

SIP Trunking: Enabling Enhanced Communications

Introduction

The continuing advance of networking technology is enabling new and better forms of communication, but also adding complexity to the process. Companies must maintain flexibility in a changing market, while also providing opportunities for growth. Older technologies need to be maintained, while new and improved capabilities are implemented. And of course, costs must be controlled, as employees come up to speed on the latest communication options.

SIP Trunking Defined

Protocols are conceptual models that let applications exchange data through a communications network. SIP, or Session Initiation Protocol, is an application-layer standard for creating, modifying and terminating Internet Protocol (IP) sessions with one or more participants. SIP has its roots as a protocol for bridging traditional analog telephone networks and IP networks, but it can also support a number of emerging technologies, such as VoIP, presence management and Instant Messaging. These technologies allow information to be converted into a common format, so many kinds of devices can exchange information. Essentially, SIP lets different kinds of IP traffic share the same network connections, which opens new possibilities for integrating voice with other communication options.

Trunking is a communications concept that lets multiple users share network assets by defining access rules for lines, frequencies or bandwidth. A SIP Trunk can support multiple users with voice calls, conference calls, multimedia distribution and other features. SIP Trunking actually offers a number of inherent advantages over traditional telephony. SIP connections can support very high audio quality, and with compression algorithms, can fit more calls within a given amount of bandwidth. Transmitting call-related information (such as caller ID) is easy, and calls can even be enhanced with new features, such as pictures of the caller. With a SIP connection, a telephone number isn't limited to ten digits, so Direct Inward Dialing could be implemented for every extension.

Why SIP Trunking Matters

The trend toward converged networks means that SIP-supported communications are the way of the future. Companies can use their IP-enabled networks for both voice and data, making the most of their high-speed Internet connections. They can converge local, long distance, toll-free, private voice and data traffic onto an MPLS IP-based network. Years of investment in data networks can therefore deliver an additional return, when voice and data traffic are moved to a single network platform.

SIP also allows for dynamic bandwidth allocation, ensuring that voice traffic is given the highest priority – calls always go through. There's no need to pre-allocate space to fixed voice channels, as long as enough total bandwidth is available. That means SIP supports highly efficient use of network resources, allocating bandwidth based on the needs of the moment.

Companies can also increase the performance of their call centers by using SIP to enable new routing, tracking and call transfer functionality. SIP supports a number of refer-and-redirect capabilities, which can be used to define communications-enabled business processes. Intelligent routing options can improve process efficiency and increase customer satisfaction. SIP-enabled VoIP systems can also support "Next Generation" contact centers, in which voice communication is integrated with digital communication, supporting features like Web-based "click to call" options.

SIP is based on an open standard, and can be the foundation for building new and innovative services. SIP standards add value and functionality, with extensions that cover data compression, messaging, security and call control. SIP allows for the potential to define new services suggested by end users and companies alike, and simplifies interoperability in a multi-vendor environment.

SIP can support a number of advanced communications capabilities. For example, hotels could deliver ads for local businesses or restaurants to the screens of SIP-enabled telephones, and also track



room availability. Lawyers could track time automatically, with call-logging systems feeding information directly to billing and account management.

A key advantage is that SIP Trunking lets companies implement VoIP technology at their own pace. SIP Trunks can connect existing key systems and TDM PBXs to VoIP networks, allowing for a phased migration. The SIP standard also makes for easier interoperability. Companies can manage their infrastructure investments while migrating to business class VoIP.

Finally, SIP trunking can reduce the Total Cost of Ownership (TCO). By converging voice and data networks, companies can reduce access costs, improve bandwidth utilization and bring down operational expenses. Routine tasks (such as Moves, Adds and Changes) are quicker and easier in a VoIP environment. VoIP networks can be easier to manage than legacy systems, and can often be controlled remotely, using Web-based tools.

Business Implications

Implementing a SIP Trunk as a road to VoIP offers definite business value, but the specific value delivered depends on the size of the enterprise. Large companies can save a significant amount of money by converging their voice and data networks, particularly if they're covering multiple locations. Smaller companies can chart a phased

migration path toward next-generation technologies without a large up-front investment. Companies of any size will benefit from features like dynamic bandwidth allocation.

The VoIP marketplace today is divided between equipment vendors and service providers, and many companies feel pressured to act sooner rather than later. SIP Trunking services are a good way for companies to experiment with VoIP capabilities while using their existing equipment, eliminating the need for significant capital investment and extensive user training programs. This ability to implement the change gradually is a way to reduce TCO, something that's often overlooked in purchasing decisions.

Looking Forward

In the future, SIP will dominate telecommunications, as carriers establish peer relationships to expand on-net calling. SIP applications will become more intelligent, learning how to prioritize messages, adapt to changing user preferences and ensure privacy.

SIP Trunking delivers tangible benefits in cost reduction, productivity and stronger business interactions, in both a B2B and a B2C context. Although still a new concept for many companies it already offers a broad range of features and significant business benefits.

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