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McAfee Network Protection Solutions

Is VoIP Right for Your Medium-Sized Business?

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Abstract

You have implemented an extensive data network alongside your existing voice network. You hear that many large enterprises have integrated their voice and data networks by implementing Voice over IP (VoIP) or packet voice. But is VoIP a viable solution for you, the medium-sized business?

For the medium-sized company, moving from conventional telephony to VoIP has major business benefits. These include lower communication costs, increased user productivity, and easier management with lower cost and predictable growth.

While VoIP is just another data stream, it has very different characteristics than normal computer network traffic. Your networks may need new services and protocols. Is it possible to implement these on your existing network without degrading its performance for data?

This paper looks at the benefits of VoIP, industry issues, successful VoIP implementation, and tools that help you manage a converged voice and data network.

VoIP—What Are the Benefits?

VoIP is now a proven technology with over 70 percent of enterprise corporations and 40 percent of medium businesses looking at implementing some form of VoIP solution in the next few years.

According to Forrester Research, the reasons for such success and the benefits provided include:

- Decreased infrastructure costs of running a single network
- More efficient systems administration
- Lower and more predictable combined voice and data costs
- Increased user productivity
- Increased ability to leverage the corporate network to competitive advantage

A major increase in user productivity comes from the ability to rapidly implement and deploy new applications. The most important of these is unified messaging. A recent survey for Cisco Systems estimated that employees spend up to two and a half hours per day managing e-mail, faxes, voicemail, and phone calls. Each of these is presented through a different interface. Implementing a VoIP unified messaging solution gives the user access to all information through a single consistent interface, providing significant savings through lower cost and improved customer service.

VoIP Implementation Issues

The needs of voice and data networks are very different; each business needs to investigate and understand Quality of Service (QoS) and integration.

VoIP is a realtime protocol, while your data network is transaction oriented. QoS is an important factor in the successful implementation of VoIP. Low network latency (less than 100ms) and a predictable packet delivery mechanism are required to avoid jitter.

Within a data network, data packets may not be received in the order in which they were sent. This is because they may take different routes to get from source to destination with resultant different propagation delays. At the receiving end, the packets are assembled back into their right order, and then the whole transaction is completed. Voice is a continuous stream, so data packets must be received and presented in the order they are sent.

As a first step to implementing a VoIP solution, you should execute a QoS audit of your existing system and investigate the ability of your existing infrastructure to support both the additional traffic load and the protocols.

Implementing VoIP requires adding realtime capabilities to your existing network and may require you to install new devices dedicated to the VoIP structure. There are a number of new network protocols that will be implemented by VoIP. Routers and switches must be capable of understanding the new protocols separating the voice from the data traffic. You must understand your current data traffic patterns and what projects you have planned for the future that will affect them. It is important to make realistic estimates of the impact of VoIP on the volume of data traffic and network capacity. As you need to upgrade or replace network components, make sure they are compatible with VoIP networks.

Preparing for and Managing a Converged Voice and Data Network

The telephone is a mission critical item within the business arena. Just as users expect that the telephone will be available over 99.99 percent of the time, implementing VoIP means ensuring that your converged network meets this level of performance.

To maintain converged network performance and deliver on user expectations, you must develop a proactive monitoring and management solution for your network. You need to be informed of potential service degradations and act on them before they impact the user. To achieve this you need to:

- Implement a proactive error detection and correction rationale across the network
- Track QoS across the network
- Provide easy to understand realtime and historical network traffic characteristics
- Implement a consistent reporting structure for both performance and error reports

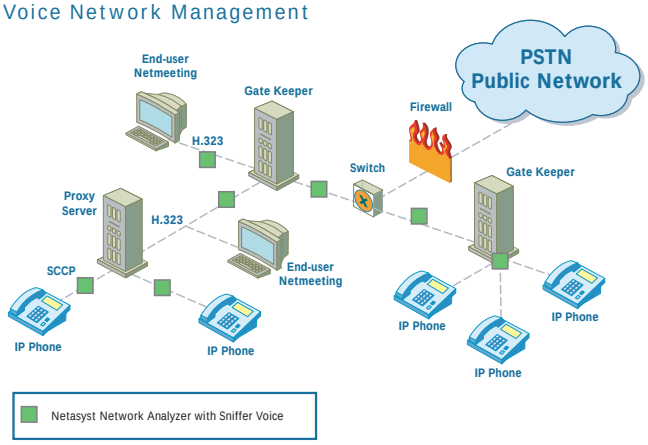
While the characteristics of the data streams between data and voice are different, the management of these differences can be minimized by the use of a common network analysis tool. Network Associates® Netasyst™ Network Analyzer Powered by Sniffer® Technologies with Expert and the Sniffer Voice add-on is just the right tool to help you refine and manage your converged voice and data network. The Expert capabilities within the Netasyst product allow you to monitor traffic, decode the different streams, and build an overall view of your network. The voice add-on is also an option with the Sniffer Portable product line, which is available for your more complex networks.

The Netasyst product with the Sniffer Voice add-on automatically detects and helps solve key problems on VoIP networks, including jitter, packet loss, packet sequencing, and latency. This capability, along with call tracking, call duration, command response time, call setup rate, high call rate, and other Netasyst product capabilities, helps ensure successful VoIP network management for quality voice communication while maintaining high-quality data communication.

A number of network design and operation factors affect QoS, including packet loss and delays, available bandwidth, WAN protocols, and the presence of echo. The Netasyst solution with the Sniffer Voice add-on arms the technician and VoIP network manager with the solutions they need to ensure QoS on their packet voice networks. This option helps provide the necessary insights into converged voice and data traffic. It adds many new decodes, specifically designed for detecting, monitoring, and managing voice data streams, to the base product.

During Expert analysis, the Netasyst product develops an understanding of the network from the traffic it sees. The Expert protocol interpreters learn about network stations, routing nodes, subnets, and connections related to the frames in the capture buffer. This information is presented concisely in the Expert display. Using the information it gathers about the network objects, the Expert Analyzer detects and alerts you to potential network problems, so that you can take steps to correct them before they affect user performance.

Voice Network Management



Summary

The needs of medium-sized businesses echo those of the large enterprise, but there is no room for experimentation and second chances if things don't work out. Networks are increasing in importance, and each business needs the right tools and information from a trusted source to make the right decisions.

VoIP can bring substantial savings in capital and operating costs by converging separate voice and data networks into a single multi-service network. It can act as the catalyst for new applications, like unified messaging and low-cost voice and video conferencing, extending the productivity and flexibility of employees while improving customer service.

Medium-sized businesses already have a large investment in infrastructure and are dependent on their data networks for the success of their business. Integrating voice and data must make sound financial sense, which can only be achieved by implementing VoIP on the existing network without disrupting the day-to-day running of the business. For some companies, the payback may happen within a few months; for others, the payback may take longer.

VoIP is not yet for everyone, but with new applications, like unified messaging and video conferencing, it is only a short time until it becomes necessary to explore the possibilities. It might be the right solution for you.

To help you understand the levels of investment, you can look at your existing network with Network Associates Netasyst Network Analyzer, which will give you insight into the current performance of your network. And when you implement a VoIP solution, Netasyst Network Analyzer with the Sniffer Voice add-on will help you keep it optimized by providing quality voice and data communications.

Whether your office size consists of 25 or 500 employees, Network Associates understands that your business is fully reliant on your network, and our commitment is to be a valuable ally to keep your middle-sized business network running smoothly.

So STOP worrying about VoIP issues and START thinking about telephony savings.

For more information on SMB solutions, go to:
http://www.nai.com/us/audience/small_businesses_home.asp.

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