



for the Enterprise

Evaluating & Testing Voice & Video-Over IP
Enterprise Networks

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About This Document

This document describes the challenges of deploying and maintaining enterprise voice and video over IP networks that deliver quality services and a satisfactory communication experience for users. It continues in describing how the [ProLab Testing Solution](#) can be used to evaluate whether a network is ready for voice and video communications.

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Introduction

For voice & video service providers and enterprises, the ability to deliver satisfactory quality to end users is of critical importance. A high level of quality must be maintained in order to effectively manage network resources and ensure customer satisfaction.

Quality is determined by the customer's perception, and is therefore difficult to judge by analyzing network statistics alone. Maintaining the necessary quality presents formidable challenges, as video and audio quality can deteriorate for wide variety of reasons, and result in poor or distorted images, unclear audio, PL, delay and jitter.

When preparing a network for real-time voice and video over IP, network managers must assess whether the network can provide and maintain the quality of service (QoS) their customers expect. This means that informed decisions must be made regarding which network devices to deploy, the amount of bandwidth needed and the optimal network configuration required to support VoIP and video-over-IP technologies.

Criteria such as delay, PL, duplicate packets, packet ordering and corrupted-packet data are some of the criteria that can help detect problems in VoIP and video-over-IP networks. For example, delay data can help identify whether a slowdown was caused by a transit problem or by an overloaded server or gatekeeper.

A proactive approach is needed to ensure network readiness before deploying network audio and video services. Deploying these services is a costly undertaking, both in terms of time and money. Assessing the readiness and state of your network before such deployments is critical, as the success of these services is dependent on the ability of the network to support them.

Factors to Consider for Voice and Video-Over-IP

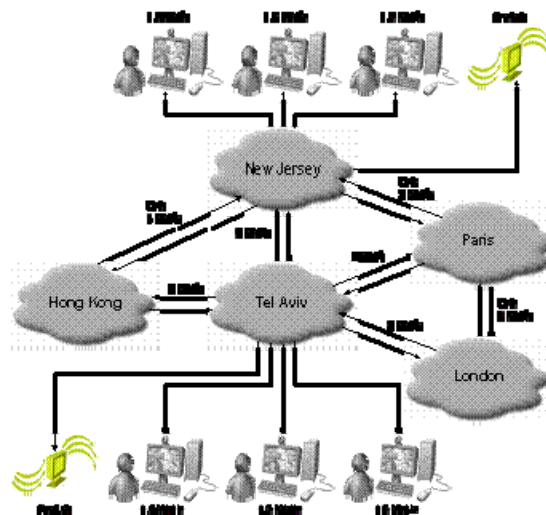
Many issues must be addressed when considering real-time voice and video deployment over IP networks:

Devices & Applications

- Are the devices compatible?
- Does everyone hear clearly or is the voice distorted?
- Does everyone see a clear image?
- Are the voice and video devices and applications able to interact with one another?

Remote Dispersed Sites

- How good is the quality between remote locations?
- Is the amount of bandwidth received in accordance with the terms of the Service Level Agreement (SLA)?
- What happens when there is a bandwidth overload?



Network Resources and Bandwidth

- What is the effect of VoIP on other applications running on the network?
- How will priorities be determined in order to provide everyone with satisfactory services?
- How much packet loss will occur if everyone in the organization calls at the same time?

Audio & Video Codecs

- Will one codec adversely affect the quality of other codecs?
- What are the best codecs to use for this network?
- Which codecs should be avoided?

Voice and Video-over-IP Component Compatibility & Interoperability

- Can all the components work together?
- Can server components support stress and load testing?
- Is it possible to test whether the system is fully integrated from the VoIP perspective?

The Challenges of Preparing a Network for Voice and Video-over-IP

RADVISION's [ProLab Testing Suite](#), based on the award-winning RADVISION Protocol Toolkits and numerous years of expertise in VoIP, is an ideal solution for enterprises is an ideal solution, addressing these and many more issues. The ProLab solutions can emulate a wide range of real-world network conditions to test network readiness in rich media-collaborative networks, and test the readiness of voice and video over IP networks. These include terminal emulation, media and quality analysis, automation, test results, analysis and reporting, including alarm notifications in order to indicate system faults in real-time.

Such tools can be used in various stages of pre- and post-deployment. Ideally, voice and video network-readiness testing should be performed before the entire system is deployed. In addition, ongoing testing is also mandatory for system monitoring after VoIP networks are up and running.

New special add-ons for the enterprise include the ProLab Advanced Report Builder. This offers both a broad overview of test results, with a summary report and graphs, while also allowing a pinpointed drilldown for each test at all times. This enables an in-depth analysis of behavior and other network issues.



Conclusion

Deploying and maintaining a successful enterprise voice and video over IP network requires delivery of quality services and a satisfactory communication experience for users. Before deploying a voice or video over IP network, it is necessary to evaluate whether the network is ready for voice and video communications. For this evaluation, an informed decision needs to be made about resources, equipment and policies. Once the voice or video over IP network is deployed, the network needs to be constantly tested and monitored for possible problems that may impact the quality of the voice or video.

The RADVISION [ProLab Testing Solution](#) is an ideal tool for enterprises to carry out these tasks. It enables setup and execution of comprehensive automated test procedures for VoIP. With its rich features, customizable scripts and scenario and canned media, network administrators can emulate networks and devices to suit their specific environments, and collect the data needed for evaluating whether networks are ready for real-time voice and video over IP.