

ClearSight Networks Newsletter



ClearSight External Newsletter
July 2009

Duplicated Frames in Network Management

When connecting a network monitoring and management tool to a VLAN network environment through mirror or span ports, it is very likely that duplicated packets will be captured. This situation often occurs because the switch is not properly configured, and instead of just forwarding packets from one side of the switch, both ingress and egress side packets are mirrored and forwarded on.



[VLAN Environment](#)

This is not such a problem if duplicated frames can be easily recognized and ignored or discarded. However, many tools lack this capability and will instead get confused and interpret the duplicated frames as retransmissions. This in turn could set off false alarm conditions and send IT administrators scrambling to figure out what in fact is a non-problem. The latter is perhaps the most distressing situation given the reduced staffing that many organizations have to struggle with today. The duplicated frames also weigh down the efficiency of management tools, forcing them to process and analyze unnecessary information.

ClearSight Networks has designed a new capability into the Network Time Machine to support the automated hardware removal of duplicated frames. And because this takes place at the FPGA or hardware level, user level performance of the NTM is not affected.

The flexibility of this feature is also unrivaled. Frame de-duplication can be enabled by channel (there are four GbE channels on the Network Time Machine), and delimited by timeout conditions. There are also several different levels of frame definitions.

This feature will be introduced in the second half of 2009. Evaluations and early adopter versions are available now. Interested customers, please contact ClearSight Networks.

Enterprises Open Their Doors To SaaS and Server Virtualization

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Two newer technologies -- SaaS (Software-as-a-Service) and server virtualization -- are driving rapid changes in enterprise computing. Both hold a key to unlocking significant cost savings to businesses, but not without a price, because they present challenges in the area of network performance and reliability. This article shows how enterprises can reduce capital expenditures and operating expenses by deploying SaaS and server virtualization, and also how to avoid compromising network performance and reliability through proper network monitoring and proactive troubleshooting.

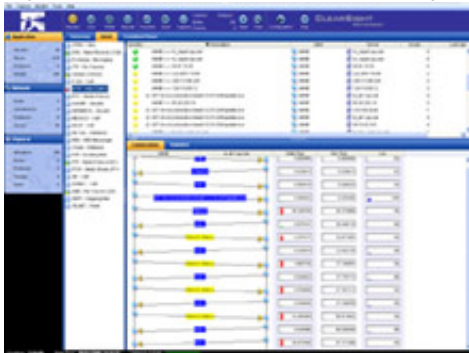
Many of us have had the personal experience of paying hundreds or even thousands of dollars for a new suite of software, only to realize a year later that it was rarely used. Furthermore we spent countless hours installing software updates and patches. Sometimes we have to purchase a new computer, only to find that it has a newer operating system that causes the software to now behave erratically. Now imagine this scenario repeating itself several thousand times over the course of a year in a large enterprise with hundreds of desktop and notebook computers.

SaaS offers a practical solution to these dilemmas; because it lets users rent software rather than buy it. There is a lot of flexibility as to how this can be implemented. In one form, software is installed on the user's computer, but it is initially disabled. Then the user can buy short-term licenses (for example, to have the program enabled for a week), or can pay on a per-use basis. With a properly structured contract, this can result in cost savings, but there is still the problem of software updates.

[more](#)

ClearSight's Ladder View Function Makes it Easy to Spot Errors and Faults in Multi-segment Networks

ClearSight's Ladder View is a unique feature of the ClearSight Analyzer. Using this function helps customers isolate and solve complex network troubleshooting problems quickly.



[ClearSight's Ladder Display](#)

Networks are becoming more and more complicated now and the applications placed upon them have also become increasingly complex. An application flow is a set of packets that performs a specific function, such as a Get or a Post on a web server, sending or receiving an email message, resolving a domain name, or making a phone call. Because there are so many components involved in a multi-segment network, it is often difficult to find out where a problem lies. The problem could be in the client, server, network, or application.

The ClearSight Analyzer provides detailed real-time analysis for many important network applications, including Oracle and MS SQL databases, POP, SMTP, and Exchange email, and VoIP applications. Multi-segment analysis begins by placing an analyzer at each location involved, capturing traffic simultaneously, and then merging the data. The ClearSight Analyzer makes finding bottlenecks or other problems faster and more efficient by taking advantage of this unique ladder diagram display function.

For each detected flow, the ClearSight analyzer rebuilds and displays the interactions and transactions between a client and server. If you select an individual flow, the multi-segment ladder view appears in the Conversation tab of the Statistics pane. By seeing packets that are being sent but never received, a customer could isolate this as a network issue. Statistics on the intermediate switches could then be queried to see which switch is dropping the packets.

Locating the specific issue in a multi-segment environment is a challenge. The key is to look in more than one place a time. ClearSight's ladder view function lets you do exactly that!

The Merits of NTM Distributed (NTMD)

Using ClearSight Analyzer Reports for Network Data Analysis



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Using ClearSight Analyzer for Postcapture Analysis



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Creating and Applying ClearSight Analyzer Filters



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Past Issues

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The standalone version of ClearSight's Network Time Machine (NTM) is a powerful network recording and analysis appliance. It is primarily useful in situations where all of the networks of interest are local to the NTM device. Many ClearSight NTM customers choose the standalone version when they purchase a portable NTM unit.

However, when these networks are located at some distance from the NTM operator, and particularly when there are many of them, the Network Time Machine Distributed system offers the following advantages:

- A single operator can observe many different networks, using NTM Agents at each network location, and a single Agent Manager for the operator.
- Traffic at disparate locations can be correlated by transferring trace files to the Agent manager machine and merging the trace files to perform multi-segment analysis.
- Network problems can be identified, and alerts can be aggregated in a single Central Problem Manager display on the Agent Manager machine.
- Configurations can be changed and capture can be started and stopped simultaneously on several different Agents, all under the control of the single Agent Manager.

But customers do have a choice when they purchase our NTM products; they can select the standalone version or the distributed one. ClearSight continues to support the multi-tiered requirements of our diverse customer base.

Using TCP Retries to Validate Network and Application Performance

Although TCP based applications take advantage of that protocol's built in mechanism for insuring reliable transactions, they can also create additional loads on a network when the application/server components are faulty.

Network engineers allege that the network itself is not to blame for the bottleneck -- it has to be the client or application server. The application guys, on the other hand, beg to differ. The application, server hardware, and clients would usually run smooth as silk if it weren't for the network. In either case, keeping track of TCP retries over time is one method of profiling a network or a particular application.



[TCP Retries](#)

The Network Time Machine provides trending displays of TCP retries for any network flow and associated applications it records. This opens up quite a number of troubleshooting possibilities for the application engineers. Trending of TCP retries can be used in many different areas, including:

- Profiling – this, in conjunction with response time statistics available for network flows, allows an engineer to profile a network and application over time.
- Pre-deployment testing – a snapshot of the network in terms of the aggregate TCP retries can be compared with post-deployment numbers.
- QoS verification – tracking TCP retries of specific applications as a result of changes in QoS settings at network components (e.g. WAN accelerators).
- Finding slow performing servers – the top network flows in terms of TCP retries can be displayed in tabular format. The applications they're running are also listed. This allows engineers to focus on those clients/servers or applications that have a higher number of retries compared to others. Maybe a server is running low on memory, experiencing hard disk failures, or facing some unique anomaly.

ClearSight Networks In Processor Magazine

ClearSight Networks participated in a Processor Magazine story entitled "Deal With Glitches Proactively & Put The Right Tools In Place For Troubleshooting" with Empirix and Siemens AG.

Understanding the health of a network can be similar to thinking about personal health: If you don't know what healthy feels like, how do you recognize sickness?

"One main challenge for most of the harried network administrators out there is finding the time to 'baseline' their network, so they can readily identify issues or trends that may lead to problems if left unaltered," says Glen Siemetz, senior director of data center strategy and portfolio at Siemens IT Solutions & Services, a business unit of engineering firm Siemens AG (www.siemens.com).

Creating a baseline will help identify not just issues but also network configuration glitches, he notes, adding that there are a number of helpful tools, especially in the open-source realm, that can baseline traffic types, users, and network bandwidth utilization. In addition, most WAN-based channel service units and data service units provide network and even application-based traffic information, he says.

"Determine your critical paths, place sensors or even a temporary sniffer or probe, and look," Siemetz says. "You will be surprised at what you discover, and when there are issues, abnormalities will be easy to spot and diagnose."

[more](#)

Hosted VoIP Provider Aptela Works with ClearSight Networks to Resolve Network Issues Faster and More Cost-effectively

Hosted VoIP services are on a strong growth trajectory, speaking to Aptela's business model. According to a recent Infonetics Research report, the VoIP services market grew 33 percent to \$30.8 billion in 2008.

As a hosted-PBX and VoIP service provider, Aptela routes customers' voice and data traffic via the Internet. For SMBs with limited IT resources and budgets, this method provides the benefits of a scalable and powerful VoIP system without the associated price tag; however, it also means that Aptela does not have visibility into the network hardware at each customer location. Using ClearSight's NTM and pre-established metrics, the company now has greater insight and better visibility into any VoIP call, fax, email or phone registration over the network -- and may quickly identify possible causes of latency, jitter and other call quality problems.



Network Time Machine

"ClearSight's NTM is like a metal detector for finding needle-in-a-haystack problems across all points within the network," said Matt Smith, vice president of technology and client services, Aptela. "Because Aptela works with so many customer and carrier networks in addition to our own network, it used to be nearly impossible to pinpoint specific issues and their origins. Now, with ClearSight's NTM, we can take retroactive network data, pull up metrics on any call, and identify the source of the problem. We are able to resolve issues and performance bottlenecks for our customers and carriers faster, more accurately and with less overhead."

[more](#)

News Flash

This section is aimed at keeping you informed with the most recent ClearSight news and articles.

Case Study: ZC Sterling Takes ClearSight Into Contact Centers

(Phone+ - Jun 12, 2009) ZC Sterling Corp. is a leading provider of specialty insurance and technology-enabled solutions for the mortgage servicing industry. The company provides hazard insurance tracking and outsourcing services, voluntary homeowners insurance, customized real estate tax services, back-office business process outsourcing, customer care solutions and Hispanic call center services for lenders, mortgage servicing organizations and homebuilders nationwide. ZC Sterling is headquartered in Atlanta, Ga. with operations in Calif., Fla., Iowa, Neb., N.M. and N.C. Read the full article at [Phone+](#).

Aptela Leverages ClearSight Networks Solutions

(TMCnews - Jun 09, 2009) ClearSight Networks, a provider of application and analysis tools for dynamic networks, announced that Aptela, a supplier of hosted Voice over IP (VoIP) solutions for small- and medium-sized businesses (SMBs), is using ClearSight's Network Time Machine (NTM) to proactively diagnose problems on customer and carrier networks. Providing advanced levels of prevention and diagnosis, ClearSight said its NTM empowers Aptela to quickly and easily maintain network uptime and stave off unexpected outages. Read the full article at [TMCnews](#).

Where Do You Look to Build Your Network Toolkit?

(Enterprise Networking - Jun 08, 2009) In our last three tutorials, we reviewed the five Specific Management Functional Areas, considered some of the classic systems for enterprise management, and looked at each of seven layers of the Open Systems Interconnection (OSI) Reference Model and used it as a framework for considering the various challenges of managing the enterprise. In those discussions, we found that the lower three layers are typically implemented in hardware, and the upper four layers are typically implemented in software. These distinctions imply that different tools will be required to address implementation or management issues at these various layers, and that the network manager will need more than one tool in his or her toolbox. In this tutorial, we will explore the different categories of tools that would be good to have in your network management arsenal, beginning with those that are used to test the physical layer. Read the full article at [Enterprise Networking](#).

Aptela and ClearSight Resolve Network Issues Faster and More Cost-effectively

(TMCnet.com - Jun 08, 2009) ClearSight Networks recently announced that its Network Time Machine (NTM) has been deployed by Aptela in a bid to aggressively figure out glitches on customer and carrier networks. Aptela provides hosted VoIP and PBX solutions for small and medium sized business (SMBs). The NTM offering from ClearSight delivers a never seen before level of defect detection and diagnosis which will allow Aptela to preserve network up time in a fast and cost efficient manner and prevent loss due to network outages. Read the full article at [TMCnet.com](#).

Hosted VoIP Solutions Provider Aptela Works with ClearSight to Resolve Network Issues

(VoIP.biz-news.com - Jun 05, 2009) Hosted VoIP solutions provider Aptela has announced that its working with ClearSight Networks' Network Time Machine (NTM) to diagnose problems on customer and carrier networks. Matt Smith, vice president of technology and client services at Aptela, said the solution allows them to quickly and easily maintain network uptime and stave off unexpected outages. Since Aptela works with so many customer and carrier networks in addition to its own network, it used to be nearly impossible to pinpoint specific issues and their origins. Read the full article at [VoIP.biz-news](#).

Fixing VoIP-over-3G quality issues with 3G-324M

(iLocus - May 25, 2009) In a recent company announcement ClearSight introduced their latest version of network analysis solution that helps wireless operators test VoIP-over-3G readiness. The solution contains test algorithms based around 3GPP protocol for video telephony – 3G-324M. It is interesting to note that early version of VoIP on wireline

networks also leveraged a video telephony protocol, H.323. Read the full article at [iLocus](#).

ClearSight Seeks To Improve 3G Mobile VoIP Management

(Campus Technology - May 21, 2009) The newest release of ClearSight Networks' network monitoring appliance addresses voice over IP quality of service. Version 7.0 of Network Time Machine (NTM) enables network administrators to quantify voice quality on 3G mobile networks. Read the full article at [Campus Technology](#).

ClearSight Unveils Network Time Machine 7.0

(TMCnet.com - May 11, 2009) ClearSight Networks, a provider of application and analysis tools for today's dynamic networks, has unveiled version 7.0 of its network capture appliance, Network Time Machine (NTM). This upgraded version enables network administrators to offer enhanced 3G Mobile VoIP experience to their customers and meet the demands of increasing mobile Internet services. Read the full article at [TMCnet.com](#).

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