FLUKE networks

NetAlly® Application Advisor

Monitor End User Experience for Local and Remote Users, Distributed Sites and Applications

Part of the OptiView Management Suite (OMS)

OMS provides the breadth of visibility and depth of analysis for a complete picture of network and application performance. It's the only solution that combines proactive monitoring with in-depth "on-the-wire" analysis and portability to see problems up close – anywhere on the network.

By combining best of breed solutions for monitoring, analysis and trouble-shooting, OMS can be used as a holistic management suite or part of your IT organization's toolset, to help reduce complexity and improve productivity in your team's daily workflow.

NetAlly Application Advisor adds an application-centric view of your network to the OMS. By placing agents where your users are (local or remote, connected by LAN, WLAN, or WAN) and running the applications they run (FTP, DNS, HTTP, VoIP), NetAlly provides a simple, cost-effective way to measure the end user customer experience.

The goal of a well-run network is to provide your end users with immediate access to the applications they need. How do you know if the network is delivering? Network management solutions provide a view of the devices and links on your network such as which ports are up or down, traffic patterns, and server or router utilization. While these measurements can provide hints, they can't provide a complete picture of the user's application experience. NetAlly completes the picture by adding an application-centric view to the device-centric view provided by network management.

NetAlly can help you answer the critical questions such as:

- What are the end users' response times and call quality?
- How does the performance of an application vary by site or time of day?
- Is the network the source of the problem?
- Is my service provider meeting their SLA's?
- How have IT infrastructure changes impacted end user experience?

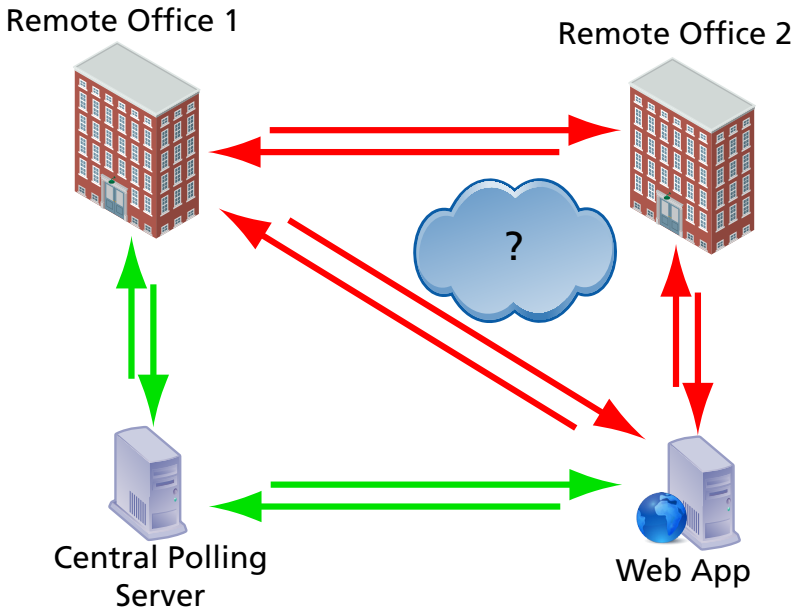

Figure 1: Central polling lacks visibility into the performance of intersite communications and transactions with offsite resources

Monitor and troubleshoot end user application experience

Today's networks offer three major challenges which make it difficult to understand how applications are performing.

First, many, sometimes most, of your users access applications from remote locations. So just knowing how the servers are responding to local queries won't tell you if remote users are experiencing problems.

Second, modern networks are designed to handle different types of traffic in different ways. Traffic shapers and QoS networks prioritize some traffic over others, while firewalls may not let certain traffic through at all. So just sending some PINGs won't give you an accurate view of response time.

Third, much of the traffic travels from one site to another avoiding the HQ or data center, such as MPLS networks handling VoIP phone calls or traffic to Application Service Providers. So a purely centralized monitoring approach won't even be aware of issues these users face.

To measure application performance on these networks, you need a solution that is closer to the client and closer to the application.

Proactive Application Monitoring Keeps You In Control

Fluke Networks' NetAlly Application Advisor provides a simple, effective way to measure application performance by measuring the performance of actual application transactions. It adds the user experience to the device centric view provided by network management.

NetAlly Application Advisor Deployment

With Application Advisor, Traffic Agents are placed where the users are and run the applications the users run.

Lightweight software Traffic Agents are deployed throughout the network at different sites, on multiple VLANs, and servers (including multiple virtual servers, as desired) - anywhere end-to-end performance needs to be measured. Traffic Agents can be directed to measure in all the ways that a modern network is designed:

- From the Agent to the Data Center (or multiple data centers) to measure application performance
- From one Agent to another to measure site-to-site performance on MPLS networks or for applications such as VoIP
- From the Agent to devices in the network to measure network performance
- From the Agent to devices outside your network to measure application performance of application service providers
- From one Agent to another inside virtual servers to assess packet loss and application delay

Since the Agents send correctly encoded user traffic, use the same network infrastructure and the same applications, they recreate the user's experience. Agents are centrally distributed and controlled, and run on most any Windows PC or server.

The core of NetAlly is the Test Center Server, which collects test results from the Traffic Agents, displaying them and providing alerts when things go wrong.

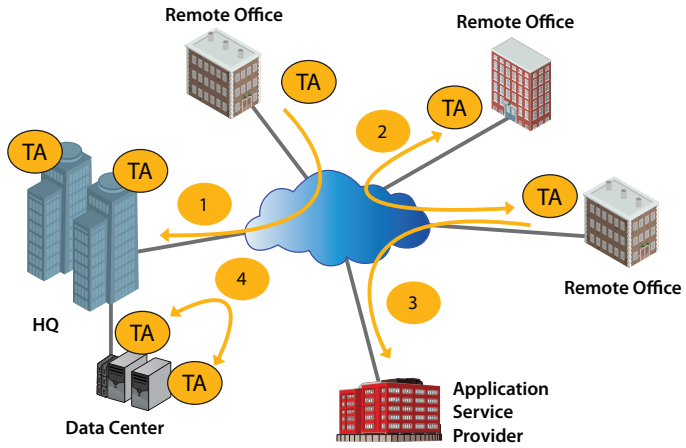

Figure 2: Traffic Agents (TA) test from (1) remote sites to the HQ/data center data center; (2) remote site to remote site; (3) remote site to external resources; (4) between multi-tiered applications or virtual servers in the data center

Name	Index		Result
CRM Web Access	214		X
DNS Server	105		✓
Oracle Web	109		✓
POP3 Server	107		✓
SMTP Server	106		✓
VoIP Performance	114		✓

Figure 3: See status of key applications and network services at a glance

Flexible test configurations to match your environment

Each test can measure the performance of multiple applications, including:

- DHCP
- DNS
- eMail (Internet, POP3, SMTP)
- RADIUS
- FTP
- HTTP; HTTPS
- VoIP
- Multicasting
- User Defined Applications (UDP, TCP, Specified Port)

Tests can be scheduled to run regularly (such as every five minutes), or only when needed. A single test can monitor an application from all the agents on the network, reducing configuration time. Each test can be appropriately configured to match your requirements, with user selectable port numbers, payload sizes, QoS settings, and even user name/password where required. Limits may be set for parameters such as connection time, delay, loss, throughput, jitter, and even MOS (for VoIP tests). Results are shown on the screen in a simple pass/fail format so that a quick glance can verify everything is OK. Or, set up notifications by e-mail, SNMP traps, or by running a program on the Test Center.

Reporting

Analysis Reports let you take a “deep dive” into the performance of individual applications, sites, or network elements. Many reports are available, and can be generated with a single click.

Reports include:

- Trending (delay, loss, jitter)
- Availability
- Timing Breakdown for HTTP/HTTPs transactions
- VoIP Analysis
- Network Performance
- Network Path Maps
- Dual Test Analysis Reports for correlating two test results

Analysis reports may be made available to a wider audience or when working offsite through a web browser.

Monitor and Analyze Virtual Environments

Virtualization and cloud computing - while leading to greater efficiencies in your IT infrastructure - create critical gaps in your visibility of network and application performance. Bandwidth, latency, and packet loss inside these gaps could be responsible for poor performance. By testing and monitoring the actual path of your applications throughout your network, including your WAN or provider clouds, NetAlly Application Advisor gives you the end-to-end visibility needed to assure performance across your network. Service Level Agreements can be monitored and analyzed, with the ability to easily create management reports proving network performance. NetAlly agents can also be used to gain visibility into performance between virtual servers, even between servers on the same blade.

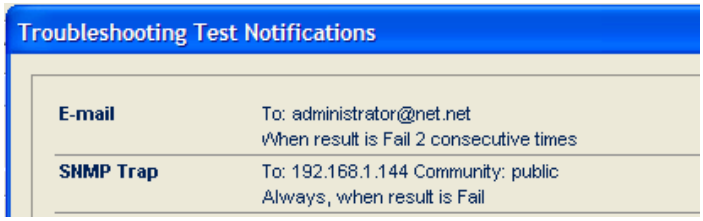

Figure 4: Flexible event notification

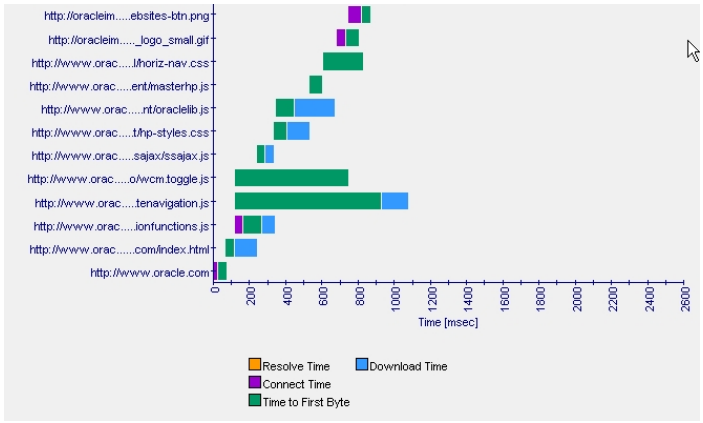

Figure 5: Detailed breakdown of HTTP / HTTPS transactions.

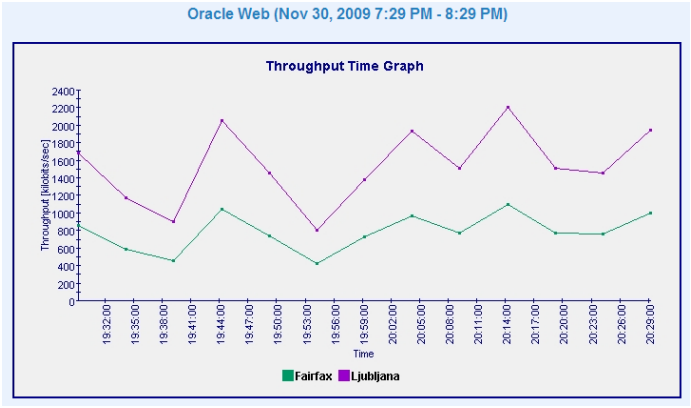

Figure 6: Trend performance of applications to and from multiple sites

Powerful Analysis for Fast Troubleshooting

Application Path Analysis

"Proving it's not the network" is often a daily task for network professionals. To speed that effort and troubleshoot the root cause of performance problems anywhere in the network, Traffic Agents can measure key network parameters along the application paths:

- Trace Route with interface and device performance analysis along the IP route
- Network path performance for user defined UDP and TCP ports or ICMP
- Class of Service Testing for user definable UDP and TCP ports
- Duplex Mismatch Testing
- SNMP Tests for interface trending or custom MIB trending.

Device Analysis

Traffic Agents can direct their tests at IT resources (such as application servers and routers), external resources (such as web servers providing software as a service), or other Traffic Agents. This allows measurement of the network infrastructure and verification that devices and links are performing properly, and that Service Level Agreements are being met. These tests can also be set up with limits and notifications when these limits are exceeded. Measurements of network components and links include:

- Delay
- Loss
- Jitter
- Throughput
- Availability
- Interface utilization, errors, and device processor and memory utilization

Troubleshoot Directly from the User's PC

Individual user performance problems pose a challenge, especially those working from small or home offices where you can't always install a Traffic Agent. That's why NetAlly lets you troubleshoot from any individual end user's PC, anywhere in the network, at any time. The NetRegard Agent can be temporarily loaded to any PC running Internet Explorer with a Java plug-in. These agents take only seconds to load directly from the Test Center. Once the agent is loaded, it can be instructed from the test center to run any of the desired tests and report the results. When the browser is closed, the NetRegard agent is deleted from the PC. This capability extends the power of NetAlly Application Advisor to any endpoint in your network, worldwide.

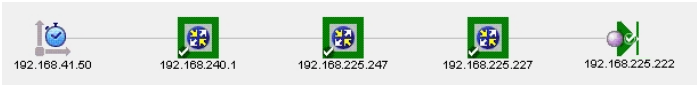

Figure 7: Verify and monitor performance of applications, network devices and links – across your WAN, service provider cloud, or virtual environment.

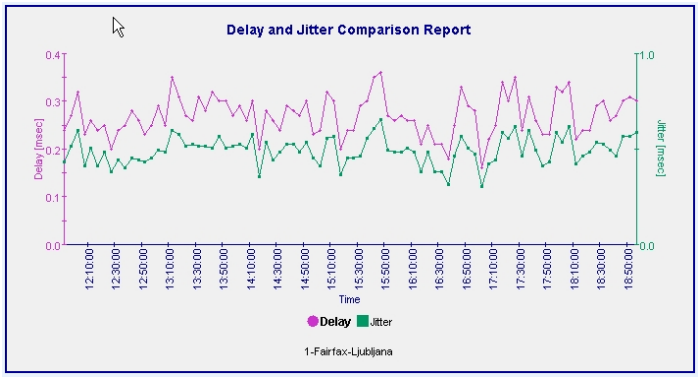

Figure 8: Delay and Jitter Report

Divide and Conquer Troubleshooting

By distributing Traffic Agents to key points in your network, you can quickly divide the network into segments and rule out or identify the problem segments. Identify whether the problem is at the edge (wired or wireless), in the distribution layer, the core, the WAN, or even between servers in the data center.

Extending the Power of the OptiView Portable Network Analyzer

The OptiView Integrated Network Analyzer works with the NetAlly Application Advisor to monitor and troubleshoot application performance in two ways. First, the OptiView is provided with a Traffic Agent that allows it to test the performance of applications and network components anywhere it's connected – wired or wireless. Second, the OptiView can control the Test Center from anywhere in the network to review the status of ongoing monitoring or to create and launch one-time tests to multiple sites inside or outside the network.

By using OptiView and NetAlly together, a Network Engineer can simulate traffic and use OptiView's unique features to monitor and analyze it. Capture the transactions between the installed Traffic Agent and the target devices and use the Protocol Expert to analyze them to the packet level. Or use, OptiView's traffic generation capability to see how the applications will respond under varying traffic loads.

VoIP Assessment Option

For network engineers or system integrators responsible for new VoIP deployments or expanding an existing one, it's essential to understand the expected performance and what, if any measures need to be taken to ensure a successful implementation. The NetAlly Network Assessment and Troubleshooting option quickly and automatically determines the network readiness for VoIP and provides tools to identify and resolve service and readiness problems across the entire network.

NetAlly quickly validates the network to avoid delayed deployments, cost overruns and dissatisfied customers. Consult the VoIP Assessment Option for NetAlly data sheet for more details on the option and its applications.

Technical Specifications

Flexible, Scalable System Architecture

NetAlly Application Advisor is designed to be simple to install and use, but can grow to support large and complex installations. The architecture of the system allows the components to be distributed for maximum flexibility

Test Center – Installed on a dedicated server, the Test Center is the core of the NetAlly Application Advisor. It communicates with other NetAlly and third-party components in order to execute network analysis tests collect data, analyze results, set traps, and generate reports. Components such as the User Interface, or remote agents may be installed quickly by accessing the Test Center through a web browser. Comprehensive reports are available for review and analysis.

User Interface - The User Interface component provides complete control of the NetAlly Application Advisor from anywhere in your network. Multiple instances of the UI may be installed and used by multiple users with individualized accounts and access.

Traffic Agents - Traffic Agents are installed at strategic locations within the network, either on existing server or client computers, on dedicated machines, or the OptiView Portable Analyzer, where they generate and receive network traffic for analysis by the Test Center. The Test Center initiates scheduled or on-demand tests by sending instructions to the relevant Traffic Agents, which then inject traffic into the network and simultaneously intercept traffic from the network and other Traffic Agents. The results measured are collected by the Traffic Agents and then sent back to the Test Center for analysis and reporting.

NetRegard Agents - Identical in functionality to the Traffic Agents, these virtual devices can be deployed immediately as needed to any computer with a standard Web browser, allowing comprehensive end-user perspective network troubleshooting. Using NetRegard Agents, true end-to-end network path testing can be quickly and easily accomplished to any end user desktop on the network.

Network Devices - NetAlly correlates the end-to-end measurements taken by sending traffic between Traffic Agents and collecting interface statistics from the network devices using SNMP. This correlation enables the application to trace labeled generated traffic as it passes through networking gear and is a key source of NetAlly's network performance assurance and troubleshooting capabilities.

NetAlly Proxy - In order to conduct network testing beyond the enterprise's network boundaries or across a WAN or VPN, it is often necessary to traverse firewalls. While maintaining complete network security, NetAlly Proxy allows the Test Center to communicate with Traffic Agents, Web-based NetRegard Agents, and SNMP-equipped devices located beyond firewalls, whether within a DMZ, an extranet, or the global Internet.

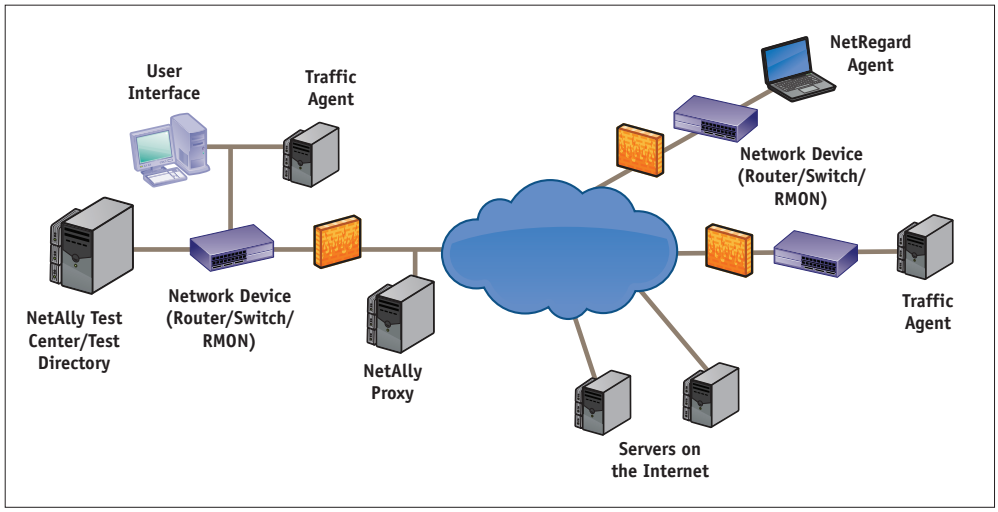

Figure 9: NetAlly system elements

NetAlly Application Advisor Tests

Test	Targets	Measurements
DHCP Client Registration	DHCP Servers	Response Time
DNS Server Query	DNS Servers	Resolve Time Number of Answers Availability
Internet Mail Server Performance	E-Mail Servers	Retrieve Time Availability Throughput
RADIUS Server Viability	RADIUS Servers	Status Number of Servers Responding Server's Number Total Time
HTTP(S) Web Page Performance	Web Servers	Total Time Throughput Availability Breakout Per Web Element • Resolve Time • Connect Time • Time to First Byte • Download Time
Server Port Connectivity	Any server	Connection Time Response Time Availability
FTP Download Performance	FTP Servers	Response Throughput Response Time
Ping	Any IP device	Loss Percentage Round Trip Time
UDP / TCP / ICMP Performance	Traffic Agents	For each CoS: • Delay • Throughput • Jitter
SNMP (Interface Statistics and MIB Variables)	SNMP Agents	Interfaces: • Inbound and Outbound Utilization and Errors Other MIB Variables: • Counter values and change status
VoIP (G.711, G.723, G.726, G.729a/b/c)	Traffic Agents	MOS Throughput Loss Jitter Delay Out of Order % Availability
Multicast	Traffic Agents	Loss Throughput Jitter
Duplex Mismatch	Traffic Agents	Loss Duplex Status
Route Quality	Traffic Agents	Path Inbound / Outbound Utilization Memory / CPU Utilization Delay Loss

Minimum System Requirements:

Product	Operating System/Processor	RAM	Disk Space
Test Center	Microsoft® Windows® XP, SP 1 and later; Server 2003; Windows Vista®. Intel® Pentium® IV, 1.4GHz processor and greater or Pentium M processor. Intel Xeon, 1GHz processor and greater.	512 MB	2 GB
Traffic Agent	Windows XP, SP 1 and later; Server 2003; Windows Vista. Intel Pentium III 800 MHz processor and greater or Pentium M processor.	256 MB	200 MB
User Interface	Windows XP, SP 1 and greater; Windows Server 2003; Windows Vista. Intel Pentium IV, 1.4GHz processor and greater or Pentium M processor. Display: color palette of at least 16-bit colors. Resolution: 1024 x 768.	256 MB	200 MB
NetAlly Proxy	Windows XP, SP 1 and greater; Windows Vista. Intel Pentium IV 1.4GHz processor and greater. Intel Xeon, 1 GHz processor and greater.	512 MB	300 MB
NetRegard Agent"	Microsoft Internet Explorer®, version 6.0 and later. Mozilla, version 1.4 and later.		

Models, Options and Accessories	
APPAD–TC-2	NetAlly Application Advisor Test Center + 2 agents
APPAD–TC-5	NetAlly Application Advisor Test Center + 5 agents
APPAD-TC-10	NetAlly Application Advisor Test Center + 10 agents
APPAD-TC-25	NetAlly Application Advisor Test Center + 25 agents
APPAD-TC-50	NetAlly Application Advisor Test Center + 50 agents
APPAD-VOIP	VoIP Assessment Option for Test Center
APPAD-2-5	APPAD-TC-2 to APPAD-TC-5 Upgrade
APPAD-5-10	APPAD-TC-5 to APPAD-TC-10 Upgrade
APPAD-10-25	APPAD-TC-10 to APPAD-TC-25 Upgrade
APPAD-25-50	APPAD-TC-25 to APPAD-TC-50 Upgrade
GLD-APPAD-2	Gold Support for APPAD-TC-2
GLD-APPAD-5	Gold Support for APPAD-TC-5
GLD-APPAD-10	Gold Support for APPAD-TC-10
GLD-APPAD-25	Gold Support for APPAD-TC-25
GLD-APPAD-50	Gold Support for APPAD-TC-50
GLD-APPAD-VOIP	Gold Support for APPAD-VOIP

Note: A minimum of one test center and two traffic agents are required

NETWORKSUPERVISION

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Fluke Networks operates in more than 50 countries worldwide. To find your local office contact details, go to **www.flukenetworks.com/contact**.

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