



“State of VoIP”
Based on a survey of ‘network heroes’
September 2009

Apparent Networks recently surveyed network managers to learn more about their VoIP deployments and the issues they face. This white paper is a summary of the findings from that survey.

Apparent Networks is especially interested in these findings. The company’s PathView network management tool provides a streamlined, yet powerful way for IT teams to evaluate the performance of their networks for data, voice and video applications. Information about PathView, as well as a free trial download, is available at <http://www.apparenttools.com>.

General Demographics

Invitations to participate in the Apparent Networks survey were sent to thousands of networking professionals across a variety of industries. Respondents all indicated they all had embarked upon VoIP deployments in their organization.

Survey Findings

First, while most respondents performed a pre-network assessment prior to rolling out VoIP (82%), a small minority (14%) did not. The rest did not know whether or not an assessment was done. This paper deals with the interesting differences between those who did and those who did not perform network assessments prior to their VoIP deployments.

- 4.3% of those who performed an assessment prior to deployment reported coming in over budget by 11-25% while 25% of those who did not perform an assessment came in over budget by 11-25%.

Some companies believe that they can save time and money by not performing a pre-deployment network assessment. But survey results clearly show that understanding network performance and characteristics in advance can actually save money during VoIP deployments. By knowing how a network will perform with the additional VoIP load, companies can find and fix problems before VoIP is deployed. This insight also enables companies to understand whether a network upgrade (or the installation of a new or separate network) will be required to support VoIP.

PathView network performance management is a tool that is capable of pre-assessing network readiness for VoIP applications. The tool can be set up to perform a one-time assessment or monitor performance characteristics continuously over time to 1) identify whether a network is

capable of handling the additional load from VoIP calls, and 2) pinpoint the source of likely problems and provide remediation information prior to rollout.

- 18% of those who performed a network assessment prior to VoIP rollout use a separate WAN for VoIP versus 33% for those who did not do an assessment.

In addition to finding and fixing problems prior to rollout, performing a pre-deployment assessment can help companies determine whether their existing network can support VoIP or whether a network upgrade is in order. Those who did not perform an assessment were approximately twice as likely to add a separate WAN for VoIP, contributing to the budget overages mentioned in the first result above.

- More than three times as many people (50% vs. 13%) reported that their VoIP deployment impacts other applications on their network when a pre-deployment assessment had not been performed compared to when one had been performed.

VoIP can have a large impact on the performance of a network. Because it uses a lot of bandwidth and can be 'bursty' at different times of day due to call patterns, other applications that also make use of network resources can be affected. With some applications such as email, the introduction of latency due to congestion from more bandwidth usage during VoIP calls will have minimal impact from the end user's perspective. However, other applications, such as financial trading applications, reservation systems, and IP video will noticeably degrade the end user's quality of experience. It is important to identify and understand the impact VoIP will have on the network prior to deploying it and also when any change is made that can affect the network (like adding new applications or infrastructure).

- A large number of users face issues with stuttering audio on calls (44%). Relative to those who did a pre-deployment network assessment, those who did not were nearly two times more likely to report stuttering audio problems.

Once again, the advantages of performing a pre-network assessment prior to rolling out VoIP are clear. Those who did so were less likely to report ongoing problems with their deployments such as stuttering audio or saturated circuits. A pre-network assessment can help identify problems before implementation so they can be addressed before users are impacted.

Additionally, once VoIP systems have been rolled out and are operational, it is important to continuously monitor VoIP call quality so that administrators can find problems before users are impacted. However,

- More than half (56%) of respondents are not proactively notified if voice quality degrades.

If VoIP or network managers are not notified when voice quality degrades below acceptable thresholds, users are the front line for finding problems. Ideally, network managers should be aware when voice quality begins to degrade so that they can locate and resolve the issue before it impacts users.

PathView allows network managers to set performance thresholds based on characteristics such as jitter, latency, packet loss and MOS scores, among others. When these thresholds are violated, network managers automatically receive notification that performance degradation has occurred. Additionally, PathView can automatically perform tests to determine the root cause of the degradation. With information on the degradation type and its root cause and location, network managers can quickly isolate and fix the problem. PathView does this along the complete end-to-end network path, even through third-party networks such as carriers or ISPs.

- More than half of all respondents plan to add instant messaging, email or video in addition to VoIP as part of a larger unified communications plan.

Given the additional load these applications will place on the network, it is critical that network managers understand the impact of these applications prior to rolling them out, during the implementation stage and ongoing after deployment. Apparent Networks' PathView solution takes a holistic view of VoIP performance throughout the VoIP deployment lifecycle and can help with many of the issues identified in this survey.

Unlike traditional network management tools, PathView takes a true, end-to-end view of network performance. It provides complete, unbroken visibility of every hop along a path from the source of the application traffic to its destination, even through segments that pass through service provider and carrier networks. Without requiring probes or devices in these networks, the technology measures service level performance characteristics such as bandwidth, jitter, latency and MOS scores. PathView alerts users in real time when SLAs are being violated so that problems can be quickly resolved. Reports provide comprehensive information on MOS scores and SLA compliance. It is an ideal solution for assessing network readiness for new applications such as VoIP, troubleshooting problems that arise at every phase, monitoring ongoing operations and reporting on VoIP's impact on the business.

About Apparent Networks PathView

Apparent Networks recently introduced PathView, a revolutionary network management solution. PathView provides specific approaches to assess network performance, troubleshoot as to what parts of the network are causing problems, monitor internal and external networks that affect the performance of next-generation applications, and report on this performance.

PathView is based on Apparent Networks technology that has been deployed to numerous enterprises and application service providers. It was built to provide this technology in an easily digestible way that is easy to deploy.

For a free trial of PathView, visit <http://www.apparenttools.com/>.

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