

Deploying new technologies and applications safely and efficiently

Today's networks are typically very stable. The problem is they aren't static. New network technologies and applications are challenging IT departments to rapidly integrate into existing networks with minimal disruption and degradation of performance.

This white paper highlights several of those scenarios and shows how to implement new technologies and applications with minimal disruption and continue to deliver a high level of service.

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Deploying new technologies and applications safely and efficiently

As if it's not enough to design, install, troubleshoot and maintain existing networks, IT departments have a plethora of new situations to contend with due to the rapid pace of technological change. Wireless networks, Voice over IP (VoIP) and new enterprise applications are challenging IT departments to rapidly integrate new technologies into existing networks with minimal disruption and degradation of performance.

Integrating wireless into a converged network means keeping up with not only new technologies and an ever-changing "network" (that of the mobile user), but also the security comprises introduced by Wi-Fi. It's a difficult and challenging task to keep control of a wireless network that, by design, is constantly changing. It requires an end-to-end management approach focused on each phase of the wireless lifecycle: pre-deployment and planning, installation, verification, troubleshooting and management.

Like wireless, VoIP is increasing in popularity. VoIP is a mission-critical application because users won't tolerate poor performance: They're used to the uptime of the traditional telco, and they apply that same expectation to VoIP. In fact, in order to reap the benefits of VoIP, companies must be equipped to proactively address its unique performance issues and ensure high levels of reliability, well beyond those required with data applications. And that responsibility falls on the shoulders of the IT department.

In addition to implementing wireless and VoIP, network professionals deal with the inevitable software upgrades and enterprise-wide rollouts of new applications. When deploying a new application – or upgrading existing ones – network professionals first must ensure the infrastructure can handle it, then test to make sure performance meets expectations after deployment.

Managing multiple network changes with just one tool

The challenge is preparing for, troubleshooting and maintaining these new technologies quickly and efficiently so the network size and number of applications can grow while still providing the expected level of service.

Although wireless, VoIP and the seemingly infinite realm of new applications might appear to require different tools for verifying, testing and troubleshooting, there are integrated analyzers on the market that combine a variety of tools into one portable device. The scenarios that follow illustrate the benefits of using a portable, integrated analyzer in all three cases, whether dealing with Wi-Fi, VoIP or new software.

The changing landscape of the network professional

Wireless

Enterprise-class wireless networks are growing 12% per year, and total wireless spending is expected to reach \$3.5 billion in 2008.

VoIP

Many organizations are turning to Voice over Internet Protocol (VoIP) as a way to cut costs, boost productivity, and increase their competitive advantage. In fact, more than 70% of organizations now use VoIP in some capacity.

New applications

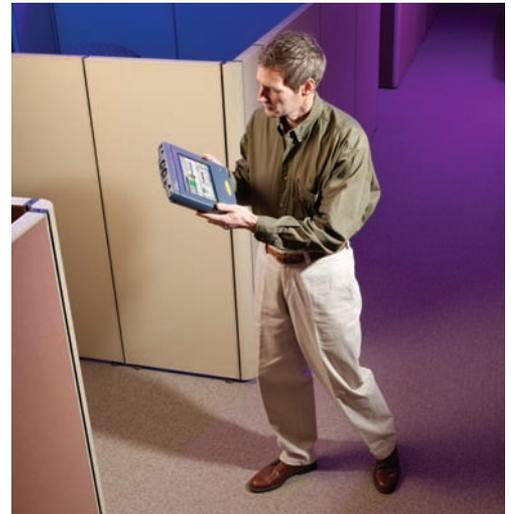
According to predictions put forward by Forrester Research, enterprise application spending will increase by 10% in 2007. In addition, the research firm reports 18% of enterprises plan major ERP upgrades, and 16% plan major upgrades to customer service and support software.

Scenario 1: Deploying and maintaining a wireless network

To meet user demand for Wi-Fi, a large consulting firm decides to implement a wireless network. During the planning phase, the network engineers use a portable analyzer to make sure the wired network has enough drops available to support the new access points, and enough additional IP addresses available for wireless users. The engineers also investigate what sort of throughput is expected and if they can get by with 802.11b. Then, the team conducts a site survey and spectrum analysis to explore factors that affect wireless signal quality, such as building construction RF interference.

After installation, the engineers use the portable analyzer to verify that initial design criteria were met, and to create baseline documentation so they'll know exactly how the wireless network is performing when initially deployed. If in the future users complain of a slow network, engineers can use the tool to investigate intermittent connectivity, login and authentication problems. Because wireless networks ironically still require a lot of wires, it's important to have an analyzer capable of isolating problems on both the wired and wireless side of the network. A portable analyzer lets an engineer drill down into the devices to see configuration details in order to troubleshoot WLAN connectivity, authentication and performance issues.

Walking the campus with the portable analyzer, a network engineer can detect, identify and locate unauthorized rogue devices and unprotected access points.



Scenario 2: Deploying and maintaining VoIP across the enterprise

A financial services company plans to deploy VoIP across the enterprise as a means of cutting costs. However, in order to ensure the new technology will meet users' expectations for quality and performance, and because the company plans rapid growth in the next five years, it's imperative that the IT department verify – before deployment – that the infrastructure can support VoIP. In addition, the team must investigate possible factors that can impair the quality of a VoIP call, including jitter, delay and packet loss. Therefore all system elements are thoroughly examined prior to deployment to ensure the infrastructure devices are not introducing unacceptable latency or dropping packets, and that they have sufficient bandwidth to handle the increased traffic from the VoIP calls.

Using a portable analyzer capable of both monitoring infrastructure device performance and adding traffic to the network, an engineer easily verifies that the network is capable of supporting VoIP deployment with the existing infrastructure and traffic levels. To manage the VoIP system after deployment through ongoing monitoring and troubleshooting using the same portable analyzer, the network engineer captures VoIP traffic, then analyzes the call quality. She can also generate performance reports on delay, jitter and packet loss.

Scenario 3: Deploying a new CRM application

A national retailer decides to implement a new CRM system to improve communications with their stores, partners and vendors. After months of research, the company purchases the CRM system from a highly regarded software company. Before deploying the application, the IT team brings it into their lab and uses a portable analyzer to capture and analyze the application's traffic patterns and usage. Then, using the analyzer's network discovery tool, the engineers assess the existing network to gain an understanding of the current environment. Using the traffic monitoring feature, they analyze the traffic patterns that currently exist on the LAN/WAN and come up with a migration plan to install the new CRM software.

During the install phase, the network discovery feature is used to ensure that the new application has been correctly rolled out to all locations, and to validate that the old software is no longer being used. During the verification phase, an SNMP test and a traffic analysis test are used to verify the bandwidth usage and latency of the application do not exceed the design parameters developed in the design phase.

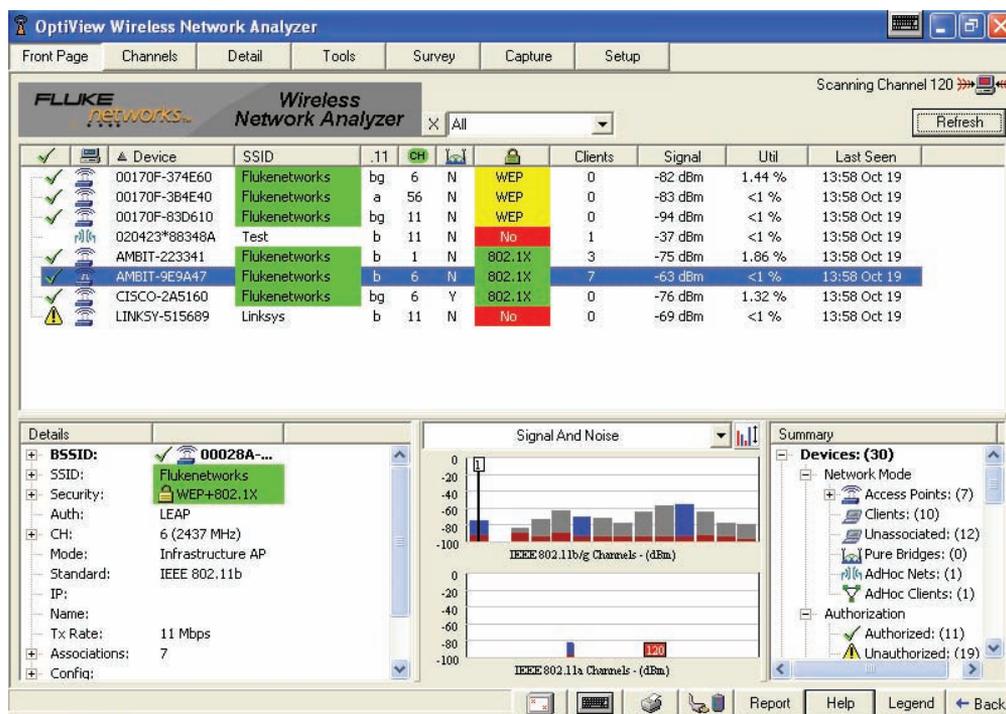
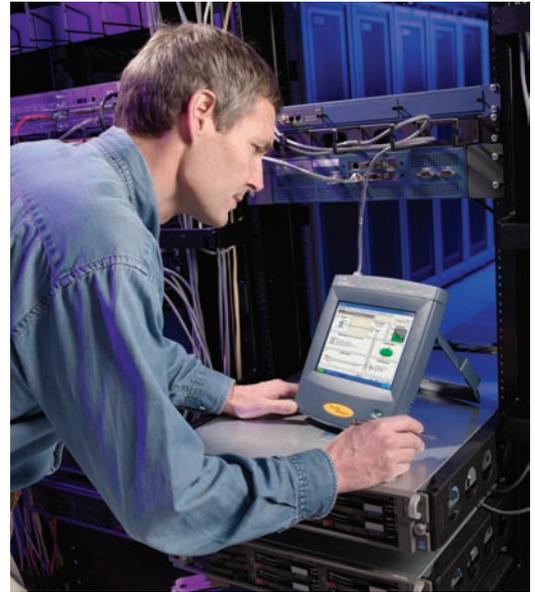
Introducing the OptiView Series III Integrated Network Analyzer

The OptiView Series III Integrated Network Analyzer from Fluke Networks is a portable network analyzer that can be used for verifying, testing and troubleshooting, whether an organization is implementing Wi-Fi, VoIP or a new software rollout. It's also a portable handheld tool that can go anywhere to isolate a problem, test for access points, or verify performance.

The OptiView Series III analyzer offers all-in-one capability to conduct detailed analysis and troubleshooting. It integrates the results of multiple advanced network tests into one information-laden front page – including data from the devices already on the network with SNMP analysis, a unique capability for a portable analyzer. The OptiView analyzer also combines 10/100/Gigabit copper, Gigabit fiber, 802.11 a/b/g WLAN and spectrum analysis in one solution. In addition, it's the only integrated analyzer that combines network discovery, traffic analysis, infrastructure analysis, advanced packet capture/decode, and WAN, WLAN and VoIP capabilities – in one portable tool.

The OptiView Series III Integrated Network Analyzer includes the following capabilities:

- Discovery
- Mapping/documentation
- SNMP polling
- Wire speed, hardware packet capture
- Protocol analyzer
- Traffic monitoring
- Host management utilities (telnet/ssh)

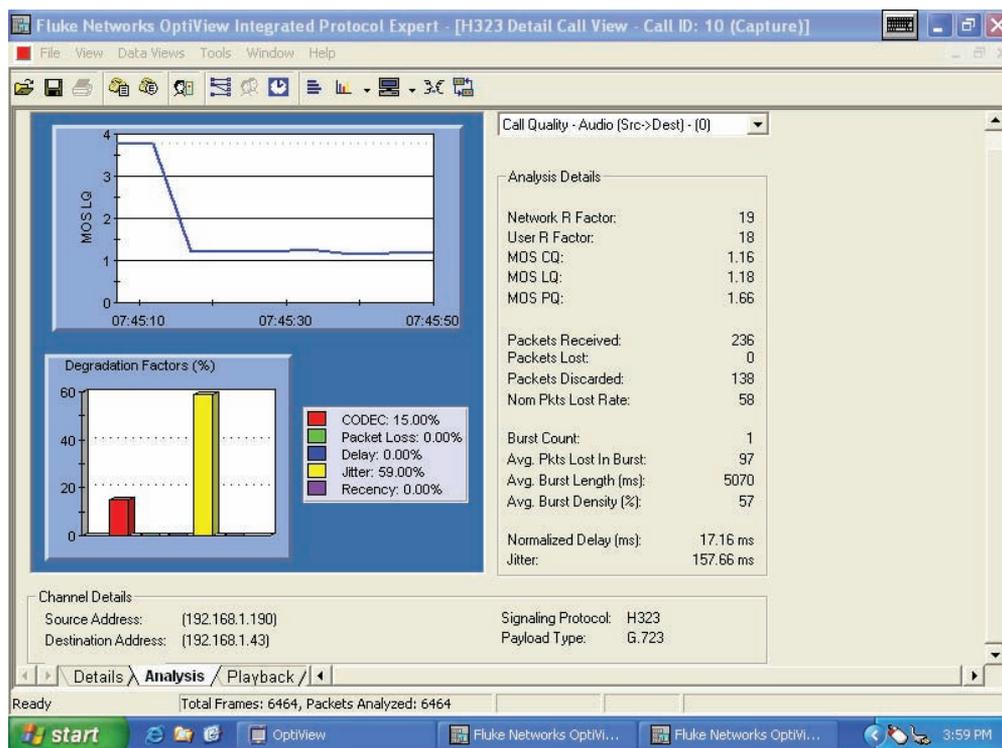


Wireless Discovery

Using the OptiView Series III analyzer with a wireless network

The OptiView Series III Integrated Network Analyzer analyzes both Gigabit wired and a/b/g wireless networks so network engineers can identify problems on both sides of an access point. The analyzer can discover active networks, mobile clients and access points, and enables engineers to drill down into devices to see configuration details. Because it's portable, it can be physically carried while walking the business campus both for troubleshooting and for continued maintenance and security monitoring. Two applications that are part of the OptiView Series III capabilities are useful for deploying and maintaining wireless networks:

- The InterpretAir™ WLAN Site Survey software provides network professionals with the vision they need to plan, deploy, verify and document 802.11a/b/g WLAN networks. A visualization of RF health metrics greatly simplifies WLAN environment analysis and enables performance tuning while allowing an engineer to discover where and why WLAN network performance is sub-optimal. Armed with that knowledge, a network professional can proactively address problems that could affect mobile application performance.
- The AnalyzeAir™ Wi-Fi Spectrum Analyzer provides a means of seeing the spectrum in a visible and intelligible format. AnalyzeAir lets you see, monitor, analyze, detect and locate all the RF interference sources and wireless devices that influence your Wi-Fi network's performance and security, even if those devices are unauthorized or transient.



VoIP Call Quality

Using the OptiView Series III analyzer when implementing VoIP

Factors that can impair the quality of a VoIP call include jitter, delay and packet loss. The OptiView analyzer lets network professionals measure these values and pinpoint the source of a problem. The tool also enables engineers to obtain a broad range of critical measurements and view post capture from the trace file, where the OptiView analyzer provides extensive detail about the network and call characteristics that determine the quality of service. In addition, the OptiView Series III analyzer's network, application and VoIP-specific analytics allow network professionals to clearly see how data traffic is affecting call quality, and how VoIP traffic is affecting data quality. This is a significant advantage over products that look only at voice.

The OptiView Series III VoIP Option recognizes and decodes all major VoIP protocols:

- The H.323 suite of protocols specified by the ITU including Q.931, RAS, H.245 and T.120
- Session initiation protocol (SIP)
- Skinny client control protocol (SCCP)
- Media gateway control protocol (MGCP)

It also recognizes and decodes all major CODEC protocols used for VoIP.

Verifying and testing new applications with the OptiView Series III analyzer

When deploying a new application, the network professional's chief concern is application response time, because user satisfaction and productivity is affected by poor performance. The organization must have the bandwidth prior to the deployment in order to get the expected results. This is particularly true when an application that's deployed enterprise-wide will be extended to remote sites: IT must make sure the WAN bandwidth is sufficient. Using the OptiView Series III analyzer, network professionals can make sure the infrastructure is capable, monitor current traffic levels, ensure infrastructure devices are performing correctly, and generate additional traffic to see the effect...even before the application goes live. After installing new software, network professionals can use the OptiView analyzer to verify that the application is performing as expected, that links are not over subscribed, and there is minimal latency.

Summary

As technology changes and performance expectations remain high, IT departments must keep their networks current but consistent. Whether the change is Wi-Fi, VoIP or a new enterprise application, the key to successful deployment is proactively testing, verifying and troubleshooting. The OptiView Series III analyzer enables network professionals to conduct the tests required to implement with minimal disruption and continue to deliver a high level of service.

The business case for a portable, integrated network analyzer

The OptiView Series III Integrated Network Analyzer helps network professionals manage IT projects, solve network problems and support IT initiatives, resulting in reduced IT costs and improved user satisfaction. It gives you a clear view of your entire enterprise – providing visibility into every piece of hardware, every application, and every connection on your network. No other portable tool offers this much vision and all-in-one capability to help you:

- Deploy new technologies and applications
- Manage and validate infrastructure changes
- Solve network and application performance issues
- Secure the network from internal threats

It shows you where your network stands today and helps you accurately assess its readiness for the changes you need to make now and in the future. Leverage the power of OptiView to give you vision and control of your network – go to www.flukenetworks.com/seeoptiview for more information.

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