Key Statistics

Virtualization
- 75% of respondents have implemented virtualization
- 75% lacked adequate tools, visibility, or information to troubleshoot problems

Economic Impact
- 73% were being asked to do more with fewer resources
- 65% of IT staffs had not experienced layoffs

Performance Troubleshooting
- 80% cited identifying the problem source as their primary troubleshooting concern
- 40% identified ensuring application performance as their biggest challenge

Unified Communications
- 60% will have implemented video by 2010
- 57% will have implemented unified messaging systems by 2010

With the economy impacting every facet of society, it wasn't surprising that the network is not immune from its effect. The need to reduce costs not only means IT staffs are managing leaner and meaner networks, it also generated higher than expected adoption rates for technologies like virtualization and unified communications. In querying nearly 450 network professionals, it was clear that cost savings will be the primary driver for technology adoption over the next two years.
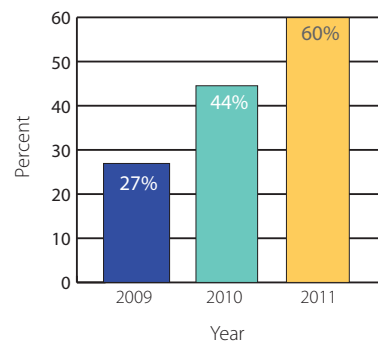
Virtualization

With the extensive coverage from the press and conversations within the data center about virtualization, the State of the Network Global Study 2009 sought to quantify adoption rates and challenges of virtualization.
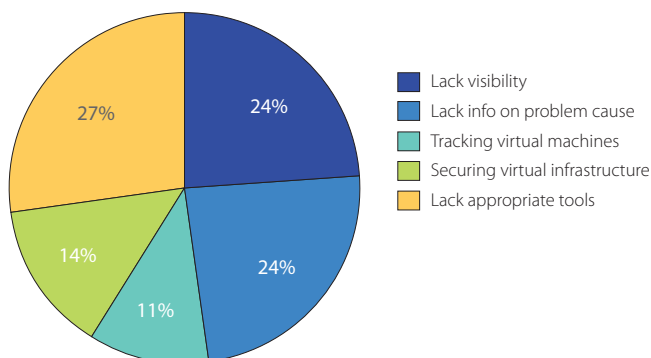
According to respondents, three-quarters have already implemented virtualization within their environments. As shown in the graph titled **Percent of Applications on Virtual Machines**, most of these deployments currently involve a minimal number of applications. This will quickly shift over the next two years, after which time the majority of companies will run over 50% of applications on virtual machines.

Looking at the biggest challenges engineers face in troubleshooting virtualization, most respondents expressed concern over the lack of appropriate monitoring tools or visibility in virtualized environments. The lack of tools and information shown in the **Virtual Troubleshooting Concerns** graph, coupled with the expected increase in virtualization adoption, may create greater visibility gaps for organizations.

Percent of Applications on Virtual Machines

Virtual Troubleshooting Concerns

- Lack visibility
- Lack info on problem cause
- Tracking virtual machines
- Securing virtual infrastructure
- Lack appropriate tools

A partial explanation of the visibility concerns expressed by engineers may be due to costs saving efforts, the chief driver of virtualization. 50 percent of respondent organizations deploying virtualization were driven by potential costs savings. As such, they may not be willing to spend the extra funds to ensure their IT teams can identify and troubleshoot problems within these new environments.
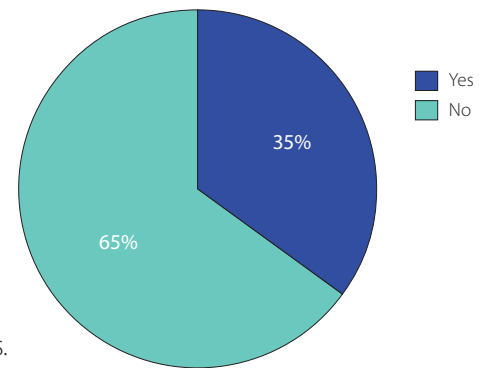
Economic Impact

With the impact of the global economy obvious in everything we do, the State of the Network wanted to quantify this impact on IT. While the economy is forcing IT budgets to tighten, the situation is not all the doom and gloom alluded to in the media. Rather, the majority of companies' IT staffs have not experienced layoffs.

Key Findings
- 75% of network staffs were asked to do more with fewer resources
- 65% could improve performance without major investments
- 60% were fully utilizing their IT budgets

Amidst the harsh economic climate, IT may be a bright spot. The majority of respondents, as indicated in the **Experiencing Layoffs** chart, said their IT departments had not or did not expect to experience layoffs.

Experiencing Layoffs
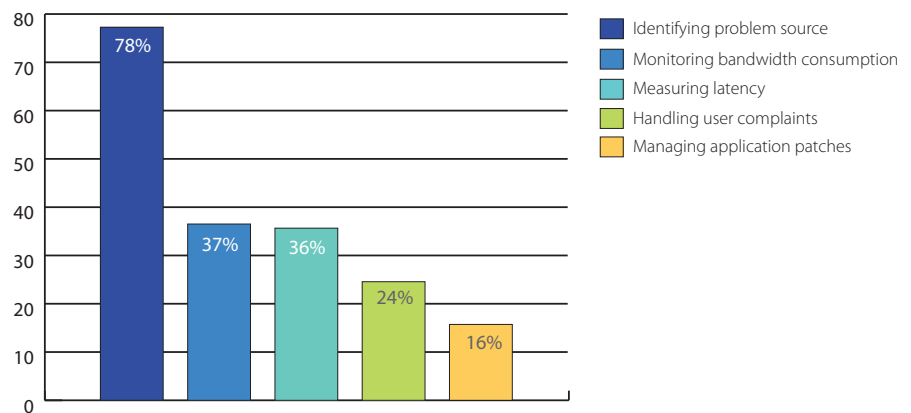

- Yes
- No

35%
65%

Performance Troubleshooting

With greater reliance on the network for critical business processes, network managers have become increasingly responsible for managing applications. When asked to identify their biggest network concern, 37 percent of network managers identified ensuring application delivery and performance as their biggest challenge. The shift of duties from the network to application management was further demonstrated with over half of respondents citing applications as the primary source of performance problems.
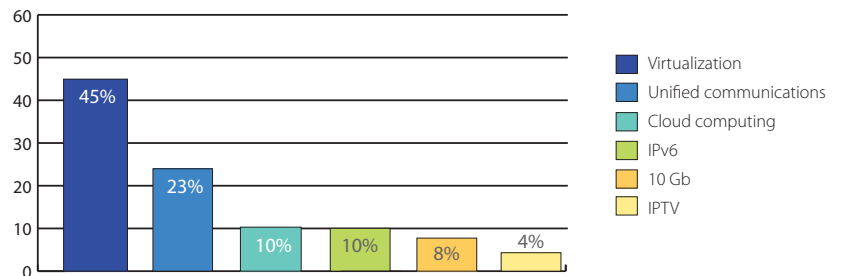
The most striking results were found in asking respondents about the most common problem they face troubleshooting application performance. Over three-quarters of respondents indicated identifying the problem source as their primary troubleshooting concern. The second most common issue, as shown in the **Primary Troubleshooting Problems** graph, was monitoring bandwidth consumption, closely followed by measuring latency and delay.

Further exploring performance troubleshooting, the study identified which of emerging applications and technologies represented the greatest monitoring challenges for network teams. It shouldn't be surprising that a near majority of respondents indicated virtualization to be the most difficult technology to troubleshoot, followed by unified communications, cloud computing, and IPv6.

Primary Troubleshooting Problems

- Identifying problem source
- Monitoring bandwidth consumption
- Measuring latency
- Handling user complaints
- Managing application patches

78% 37% 36% 24% 16%

Greatest Emerging Technology Challenge

- Virtualization
- Unified communications
- Cloud computing
- IPv6
- 10 Gb
- IPTV

45% 23% 10% 10% 8% 4%

Unified Communications

Over the last three years, the State of the Network Study has looked at VoIP adoption rates and challenges. The State of the Network Study 2009 has been broadened to provide a comprehensive look at overall adoption of unified communications.

Unified Communications Adoption

UC Technology	Already Installed	Install in 12 months	Not Installed
Video	27%	33%	40%
VoIP	45%	33%	22%
Teleconferencing	34%	32%	34%
Unified Messaging	27%	30%	43%
Other	9%	22%	69%

Viewing the **Unified Communications Adoption** table, the study observed a strong uptick in unified communications adoption. While further strong adoption of VoIP would be expected given past trends, we were surprised to see such strong future adoption trends in newer technologies like unified messaging. Although the study did not ask why organizations are adopting unified communication technologies, given tightened business budgets companies may be cutting travel costs in favor of collaboration applications.
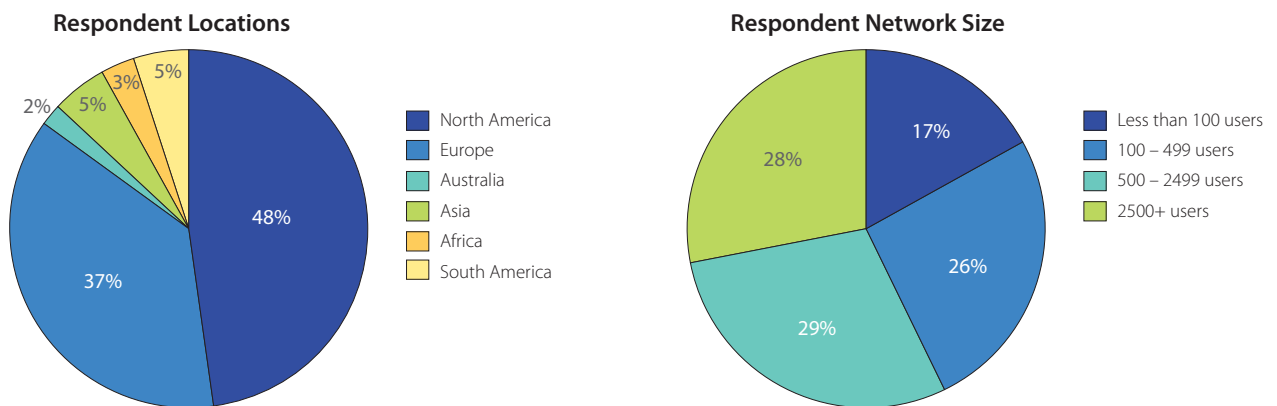
In comparing the results of the 2009 Global Study with two years prior, two trends emerged.

1. VoIP adoption continues to rise. 75% of companies will have installed VoIP by year's end compared to 61% in 2007.
2. The number of companies monitoring VoIP quality of service has also risen to 40% in 2009 compared to 30% in 2007.

Research Background

2009 marks the third year Network Instruments measured the attitudes and concerns of network professionals through the State of the Network Global Study. The 2009 study evaluates the impact of the economy on network management, determines adoption rates of new technologies, and identifies challenges of monitoring virtualization. Participants answered 20 questions on subjects ranging from managing application performance to difficulties faced in virtualization and unified communications adoption.

The results were compiled from the insights of 442 network engineers, IT directors, and CIOs in North America, Asia, Europe, Africa, and South America. In addition to being geographically diverse, the population was evenly distributed among different sized networks. Responses were collected from March 19 — April 3, 2009, through network technology seminars, interviews, and online surveys.

Respondent Locations

North America 48%
Europe 37%
Australia 2%
Asia 5%
Africa 3%
South America 5%

Respondent Network Size

Less than 100 users 17%
100 – 499 users 26%
500 – 2499 users 29%
2500+ users 28%

About Network Instruments

Network Instruments, a leading provider of innovative analysis solutions, helps organizations and enterprises ensure the delivery of business-critical applications on their networks. The company's monitoring and reporting products provide comprehensive visibility into networks and applications to optimize network performance, speed troubleshooting, and assist long-term capacity planning. Network Instruments solutions provide integrated enterprise-wide reporting and back-in-time investigation capabilities for troubleshooting networks. The company is headquartered in Minneapolis with sales offices worldwide and distributors in over 50 countries. For more information about the company, products, and technology, please visit www.networkinstruments.com.

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