four full-duplex gigabit links independently or in aggregation
- Obtains full-duplex, wire-speed gigabit capture and statistics
- Utilizes the largest memory buffer (124 GB) in the industry
- Maximizes gigabit analysis with 64-bit technology



Deploy a Gigabit Probe Appliance on local or remote mission-critical links for real-time, wire-speed Expert analysis.

In-Depth Analysis for Gigabit Networks

Every member of the Gigabit Product Family is designed with Network Instruments' unique Distributed Network Analysis (NI-DNA™) architecture. This award-winning analysis technology delivers investment flexibility, prompt problem resolution, proactive network management, complete application analysis, and integrated visibility. Below are a few examples of the powerful analysis functionality found throughout the gigabit product line.

Statistics – Observer offers over 30 real-time statistics for gigabit analysis, including Network Summary, Bandwidth Utilization (DCE and DTE displays), Top Talkers, Switch Statistics, IP Pairs, Protocol Distribution, and Network Activity.

Link Utilization – Observer provides granular analysis on gigabit links so communication can be viewed on a conversation-by-conversation basis or in aggregation. Monitor up to eight ports for any simultaneous combination of SPAN sessions, full-duplex connections, and trunked gigabit links.

Application Analysis – Monitor the application layer in real time and post capture through Observer's Application Analysis. Track application session flows and failed transactions, gather statistics on errors, monitor response times, and perform network forensics.

Distributed Expert Analysis – Regardless of location, Observer ensures rapid diagnosis and resolution of network problems for over 550 Expert conditions. Observer's Expert Analysis offers real-time and post-capture Expert event identification, modeling, and analysis for gigabit networks. View network conditions in a single, concise display. All analysis is done remotely at the probe, delivering only screen updates to the Observer console, minimizing any impact to the network.

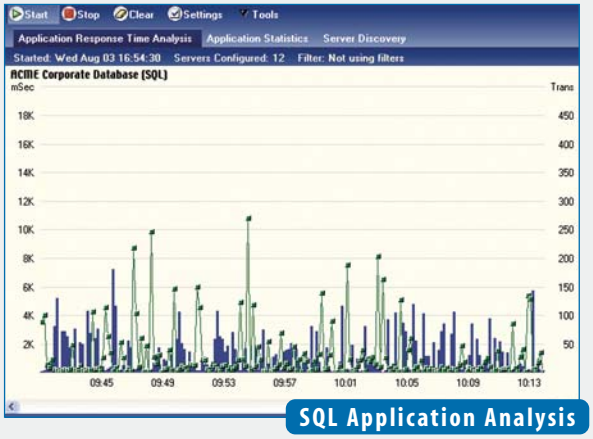
VoIP Expert – Monitor VoIP connections and improve VoIP performance across the organization with VoIP Expert. See VoIP traffic statistics and more than 20 metrics that track call quality. Observer offers complete decode of VoIP protocols including H.323, MGCP, SCCP, and SIP. Save or play voice conversations or streaming video. Track jitter and lost packets (in each direction) and total VoIP utilization.

VLAN Statistics – Determine if VLANs are overloaded and verify VLAN setups on gigabit links. Observer displays real-time VLAN statistics in aggregation or by individual load per station.

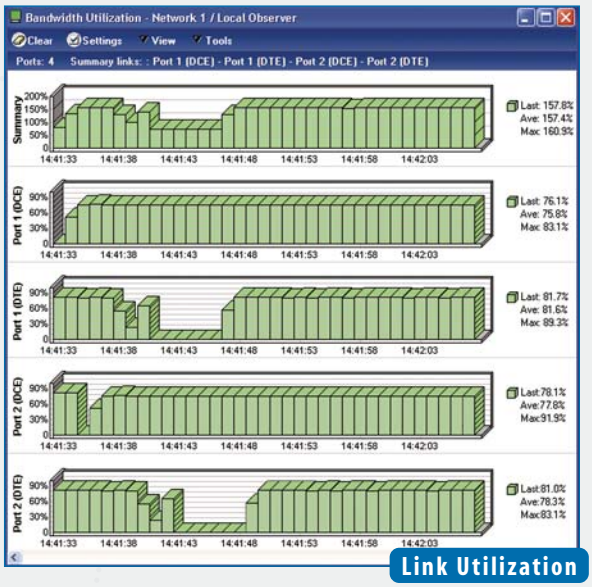
Connection Dynamics – Observer provides a graphical view of network conversations down to the application layer. Conversations are displayed packet-by-packet, allowing for instant identification of latency. Drill down on a conversation for granular analysis and to pinpoint problems immediately.

Filtering – Observer offers an extensive range of filtering capabilities for both real-time and post-capture analysis. For data mining tasks, Observer pre-filters capture buffers, resulting in quicker analysis. This feature is vital for sifting through large volumes of data (gigabit and/or long-term captures). Observer can also execute filters concurrently and share filter libraries among users.

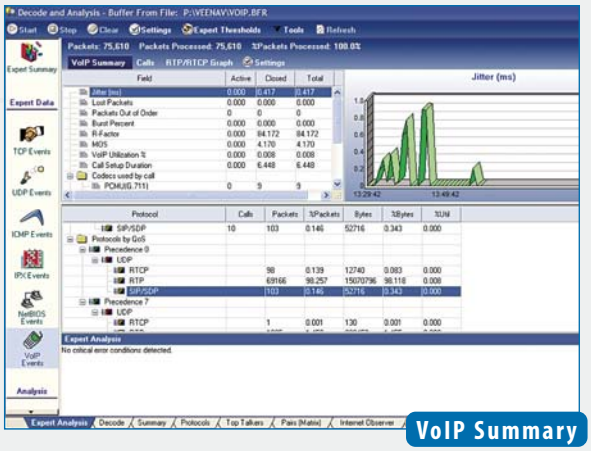
Trending & Reporting – Observer allows users to collect, store, view, and analyze gigabit traffic over days, weeks, months, and even years. Use this data to perform historical analysis and determine if capacity upgrades are needed. Observer also includes over 20 Ready-Made Reports for instant snapshots of network health as well as the ability to create custom reports. Reports can be sent via e-mail or published over the web to share with management.



SQL Application Analysis



Link Utilization



VoIP Summary

Superior Hardware Advantages for Maximum Analysis Performance

All Network Instruments gigabit products deliver key advantages for ensuring full-duplex, wire-speed capture and analysis on gigabit links.

Offers capture and analysis flexibility with Gen2™ technology
The internally developed Gen2 Capture Card greatly augments gigabit analysis capabilities.

- Monitor up to eight ports for any simultaneous combinations of SPAN sessions, full-duplex connections, and trunked links
- Switching between monitoring copper or optical connections is simple with the card's SFP technology
- The card's Field Programmable Gate Array (FPGA) allows for driver updates with a downloadable firmware patch, eliminating the need to swap cards or systems
- Ensures accurate timestamping across multiple gigabit links, relying on one card (one clock) with nanosecond resolution to timestamp all of the data across each link

Gen2™ Powered By

64-bit systems ensure maximum Observer performance
Network Instruments' 64-bit enabled systems offer faster processing and extra large capture buffers.

- With 64-bit, the capture buffer permits up to 124 GB, the largest in the industry
- By integrating with Observer's 64-bit application core, gigabit products can crunch Expert data, perform comprehensive analysis and deliver statistics faster for rapid problem resolution

Manages all data processing and Expert analysis locally at the probe
All gigabit products have the capability to collect, store, and process data on the probe itself.

- Only screen updates are sent back to the Observer console
- Speeds up tasks like Expert analysis
- Greatly minimizes network traffic

Comprehensive analysis
All gigabit probes deliver in-depth analysis metrics to any Expert Observer or Observer Suite console.

- All gigabit products collect over 30 real-time statistics, keeps track of application response times, monitor VoIP traffic, trigger alarms on viruses and hacks, offer notifications when pre-defined thresholds are crossed, and much more
- Multiple Observer users can log into the same probe simultaneously to collaborate on issues or perform individual tasks as needed

Includes nTAPs for guaranteed data delivery
Only a TAP can copy data from full-duplex links at line rate for monitoring devices.

- All gigabit systems include an internal *n*TAP that provides a copy of all gigabit traffic to the analyzer
- Unlike a SPAN port or port mirror mechanisms on a switch, the *n*TAP cannot drop packets, nor can it affect switch performance

nTAP™

A Diverse Line of Gigabit Appliances to Meet A Variety of Network Needs

Gigabit Probe Appliance
Offers wire-speed, full-duplex analysis on gigabit links in an easy-to-install rack mount unit. Includes the ability to monitor trunked links independently or in aggregation.


Gigabit Probe

The Gigabit Probe Appliance is a complete system, which reports to any Expert Observer or Observer Suite console. The appliance may also be licensed as an RMON/HCRMON probe, which can report to any Observer Suite or RMON/HCRMON console.

GigaStor
The GigaStor provides up to 4 TB or 8 TB of storage, line-rate capture-to-disk, and advanced trunking in an easy-to-deploy rack mount unit. The appliance includes a unique time-based navigation utility to easily investigate network issues. The GigaStor can also be used as a network forensics tool with features such as Stream Reconstruction, offering the ability to recreate hard evidence such as e-mails, web pages, or instant messages.


GigaStor Probe

The GigaStor is a complete system and reports to any Expert Observer or Observer Suite console. The appliance may also be licensed as an RMON/HCRMON probe, which can report to any Observer Suite or RMON/HCRMON console.

Gigabit Observer Suite System
The Gigabit Observer Suite System (GOSS) is a fully portable unit that contains all the hardware and software necessary to troubleshoot and manage the most advanced gigabit networks. It is a completely passive system and will not interfere or disrupt network flow. The GOSS is an all-in-one solution designed for efficiency in travel and shipping. The system is ideal for field service engineers tasked with solving elusive network abnormalities at particular points across the organization.


GOSS

The GOSS is a complete analyzer, and includes a copy of Observer Suite. The system does not require any additional hardware and software. The system may also be licensed as an RMON/HCRMON unit.

High-Capacity RMON Probe Option

The GOSS, the Gigabit Probe Appliance, and the GigaStor Appliance can be licensed for High-Capacity RMON (HCRMON). The RMON Probe integrates with Network Instruments gigabit capture hardware to track real-time statistics through an included open-standard Management Information Base (MIB). Probes licensed for Gigabit RMON will report back to any Observer Suite or RMON console. This supports the HCRMON standard, as detailed in RFCs 2577 and 3273. This appliance comes complete with all hardware necessary as a ready-to-go system including *n*TAPs and the Gen2 Gigabit Capture Card.

The HCRMON system provides:

- A direct, passive link into the data stream, offering an independent, proven, and trusted view of network traffic
- Full adherence to all 21 RMON groups, including HCRMON for complete data collection
- Compatibility to any RMON management console or collection facility (Observer Suite, OpenView®, Concord®, Micromuse®, etc.)

Network Instruments' Gigabit Probes support the following industry standards:

- RMON 1, RMON 2
- HCRMON

RMON console functionality:

- Real-time statistics
- Packet capture and decode
- Post-capture Expert analysis

Driven by Distributed Network Analysis (NI-DNA™)

All Network Instruments' products are created using the Distributed Network Analysis architecture, which provides uniform functionality and seamless integration across the entire Observer family of products. With NI-DNA, managing high-speed links across multiple topologies becomes effortless.

Additional Resources for Gigabit Analysis

White Papers

For more assistance in understanding gigabit capture technology, please download our free white paper:

"Best Practices in Gigabit Capture"

Before you choose a gigabit analysis solution, you should consider the best practices involved in gigabit capture technology. This white paper discusses the technical "best practices" that should be taken into consideration when purchasing gigabit network analysis equipment, including:

- Different ways of accessing network traffic
- How to ensure accurate timestamping
- The best method to format raw data
- The importance of streaming to system memory
- Maintaining flexibility with SFP-technology
- Ensuring compliance with industry regulations
- Maintaining ideal points of visibility

To download this paper, visit
www.networkinstruments.com/white_papers.html

NI University Courses

Polish your troubleshooting skills with a course on network analysis from NI University.

"Network Analysis using Observer"
This course lays a foundation for learning basic network management and troubleshooting skills. Implement a logical troubleshooting methodology to capture and analyze data frames. Learn to troubleshoot, maintain, optimize and monitor network traffic using Observer.

"TCP/IP Network Analysis"
This course focuses on protocols and issues facing network managers and technicians in TCP/IP environments. Special focus is placed on troubleshooting common problems at all layers of the OSI stack. Observer is used to examine, analyze, and dissect components from a field technician's perspective. Knowledge is reinforced by hands-on exercise designed to augment follow-along activities. Students learn how to troubleshoot, maintain, optimize, and monitor TCP/IP network traffic using the Observer analyzer.

For more information on NI University, to sign up for a course, and for the latest schedule, visit the Network Instruments web site.

US Class Schedule: **www.networkinstruments.com/training**
UK/Europe Class Schedule: **www.networkinstruments.co.uk/training**

About Network Instruments

Network Instruments is the industry-leading developer of distributed, user-friendly and affordable network management, analysis and troubleshooting solutions. The award-winning Observer family of products combines a comprehensive management and analysis console with high-performance probes and network TAPs to provide integrated monitoring and management for the entire network (LAN, 802.11 a/b/g, gigabit, WAN). All Network Instruments products are designed utilizing a Distributed Network Analysis (NI-DNA™) architecture. With NI-DNA, the Observer solution set simplifies network troubleshooting and management, optimizes network and application performance and scales to meet the needs of any organization. Founded in 1994, Network Instruments is headquartered in Minneapolis, Minnesota with offices in London, Munich, Paris, Toronto, and multiple cities throughout the United States with distributors in over 50 countries. More information about the company, products, innovation, technology, NI-DNA, becoming a partner, and NI University can be found at: **www.networkinstruments.com**

Solution Bundles

Contact a Network Instruments representative or dealer to ask about product bundles that cover all of your network management needs.

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