CLEARSIGHT NETWORKS™

Data Sheet

HIGHLIGHTS

- Complete visibility into your network in real time and over an extended period of time
- Continuous collection of network statistics
- Unique and powerful "drill-down" analysis facility provides access across all seven OSI layers
- Complete turnkey solution built around enterprise class SAS (Serial Attached SCSI) drive and LSI RAID storage technologies
- Storage configuration sizes of 1.6 TB, 1.6 TB, 4.2 TB, 13 TB[1] and 44 TB[1]

BENEFITS

- Atlas captures, stores and indexes terabytes of network information and provides complete access to application level flows, network statistics and data link information
- Triple Play Ready. Assess the quality of video and voice. MDI, VQFactor, R-Value and MOS values are automatically calculated; playback both audio and video in real-time
- Distributed architecture provides remote and multiple user access
- ClearSight Analyzer capabilities: multi-segment analysis (complete end-to-end visibility), ladder views (view protocol interaction)

Traditional protocol analyzers are hampered by an inability to capture and analyze more than a few gigabytes worth of network traffic. While this yielded acceptable and satisfactory results several years ago, today's generation of networks are far more complex, carrying data, voice and video information in greater and greater volumes.

The ClearSight Network Time Machine® (NTM) extends the capabilities of traditional "Sniffer" tools by removing the limitation on the size of the analyzer's capture buffer. It is able to do this because of a sophisticated RAID storage subsystem that is incorporated into the NTM product. Through this unique design, the NTM is able to collect, index and archive up to 10 terabytes of network data.

In normal operations, the NTM captures network traffic and stores it onto its storage subsystem. The internal analyzer feature can then analyze a subset of this data, all while the NTM continues to capture data.

A new and unique option that is available to the NTM is the Atlas Navigation System. As soon as data is captured by the NTM, Atlas begins indexing and classifying the information. From there, new and powerful views based on the data stored in the NTM storage subsystem are available, making it easy to mine application, network and data link information. This is accomplished by drilling down from areas of interest in order to view related trending charts, flow data, and packet data.

It is similar to the way in which one can use say a world atlas - first see large area maps such as continents, then dive in to see detailed maps of smaller areas such as states and cities, and to look up statistics such as population, climate, and economic data – except in this case we are talking about an enterprise-class Ethernet network. The framework provides an extremely intuitive method of troubleshooting networks.

The days of staring at a three-pane window to review packet decodes are over. Welcome to ClearSight NTM Atlas and welcome to a revolutionary new way to manage and service your LAN networks.

[1] Special order items; please check with ClearSight

The NTM captures incoming traffic from and across four independent GbE ports. The ports can be configured to support both optical and fiber connections. With four ports, the NTM can capture data from two full-duplex or four independent links (*see Figure 1*) at 10/100 Mb/s and 1 Gb/s line rates onto its large storage subsystem (support for 10 GbE is also now available). The storage units employ enterprise class SAS (serial attached SCSI) and SATA (Serial ATA) drive technologies. On some NTM models, both RAID levels 0 and 5 are supported.

The GUI software provides an easy-to-use interface that enables network engineers and administrators to setup and configure the NTM and to capture, index, classify, view and analyze network information. This information is then used to create unique views. These displays are based on the contents of the capture hard disk, and are shown in the Atlas workspace, which you can access by clicking the Atlas button on the tool bar.

Drill Down Application, Network, Data Link and Packet Analysis Across All Seven OSI Layers to Mine Data

Atlas provides a framework to enable users to monitor physical layer information such as bus utilization and frame data rates; from there the user can zoom out to review network layer connections and then zoom out once again to review the application layer information associated with those network connections. At this high level vantage point, the user can once again drill down all the way to the packet decode level. This unique framework to perform troubleshooting greatly reduces the time to identifying the root-cause and thus the time to resolution. At every level, information is presented in a number of different ways to facilitate comprehension -- from trending line graphs, to protocol distribution pie charts to network utilization value tables (*see Figure 2*).

HTTP and VoIP Application Analysis

A number of common applications are supported in Atlas, including HTTP, RTP, SIP and H.323. Additional applications and protocols are planned for the future. As an example, let's consider SIP. SIP is used to make telephone calls over an IP network. Atlas can index and categorize every single SIP telephone call that has passed through a network with an NTM appliance.   View how many calls were made; and review MOS (Mean Opinion Scores) and R-value to gauge QoS (Quality of Service). Access trending graphs and home

in on a SIP call that had unacceptable quality. Then locate the server/client pair involved with this call and review the packet decode data. All this can be accomplished with a few mouse clicks in Atlas.

Remote, Multi-user Access

Atlas's distributed and fully scalable architecture permits remote control and access from any Windows-based PC through a IP network. This allows users to connect to, control and access data from NTMs from anywhere in the world. Each NTM can support up to four remote users. It also supports access through Windows Remote Desktop, PCAnywhere and VNC.

Continuous Capture and Index in Real Time

A key feature of Atlas and the NTM platform is the ability to capture, index and classify complex network information. At the heart of the index and classification engine is a powerful RDMS (relational database management system) which crunches and makes sense of volumes (many terabytes worth) of network data in near real time. This information is then used to create unique views that are critically valuable to assisting network engineers and administrators to proactively manage and service their networks. These views are shown in the Atlas workspace, which are easily accessible by a few mouse clicks.

Full Spectrum of Performance Analysis Data

Performance bottlenecks and issues are often very difficult to detect. They are even more difficult to characterize and remedy. Atlas provides a wealth of performance data including network latency and jitter which are key metrics for understanding multimedia IP performance; service/application response times and network throughput are also important statistics to gauge how good the QoS experience is with applications such as HTTP.

ClearSight Analyzer

The award-winning ClearSight Analyzer (CSA) is integrated with the NTM and Atlas, providing unparalleled protocol analysis and decode capabilities (*see Figure 3*). The NTM and Atlas can be put into CSA mode and turned into a standalone protocol analyzer that is not limited by the size of the analyzer's capture buffer like many traditional analyzers.
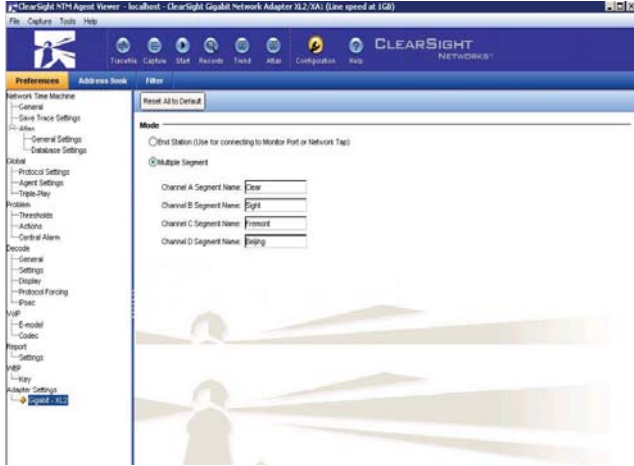
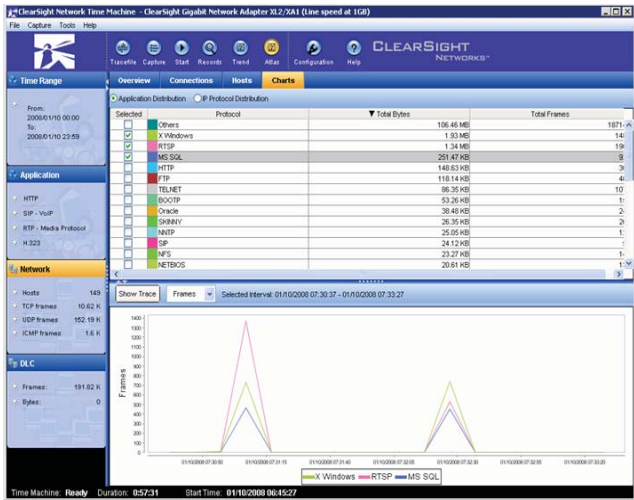*Figure 1: Support for 4 GbE Links or 2 Full-Duplex GbE Connections*

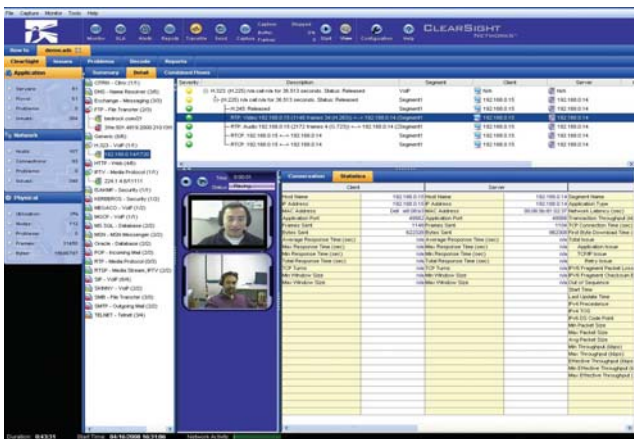*Figure 2: Protocol Distribution over Time*

Figure 3: Playback VoIP and Video Calls

FEATURES

Product Name	Portable2	Standard2	Premium2
Model Number	CSR-4530-H	CSR-4430-2	CSR-4431-2
Capture Performance	Sustained capture rate is typically around 3 Gb/s		
Capture Filter	Yes	Yes	Yes
Save Filter	Yes	Yes	Yes
Display Filter	Yes	Yes	Yes
Payload Slicing	Yes	Yes	Yes
Realtime Alert	Yes	Yes	Yes
Realtime Statistics (RMON1)	Yes	Yes	Yes
Realtime Flow Analysis	Yes	Yes	Yes
Post Analysis	Yes	Yes	Yes
Realtime Report	Yes	Yes	Yes
History Report	Yes	Yes	Yes
Trace File Report	Yes	Yes	Yes
Atlas Option Support	Yes	Yes	Yes
Multi-user, Remote Access	No	Yes	Yes
Storage Capacity	1.6 TBs	1.6 TBs	4.2 TBs / 13 TBs[1] / 44 TBs[1]
Storage Array Support	No	No	Yes
Redundant Power Supply	No	Yes	Yes
RAID Level	RAID 0	RAID 0	RAID 5

[1] *Special order items; please check with ClearSight Networks*

HARDWARE SPECIFICATIONS

Product Name	Portable2	Standard2	Premium2
CPU	Two Quad Core Xeon 5335 Processor2x6 MB Cache, 2.0 GHz, 1066 MHz FSB	Two Quad Core Xeon X5450 Processor2x6 MB Cache, 3.0 GHz, 1333 MHz FSB	
OS	Microsoft Windows 2003 Server		
Memory	4 GBs Direct Connect DMA Striping Channels Memory	4 GB 667 MHz Dual Ranked Fully Buffered DIMMs Memory	
Drives	Storage Capacity: 1.6 TBs OS: 1x200 GB SATA Packet Store: 8x200 GB SATA	Storage Capacity: 1.5 TBs OS: 6x400 GB 10K 3G SAS Packet Store: 15x300 GB 15K 3G SAS	Storage Capacity: 4.2 TBs OS: 6x400 GB 10K 3G SAS Packet Store: 15x300 GB 15K 3G SAS
Monitor/Capture Ports	4 GbE Ports (Copper & Optical) or2 10 GbE XFP Ports (Copper & Optical)		
Power Supply	400/520 W Auto-switching 110/220V AC	2U: Redundant 750W hot-plug auto-switching 110/220V AC	2U: Redundant 750W hot-plug auto-switching 110/220V AC 3U: Redundant 550W hot-plug auto-switching 100/240V AC
Physical Dimensions	5.69in (D) x 16.8in (W) x 11.44in (H) 14.5cm (D) x 42.7cm (W) x 29cm (H)	29.3in (D) x 17.5in (W) x 3.4in (H) 74.4cm (D) x 44.4cm (W) x 8.6cm (H)	2U:29.3in(D)x17.5in(W)x3.4in(H) 74.4cm(D)x44.4cm(W)x 8.6cm(H) 3U:18.9in(D)x17.5in(W)x5.2in(H) 48cm(D)x44.4cm(W)x13.2cm(H)
Weight	3.5 - 19.5 lbs (depending on configuration) (6.1 - 8.9 kgs)	2U: 51 lbs (23 kgs)	2U: 51 lbs (23 kgs) 3U: 78 lbs (35.5 kgs)
Temperature	Operating: 5° to 55°C (41°F to 131°F) Non-operating: -40° to 65°C (-40°F to 149°F)	Operating: 10° to 35°C (50° to 95°F) Non-Operating: -40° to 65°C (-40° to 149°F)	

1 year warranty parts and labor included; additional years can be purchased

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