



Fibre Channel Network Analysis

Real-Time Expert Analysis for Storage Area Networks

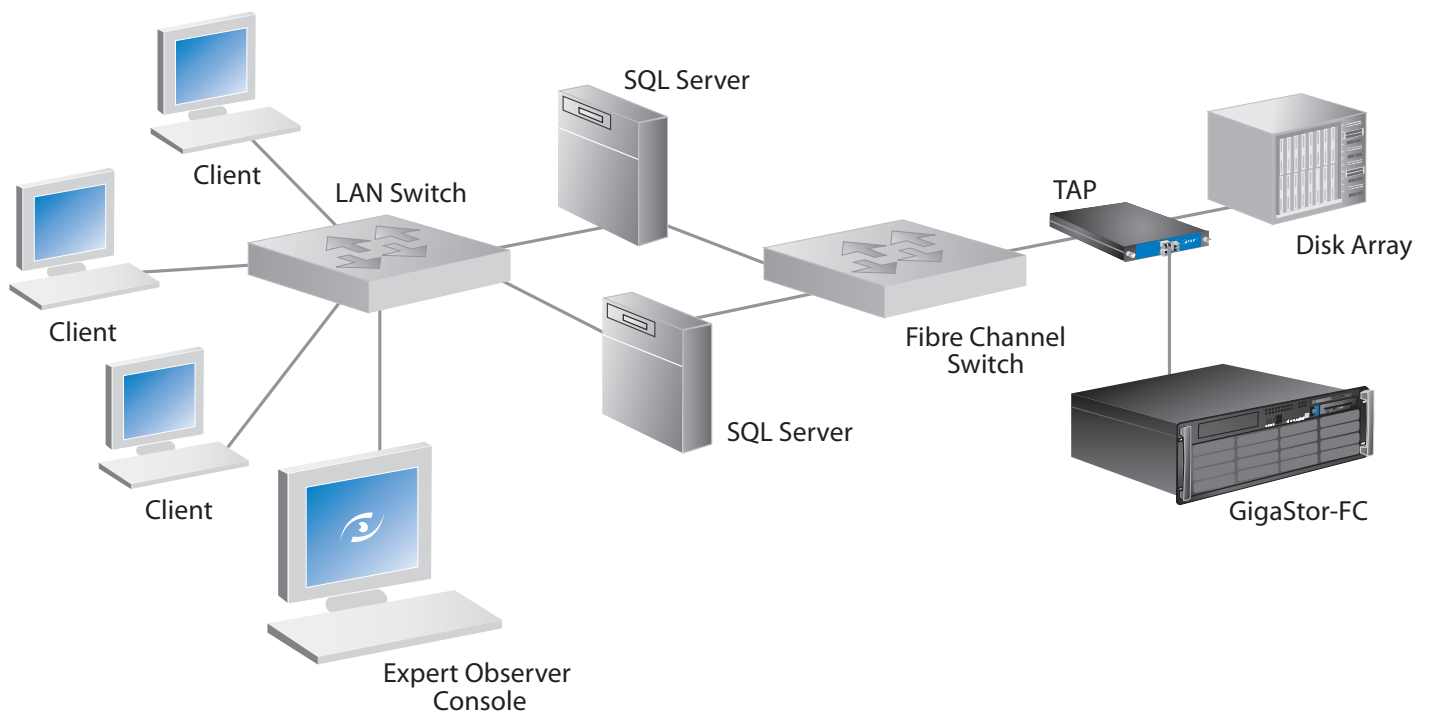
Expanding visibility into SANs

As more organizations implement SANs for their vital storage requirements, the demand for Fibre Channel analysis increases. Network Instruments® has added Fibre Channel support to its existing distributed network analysis architecture (NI-DNA™) to meet that demand. Now you can monitor your SAN environment as easily as Ethernet or WAN.

No other analysis vendor on the market integrates SAN analysis as completely.

Observer's Fibre Channel analysis systems allow you to:

- Decode Fibre Channel protocols
- Monitor over 30 Fibre Channel statistics
- Track application performance
- Set alarms to proactively identify potential problems
- Receive Expert help on 20 SAN-specific issues
- Review aggregate summaries of overall SAN health
- Perform long-term trending and reporting
- Drill down and isolate specific conversations or transactions



In-Depth Analysis for Storage Area Networks

Top Talkers – Observer® displays SAN top talkers for an instant look at how bandwidth utilization is dispersed among users and devices. Review by MAC address (WWA) or IP address, and review packet count, byte count, or utilization percentages.

Capture/Decode – The Fibre Channel decode pane provides a detailed look at conversations. The packet header shows the number of packets currently in the buffer and the first and last packet number. The decode pane also shows full packet decode and the raw packet display. Observer can decode over 30 Fibre Channel-specific protocols.

Expert Summary – Quickly obtain an overview of SAN issues with Observer's Expert Summary. The Expert Summary has three panes:

Summary graph (top):

- shows utilization by percent of bandwidth
- displays packets per second

Network conditions summary table (middle):

- lists problems reported
- provides a count of error conditions

Expert Analysis display pane (bottom):

- offers explanation of the problem
- includes a direct link to troubleshooting options

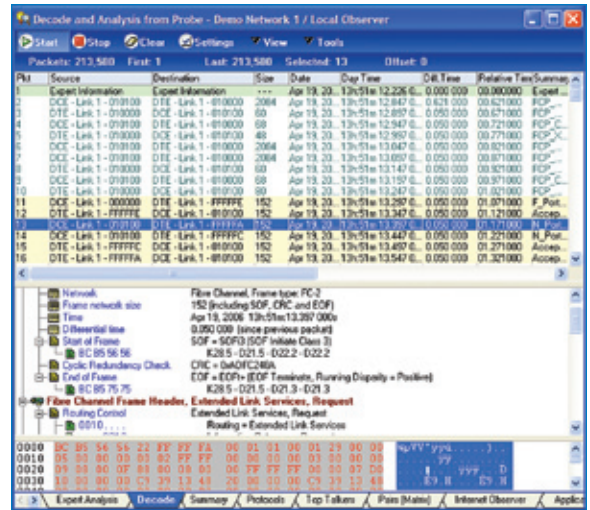
Server Analysis – Observer's Fibre Channel server analysis display is designed to help evaluate a server's or system's response time under various load scenarios. The graph in the top pane shows the response times for each level of simultaneous requests. An average line is shown for baselining purposes.

Fibre Channel Events – Observer displays Expert explanations on abnormal Fibre Channel events. Observer also displays packets in, packets out, bytes in, bytes out, response time, and flags in red any abnormal conditions. The Expert Analysis window provides a description of the problem and possible issues.

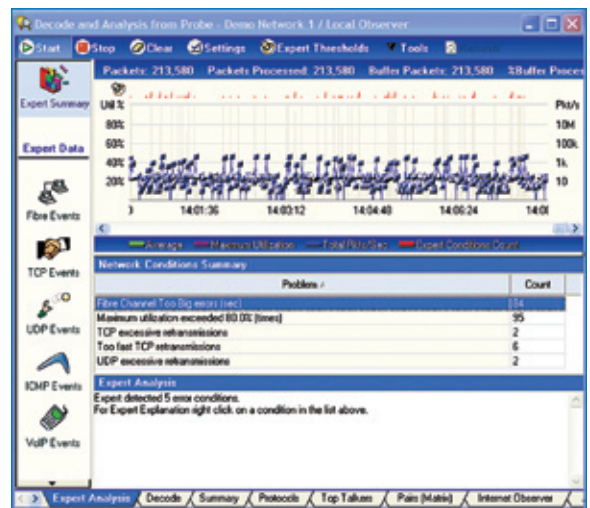
Connection Dynamics – Obtain a graphical view of system conversations with Observer's Connection Dynamics. This unique display shows packet-by-packet display times visually for instant identification of long latency and response times. For example, the screen on the bottom right illustrates where response time began to slow down.

Protocol Distribution – Observer displays all Fibre Channel protocols by packets, bytes, percentage, or percentage of utilization.

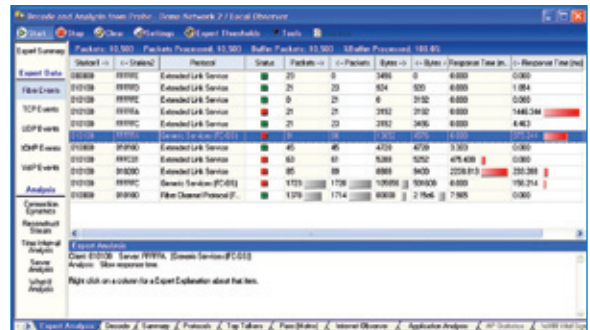
GigaStor-FC Interface – A unique timeline interface for the GigaStor-FC manages, displays, and analyzes capture histories as large as 8 TB. If a user complains about a problem on the SAN that happened between 8 AM and 10 AM this morning, the GigaStor-FC can mine through that time period to quickly isolate and resolve the issue.



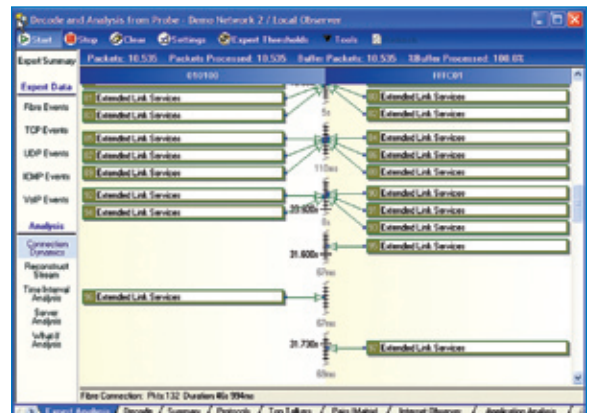
Fibre Channel Decode Pane



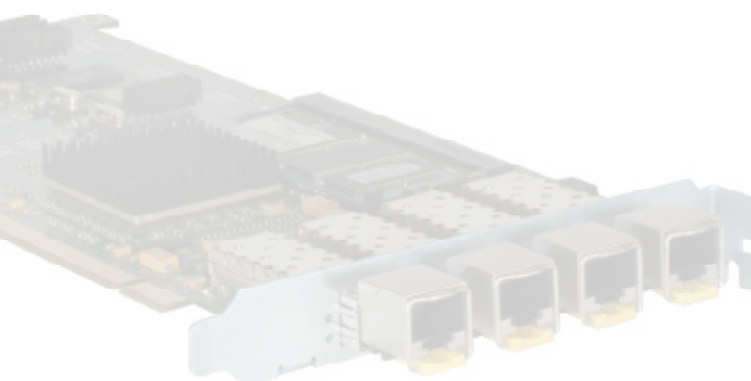
Fibre Channel Expert Summary



Fibre Channel Events



Fibre Channel Connection Dynamics



Choose from a variety of Fibre Channel monitoring options

Common functionality available across the entire Fibre Channel analysis line:

- Configurable as 32-bit or 64-bit systems for maximum analysis performance and scalability
- Utilizes internally engineered Gen2™ capture technology for guaranteed, wire-speed captures
- Localizes data processing at the probe to minimize network overhead
- Provides continuous monitoring with an included nTAP
- Captures large amounts without packet loss with a 124 GB buffer

Fibre Channel Probe Appliance

The rack mountable Fibre Channel probe appliance is the ideal solution for ensuring complete and accurate, real-time captures on your SAN.

- Configures as a local console for on-site analysis
- Reports to any Expert Observer or Observer Suite console on the network



Fibre Channel Probe Appliance

GigaStor-FC

Take advantage of a new paradigm in network troubleshooting. Utilize the GigaStor-FC to capture hours, days, or even weeks worth of Fibre Channel traffic directly to disk for historical analysis. A unique time-based interface greatly speeds problem resolution by completely eliminating the time-consuming task of having to recreate issues. It may 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.

- Store up to 2 TB, 4 TB, or 8 TB of network data or offload to a SAN
- A unique time interface makes it easy to isolate and troubleshoot past events
- Stored data can be reconstructed (web pages, e-mail, IM, VoIP) to support forensics
- Capture to disk at 320 MBps (2560 Mbps)



GigaStor-FC



GigaStor-FC Control Panel

Fibre Channel Observer Suite System (FOSS)

The Fibre Channel Observer Suite System is a fully portable unit that contains all the hardware and software necessary to troubleshoot and manage the most advanced Fibre Channel networks. It is a completely passive system and will not interfere or disrupt network flow. Designed for convenience in travel and shipping, this all-in-one unit is ideal for field service engineers tasked with solving elusive network abnormalities at particular points across the organization.

The Fibre Channel Observer Suite System is a complete portable analysis system and includes a copy of Observer Suite. The system does not require any additional hardware or software.

All in one system

- Observer Suite console software
- Gen2 Fibre Channel Capture Card
- 10/100/1000 Ethernet management port
- All required cabling
- nTAP
- Built-in display, keyboard, trackpad, and CD-RW drive
- Durable, hard case appropriate for airline travel



FOSS

Fibre Channel systems can be configured with one or two full-duplex connections. Links can be monitored individually or in aggregate. Probes report to Expert Observer and Observer Suite consoles located anywhere on the network.

Superior Advantages Provide Maximum Analysis Performance

All Network Instruments Fibre Channel appliances deliver key advantages for ensuring full-duplex, wire-speed capture and SAN analysis.

1 Provides capture and analysis flexibility with Gen2™ technology

The Network Instruments internally engineered Gen2 capture card greatly augments Observer's SAN analysis capabilities.



- Provides analysis port flexibility with the ability to monitor up to four ports for any simultaneous combination of SPAN sessions, full-duplex connections, and trunked links
- Allows for driver updates to be implemented in the field with a simple downloadable firmware patch—eliminating the need to swap cards or systems
- Ensures accurate time-stamping across multiple Fibre Channel links, relying on one card (one clock) with nanosecond resolution to timestamp all of the data across each link

2 64-bit systems ensure maximum Observer performance

Network Instruments' 64-bit systems offer faster processing and larger capture buffers.

- With 64-bit scalability, 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 in real time for rapid problem resolution

3 Manages all data processing and Expert analysis at the probe

All Fibre Channel products have the capability to collect, store, and process data on the probe itself, greatly minimizing network overhead and decreasing problem resolution time.

- Only screen updates are sent to the Observer console
- Speeds up tasks such as Expert analysis
- Greatly reduces network traffic
- Decreases troubleshooting time

4 Comprehensive analysis

All Fibre Channel probes deliver in-depth analysis metrics to any Expert Observer or Observer Suite console located on the network.

- Decodes Fibre Channel protocols
- Monitors over 30 real-time Fibre Channel statistics
- Obtain SAN metrics in real time such as top communicating disk subsystems, protocol distribution, and error counts
- Set alarms to proactively identify potential problems
- Perform long-term trending and baselining
- Speed troubleshooting with over 20 Fibre Channel-specific, real-time Experts

5 Includes nTAPs for guaranteed data delivery

Only a TAP can copy data from Fibre Channel links at line rate for monitoring devices.



- Insert and remove the probe without network disruption
- Acquire an independent view of SAN data flow
- Eliminate dependence on a SPAN or mirror port
- Ensure full-duplex, wire-speed passive analysis

About Network Instruments

Network Instruments provides in-depth network intelligence and continuous network availability through innovative analysis solutions. Enterprise network professionals depend on Network Instruments' Observer product line for unparalleled network visibility to efficiently solve network problems and manage deployments. By combining a powerful management console with high-performance analysis appliances, Observer simplifies problem resolution and optimizes network and application performance. The company continues to lead the industry in ROI with its advanced Distributed Network Analysis (NI-DNA™) architecture, which successfully integrates comprehensive analysis functionality across heterogeneous networks through a single monitoring interface. Network Instruments is headquartered in Minneapolis with sales offices worldwide and distributors in over 50 countries. For more information about the company, products, technology, NI-DNA, becoming a partner, and NI University please visit 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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