



**The VoIP Deployment Challenge**

Before you know how much a VoIP deployment will cost and how successful it will be, you need to understand if your data network can carry high-quality voice transmissions. The odds are that a network upgrade will be needed to successfully deploy VoIP.

Consider the facts: "85% of today's router-based data networks are not ready for successful voice deployment." - Gartner Group

Your data network was originally designed to support emails, file transfers and deliver Web pages, not carry high quality voice transmissions. Voice traffic is very time sensitive and can't be queued like email or Web traffic. Delays up to a half hour for an email or file transfer are generally not a problem, but delays of only a few hundred milliseconds can ruin a VoIP call, producing choppy conversations or dropped calls.

To ensure your VoIP deployment is successful and on budget, you need to find answers to these important questions before deploying VoIP:

- > What type of VoIP MOS (Mean Opinion Score) call quality can I expect from my current data network for each business site?
- > Is network delay, loss or jitter the main problem impacting VoIP call quality, and how do I fix it?
- > How many concurrent VoIP calls can my network carry without impacting existing data services?

Knowing this information before deploying VoIP will ensure your success, but what is the most accurate and cost effective method to obtain it?

**The VoIP Deployment Solution**

The fastest and most cost effective way to determine your network's VoIP readiness is to conduct a Toshiba VoIP Network Assessment.

The assessment quickly diagnoses the majority of your network issues so that by the time you begin your VoIP deployment, you have a converged network that will carry high-quality voice transmissions.

Organizations that skip this important deployment step experience poor call quality, dissatisfied users, upgrade cost overruns and delayed deployments.

Compare in Figure 1 the typical outcome of VoIP deployments that include a VoIP Assessment vs. ones that skip this important step:

	<b>w/o Toshiba Assessment</b>	<b>with Toshiba Assessment</b>
<b>Success Rate:</b>	Less than 50%	Greater than 95%
<b>Deployment Costs:</b>	High	Low
<b>Upgraded Costs:</b>	Estimated	Known exactly
<b>User Satisfaction:</b>	Low	High

*Figure 1 VoIP Deployment Comparison*

# TOSHIBA

## Leading Innovation >>>

### How Our VoIP Assessments Work

The goal of the Toshiba VoIP assessment is to determine how well VoIP will sound on your network and diagnose any technical issues that could negatively impact call quality.

Our unique VoIP assessment solution is very simple to conduct and separates us from our competition since it does not require onsite consultants to set up and run the assessment. We simply ask a site employee to download a small piece of software called a "traffic agent" onto one or two existing PCs or servers per site. Then the assessment is run remotely by our engineers without interrupting your operations.

The assessment determines call quality using traffic agents to send actual VoIP traffic across your network. It measures the resulting MOS call quality, network delay, jitter and loss for calls between any of your business sites.

Figure 2 illustrates a VoIP assessment testing the wide-area network (WAN) connections between the Los Angeles and New York offices and between the San Francisco and Denver offices. The assessment is measuring the WAN performance of 20 concurrent VoIP calls between Los Angeles and New York and 15 concurrent VoIP calls between San Francisco and Denver.

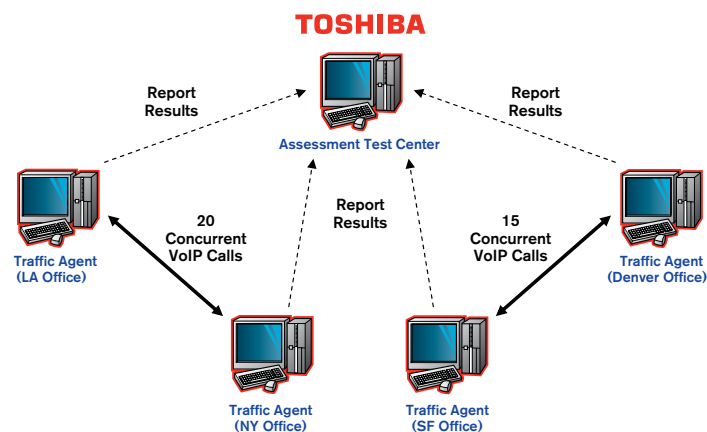


Figure 2 Typical Toshiba VoIP Assessment

The VoIP calls are run continuously for the duration of the assessment to measure call quality during different times of the day and week. At the end of each VoIP call, the results are reported back from the traffic agents to the test center and logged in a database. These results are used to create a detailed report summarizing the results of the VoIP assessment.

At the end of the assessment our clients know the exact state of their VoIP network readiness:

- > The MOS call quality score between all business sites
- > How many concurrent VoIP calls each WAN will support between sites
- > The amount of network delay, loss and jitter for each WAN and LAN connection and how to eliminate these problems

With this information determined before you deploy VoIP, your initial deployment will exceed user expectations and reduce your deployment risks and costs.

### Conclusion

Your network was not originally designed to carry high quality voice transmissions. To deploy VoIP successfully you need to conduct a VoIP network assessment first. If you skip this important step your probability of difficult network challenges is greater than fifty percent. Eliminate deployment risk, upgrade cost overruns and dissatisfied users by conducting a Toshiba VoIP network assessment. Your business will thank you for it.

### Toshiba America Information Systems, Inc., Telecommunication Systems Division

9740 Irvine Blvd., Irvine, CA 92618-1697 (949) 583-3700 [www.telecom.toshiba.com](http://www.telecom.toshiba.com)

© 2007-2008 Toshiba America Information Systems, Inc. All product, service and company names are trademarks, registered trademarks or service marks of their respective owners. Information including without limitation specifications, availability, content of services, and contact information is subject to change without notice.

Literature Order #: TSD-NetwAssmnt-VB/4500122