



Wave of the Future in Telecom?

SIP Trunking

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SIP (Session Initiated Protocol) trunking has been a hot topic in the telecom community for the last couple of years. Numerous PBX vendors have been recommending SIP trunking with their Voice over Internet Protocol (VoIP) phone systems. How do you decide if you need or want SIP? That answer will vary customer to customer, but let's start by identifying the benefits and issues that surround SIP trunking.

SIP is a protocol that covers more than just internet and VoIP packets and how to handle set up and features. What are the advantages of SIP with regards to voice services and what needs to be considered before you order your first SIP trunk?

First in order to have a SIP trunk connect directly to a PBX, the system needs to be "SIP capable." This allows your PBX or VoIP phone system to connect directly to an ITSP (Internet Telephone Service Provider). The ITSP may be the traditional local exchange provider, like AT&T, XO or a provider dedicated to SIP traffic.

There are three mandatory components to successfully deploy SIP trunks: a PBX with a SIP-enabled trunk side, an enterprise edge device understanding SIP and an Internet telephony or SIP trunking service provider.

The PBX

In most cases the PBX is an IP-based PBX, communicating with all endpoints over IP, but it may just as well be a traditional digital or analog PBX. The sole requirement is that an interface for SIP trunking connectivity is available from service providers and vendors.

The enterprise border element

The PBX on the LAN connects to the ITSP via the enterprise border element. The enterprise edge component can either be a firewall with complete support for SIP or an edge device connected to the firewall, handling the traversal of the SIP traffic so it gets to where it needs to travel without complications..

The ITSP

On the Internet, the ITSP (Internet Telephone Service Provider) provides connectivity to the PSTN (Public Switched Telephone Network) for communication with mobile and fixed phones.

Benefits of SIP Trunking:

- An example, company traffic bypassing the PSTN, the cost of a long distance (LD) call is greatly reduced with VoIP. AT&T only charges only .02 per minute for Domestic LD calls when using VoIP.
- The connection is via an Ethernet connection in the IP based PBX. Your costs start dropping because there is no need to purchase PRI cards for your PBX. PRI cards can cost between \$1500 to \$2500 each.
- SIP trunks can be added to existing IP connections; you do not have to purchase full PRI's with 23 channels when you may only need a few voice channels. This will save on monthly access charges, taxes and surcharges.
- Most carriers offer "free calling" between enterprise locations that have SIP trunks.
- SIP trunks can work on traditional IP connections, so you may be able to purchase SIP trunks on existing data connections.

- You may be able to get "Virtual Numbers". If your office is in Los Angeles and you want a local Seattle number to ring in Los Angeles, SIP Trunks allow you to create this presence.

Some issues with SIP trunks and a few things that you should watch out for:

- SIP trunk specifications vary by ITSP. While the basic features may work with a given PBX, there may be many that will not work between every ITSP and every VoIP PBX. However, standards are developing for "SIP-Connect Specifications" that many vendors are starting follow. Be careful; SIP trunks may not be approved for your VoIP system by all carriers.
- SIP trunks are delivered by IP. This may be over the public Internet or over a private, SONET or MPLS. Depending on how you plan to receive your SIP trunks, you may have to upgrade your Firewall to be SIP capable. In addition, if you are using NAT (Network Address Translation) you need to be sure that the firewall is capable of NAT traversal so that SIP packages arrive and pass in the proper alignment without jeopardizing your traffic.
- You need to consider how your LAN (Local Area Network) is designed. Do you have enough bandwidth to support this application?
- Is your PBX vendor "Certified" to enable SIP on your VoIP system? There is much more to setting up SIP trunks than just "turning on" SIP features. There may be additional settings such as jitter buffers and echo cancellation that need to be set, depending on the ITSP.
- Security needs to be considered since many times the SIP trunks are coming in from the Public Internet. Many businesses are utilizing SIP trunks through their fast Ethernet or MPLS networks to minimize threats to their internal systems.

Are SIP trunks the wave of the future in telecom? Only time will tell. SIP trunking is entering the market quickly and will probably be very common in the next couple years. SIP trunks can offer significant cost-savings for enterprises, eliminating the need for local PSTN gateways, costly ISDN BRIs (Basic Rate Interfaces) or PRIs (Primary Rate Interfaces). However, implementation and installation of SIP trunking needs to be mapped out in order for a successful cut-over.

For more information on SIP trunks or to check availability in your area, call Ruby at 503/231-0179 or email us at info@rubycommunications.com.