



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. Network Instruments' complete line of distributed gigabit appliances empowers network professionals to effectively manage all segments of the network, maximizing uptime on critical gigabit links.

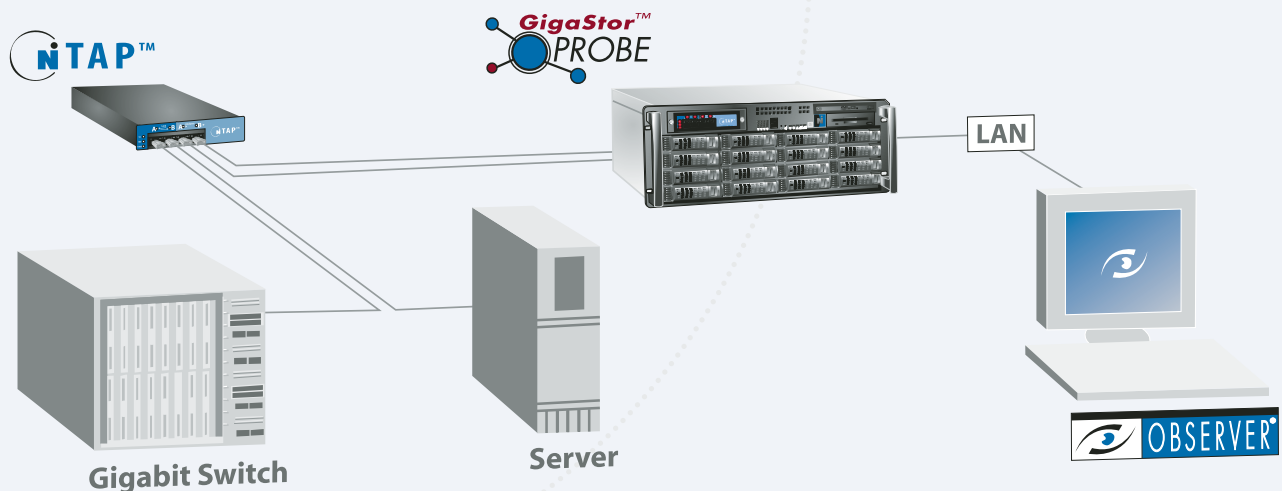
As with all Network Instruments products, the gigabit product line is based on Network Instruments' unique Distributed Network Analysis (NI-DNA™) architecture, which assures complete visibility, a comprehensive feature set, seamless integration and unparalleled functionality across the entire enterprise.

Network Instruments Gigabit Analysis Advantages:

- Monitors up to four full-duplex gigabit links simultaneously
- Obtains full-duplex, wire-speed gigabit capture and statistics
- Utilizes the largest memory buffer (4 GB) in the industry
- Provides for in-depth analysis real-time metrics

Monitor Gigabit Communication from the Edge to the Core for:

- Real-time statistics
- Capacity planning
- SLA and QoS confirmation
- Long-term trending and baselining
- Faster problem resolution
- VoIP performance
- Application response times



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

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 individual ports or up to four full-duplex gigabit trunked links so communication can be viewed on a conversation-by-conversation basis or in aggregate.

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 500 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. This minimizes any impact to the network.

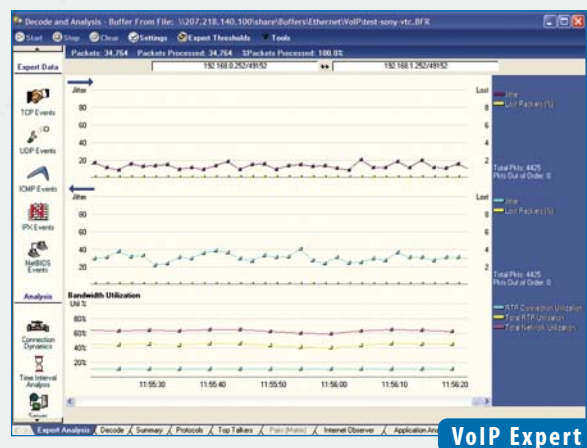
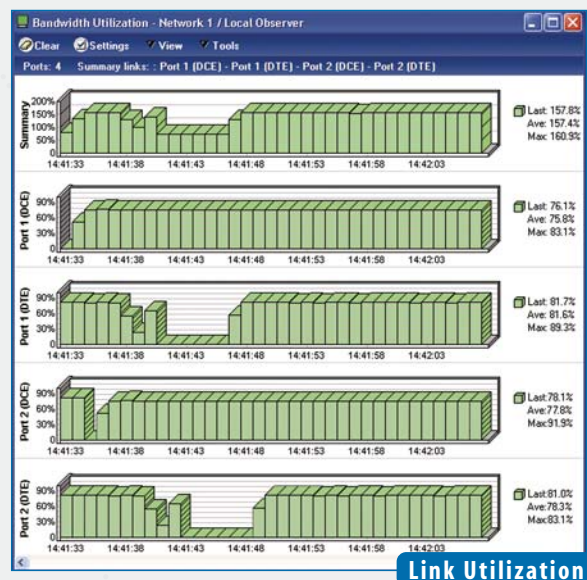
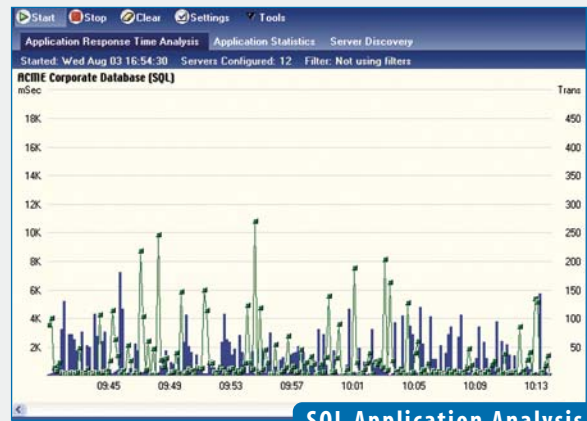
VoIP Expert – Monitor VoIP connections and improve VoIP performance across the organization with VoIP Expert. Observer offers complete decode of VoIP protocols including H.323 and SIP. Save or play voice conversations or streaming video. Track jitter and lost packets (in each direction) and total VoIP utilization.

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

Connection Dynamics – Observer's Connection Dynamics 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 captured data (gigabit and/or long-term captures). Observer can also execute multiple 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. IT administrators can perform capacity planning and other historical analysis. 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.



Network Instruments offers gigabit analysis options for every network

Gigabit Probe Appliance

The Network Instruments Gigabit Probe Appliance offers wire-speed, full-duplex analysis on gigabit links. Gigabit Probes can connect to any Expert Observer or Observer Suite console. Each 4U rack-mountable unit can monitor any optical and/or copper gigabit link. The Gigabit Probe includes the Gen2 Gigabit Capture Card with SFP technology to easily switch between media types.

Advantages of the Gigabit Probe:

- Performs full-duplex, wire-speed gigabit analysis
- Reports to any Expert Observer, Observer Suite or RMON/HCRMOM console
- Performs real-time Expert analysis locally at the probe
- Collects over 30 real-time statistics locally at the probe
- Monitors application response time in real time or post capture
- Includes nTAPs for guaranteed data delivery

Probe System Requirements

The rack mount probe is a complete system, which reports to any Expert Observer and Observer Suite console. The Gigabit Probe may also be licensed as an RMON/HCRMOM probe, which reports to any Observer Suite or RMON/HCRMOM console.



Gigabit Probe

GigaStor™ Probe Appliance

The Network Instruments GigaStor Probe Appliance is a network forensics appliance that provides up to 4 TB or 8 TB of storage, line-rate gigabit capture-to-disk, and advanced trunking in an easy-to-deploy unit. The GigaStor Probe includes the Gen2 Gigabit Capture Card and can monitor up to four full-duplex links. Each 4U rack-mountable unit can monitor any optical and/or copper gigabit links.

Advantages of the GigaStor Probe:

- Capture up to 4 TB or 8 TB of data at gigabit line rate (250 MBps)
- Localizes processing and decoding to minimize network overhead
- Performs real-time Expert analysis locally at the probe
- Monitors up to four full-duplex links depending on configuration
- Includes nTAPs for guaranteed data delivery

GigaStor System Requirements

The rack mount probe is a complete system, which reports to any Expert Observer and Observer Suite console.



GigaStor Probe

Gigabit Observer Suite System

The Network Instruments Gigabit Observer Suite System (GOSS) contains all the hardware and software needed to troubleshoot and manage the most advanced gigabit networks in real time. The GOSS is a fully portable, all-in-one solution with the ability to perform full-duplex, wire-speed gigabit captures and includes a real-time gigabit analysis and a comprehensive Expert system. With the custom-designed SFP-based Gen2 Gigabit Capture Card, the GOSS can easily switch between monitoring copper and optical links. This all-in-one solution is ideal for field engineers or IT consultants tasked with solving elusive network abnormalities at particular points across the organization.

Advantages of the GOSS:

- Contains all necessary hardware and software for complete analysis
- Performs passive analysis—will not interfere with the network
- Performs real-time Expert analysis
- Delivers portability through an all-in-one unit designed for travel and shipping
- Includes nTAPs for guaranteed data transfer from the network

GOSS System Requirements

The GOSS is a complete analyzer, and includes a copy of Observer Suite for gigabit networks. The system does not require any additional hardware or software.



GOSS

All Gigabit Appliances include Gen2™

All Network Instruments' gigabit products include the Gen2 Gigabit Capture Card—Network Instruments internally developed Gen2 technology to ensure maximum Observer performance for full-duplex, wire-speed gigabit analysis. It also delivers higher port densities with SFP modules for monitoring up to four copper or optical full-duplex links. Because the card is based on a Field Programmable Gate Array (FPGA), updates to the card can be made with a downloadable firmware patch, eliminating the need to swap cards or systems.



All Gigabit Appliances include nTAPs

To achieve complete, full-duplex, wire-speed capture all Gigabit Probe Appliances include an internal nTAP that provides a copy of all gigabit traffic to the analyzer. Unlike a SPAN port or port mirror mechanisms on a switch, an nTAP cannot drop packets, nor can it affect switch performance.



High-Capacity RMON Probe Option

The GOSS, the Gigabit Probe Appliance, the GigaStor Appliance and the GigaTrunk 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 nTAPs 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 multiple high-speed links across multiple topologies becomes effortless.

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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Additional Resources for Gigabit Analysis



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