

SPECIFICATIONS

Network Assessment

BENEFITS

- Insure necessary protocols and standards are supported
- Confirm that the infrastructure is optimally configured for IP telephony traffic
- Verify that the installed WAN technologies are compatible with IP telephony
- Validate that the network has the capacity to support the planned installation
- Measure delay, packet loss and jitter to insure they meet acceptable thresholds for toll-quality voice

Overview

By testing your data network's ability to successfully support IP telephony traffic and discovering potential performance problems before your system is installed, ShoreTel's Network Assessment helps you plan, design and implement a successful IP telephony solution. The assessment can be administered by your ShoreTel solutions partner or by a ShoreTel engineer. Regardless of the source, an assessment is required prior to installing a new ShoreTel IP telephony system across multiple sites.

Simulate the voice experience

The assessment uses active application traffic to monitor the live network in order to reveal what's going to happen when IP telephony is introduced into the mix. Test agents send a variety of network traffic packets – using different application protocols, packet size, packet spacing and QoS levels. The tests simulate the various types of IP telephony traffic that are likely to occur on a live network. In addition to measuring peer-to-peer traffic, the agents can also generate realtime client transactions against production servers, including communication with IP PBX servers. This comprehensive approach enables the test engineer to pin point the source of potential problems and make recommendations for resolution before the system is installed.

Expand your view

A ShoreTel Network Assessment is different from the "snapshots" that are often used to keep tabs on data networks. A snapshot captures conditions at a single moment in time. The ShoreTel Network Assessment monitors both Local Area Network (LAN) and Wide Area Network (WAN) links over a number of days rather than hours. In addition to revealing conditions that could degrade IP telephony performance, the longer assessment helps to identify the source of intermittent problems. WAN monitoring is

important because WAN connections are often the source of latency, jitter, and packet loss issues. The WAN test results also help in establishing the appropriate service levels with the WAN service provider.

Gain an end-user perspective

By performing a pre-deployment network assessment, organizations gain an end-user perspective on the new technology by evaluating voice quality, as experienced by the listener. Voice quality is reported in the form of a mean opinion score (MOS), a five-point industry standard scale in which one represents the poorest voice quality and five represents perfect voice quality.

Benefit from specialized expertise

Problems that impact toll-quality voice have many sources including network congestion, geographic distance, configuration, queuing methods used in routers and switches, or routing options used by carriers, such as MPLS or frame relay. Based on a wealth of experience with IP telephony, the test engineer interprets the test results to anticipate dependencies and identify any potential problems. A full report is provided with specific recommendations to maximize the data network's ability to successfully carry voice traffic.

Deploy and enjoy

The time to perform a ShoreTel Network Assessment is before the ShoreTel system is deployed. That way there are no surprises post-implementation that can lead to unbudgeted expenses or disappointing performance.

How to order

For more information about the ShoreTel Network Assessment, or to place an order, contact your ShoreTel solutions partner or the ShoreTel Implementation Services team at iservices@shoretel.com.

Specifications

Network requirements

- The network cabling must meet the minimum CAT 5 specifications for 100Mbps ethernet connections.
- The network should have sufficient bandwidth to handle increased traffic due to voice packets introduced to the live network during testing.
- Quality of Service (QoS) should be implemented across all WAN connections prior to the assessment.
- Firewalls must allow TCP traffic on port 4445 and UDP port 5004.
- The monitored topology should be free of wireless links.

Test process

- The test engineer calls the customer to explain the test process and answer questions.
- The customer is asked to provide network and call volume details that are used to determine the setup and configuration of the test environment.
- The customer designates a computer at each tested location that will remain on throughout the testing. The computers must have a minimum amount of CPU utilization, be running either a Win2K or Win XP operating system, and have standard http browsers. Alternatively, ShoreTel can load an agent and run it in the background on a lightly used computer
- The test engineer provides a link to the installation package so that the customer can load the test agent software on the designated computers.
- The test engineer configures the agents to point to the ShoreTel test center or its proxy and configures the test server to initiate conversations between sites.
- A preliminary test, lasting a couple of hours, determines the maximum number of recommended calls per WAN link, based on the bandwidth and codec used.
- The comprehensive test, lasting up to a week, measures the network's ability to sustain IP

telephony traffic over the course of normal business activities, including peak traffic hours.

- The test results and recommendations are sent to the customer in a full report that identifies potential bottlenecks, identifies the source of degraded network performance and designates whether the problems are network or application based.
- At the customer's option, the engineer is available to participate in a conference call to discuss the test results and answer any questions.

Figure 1: This chart illustrates the average quality of calls during each hour of the evaluation.

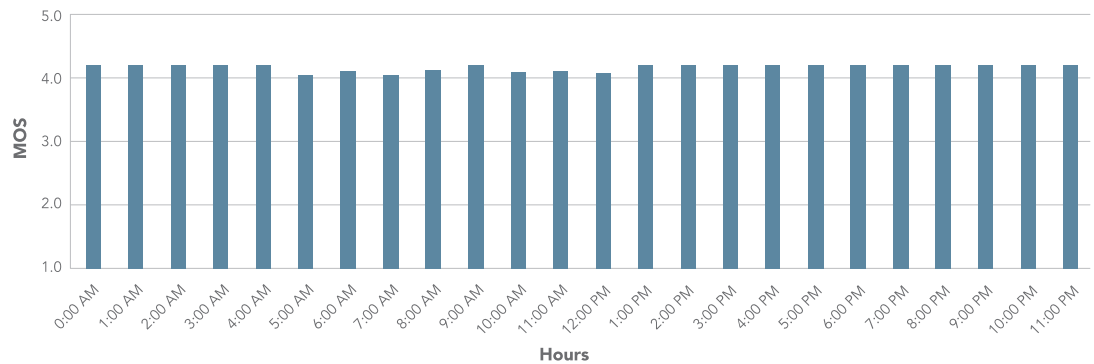
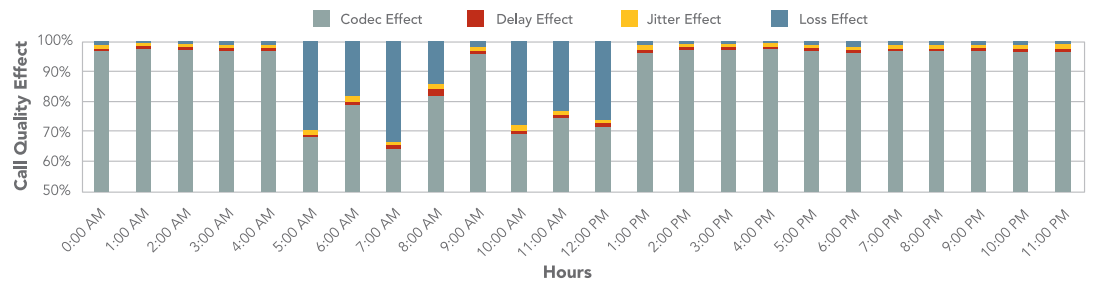


Figure 2: This chart illustrates the relative effects of the codec, delay, jitter and overall loss impairments on the call quality during each hour of the evaluation.



ABOUT SHORETEL

ShoreTel is the provider of brilliantly simple Unified Communication (UC) solutions based on its award-winning IP business phone system. We offer organizations of all sizes integrated, voice, video, data, and mobile communications on an open, distributed IP architecture that helps significantly reduce the complexity and costs typically associated with other solutions. The feature-rich ShoreTel UC system offers the lowest total cost of ownership (TCO) and the highest customer satisfaction in the industry, in part because it is easy to deploy, manage, scale and use. Increasingly, companies around the world are finding a competitive edge by replacing business-as-usual with new thinking, and choosing ShoreTel to handle their integrated business communication. ShoreTel is based in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com.

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