



SIP TRUNKING:  
Overview & Advantages

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## TABLE OF CONTENTS

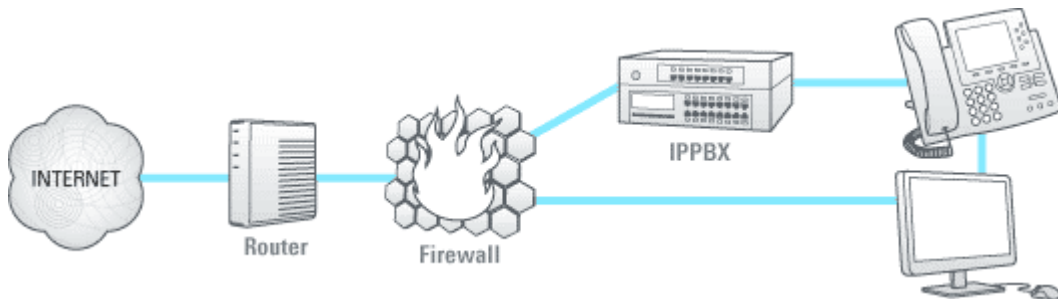
Technology Overview .....	2
Cost Savings.....	3
Optimal Bandwidth Utilization.....	3
IP-enabled Features .....	3
Call Quality.....	4
Network Reliability.....	4
Conclusion.....	4

## TECHNOLOGY OVERVIEW

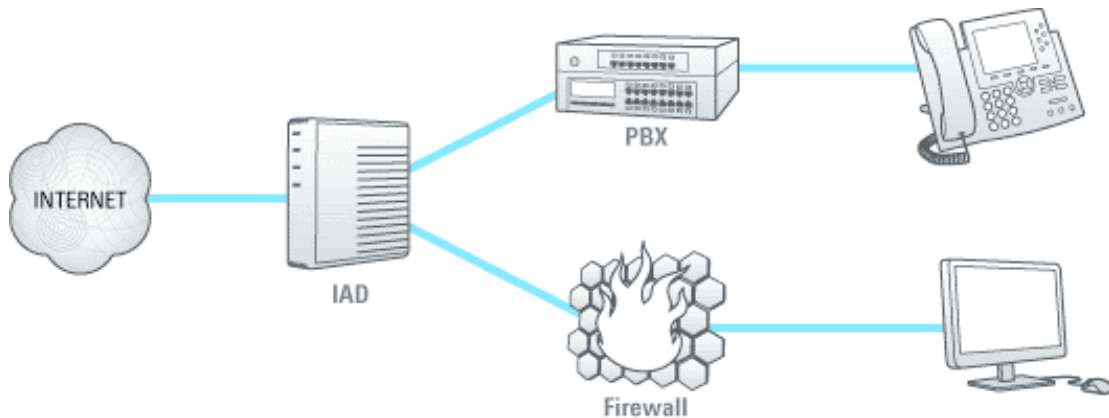
SIP trunking is a cost-effective way to provide voice services to an on-site IP PBX over an existing broadband connection. Voice and data services share a single dynamic connection, and bandwidth remains available for data when it is not being used for voice calls.

SIP trunking utilizes VoIP technology, including the SIP (Session Initiation Protocol) signaling method for establishing multimedia sessions over an IP network. Voice traffic is transmitted to and from the customer location via SIP trunks, and the SIP trunking provider transmits this traffic to and from the Public Switched Telephone Network (PSTN) via the Internet or a private network. This methodology is significantly more flexible and affordable than the traditional telephony method of using bundles of physical wires to connect PBX equipment to the PSTN. These advantages make SIP trunking a popular replacement for traditional TDM (ISDN-PRI/T1-CAS) or analog circuits.

There are two methods of SIP delivery to replace traditional phone service. Typically, SIP trunks are used with IP PBXs capable of receiving direct SIP handoffs. With these deployments, voice and data may share the same internal IP network.



Alternatively, an Internet Access Device (IAD), located on the customer's premises, can be used to convert SIP traffic to analog or TDM signaling and connected to the customer's PBX or Key System.



## **COST SAVINGS**

SIP trunking offers substantial savings over traditional telephony in several areas:

- » **No need for a local connection to the PSTN.** With SIP trunking, voice traffic is routed through an existing Internet connection, replacing the need for expensive PRI (Primary Rate Interface) connections.
- » **Lower long distance costs.** Inexpensive long distance a fundamental advantage of VoIP, and SIP trunking providers typically offer a choice of affordable long distance options, such as shared minute group plans, unlimited national/international calling plans, and/or low metered rates. In addition, calls between multiple business locations using the same service provider are usually free, regardless of the physical distance between locations.
- » **Flexible purchasing and scaling.** With SIP trunks, businesses can get exactly the number of phone lines they need, rather than being forced to purchase full PRI. If they need to add or remove lines, they can do so in small increments. In addition, there's no requirement to purchase expensive PSTN gateways or line cards to support growth.

## **OPTIMAL BANDWIDTH UTILIZATION**

SIP trunking allocates bandwidth dynamically in real time, so businesses can combine voice and data over a single circuit. When phones are idle, the full bandwidth remains available for data services, such as email and web downloads. When calls are made or received, bandwidth is automatically reallocated to voice services for as long as it is needed.

With dynamic bandwidth allocation, businesses maximize the value of their Internet access connections. This is particularly beneficial for the many businesses that experience regular peak calling times interspersed with long periods of low to moderate phone usage. These businesses have to purchase enough capacity to support peak calling times, but this bandwidth would go to waste at other times if it could not be used for data – as would be the case with traditional TDM circuits.

## **IP-ENABLED FEATURES**

SIP trunking service typically includes basic IP-enabled services such as e911 emergency calling and DID (Direct Inward Dialing) service. Because it is a Voice over IP service, SIP trunking opens up the possibility of using software applications to manage the voice service. SIP trunking providers may also offer hosted services such as hunt groups, auto attendants and audio conferencing. These services can significantly enhance productivity and lower other costs. For example, an auto attendant can replace the need for a receptionist, and an easy-to-use audio conferencing feature can reduce travel expenses. In addition, SIP trunks may enable access to advanced user-managed features such as Simultaneous Ring and Outlook Integration for even more productivity and mobility benefits.

## CALL QUALITY

Today businesses can count on a reputable VoIP service provider to deliver crystal-clear voice quality. The critical factors are adequate broadband speed for the call volume and appropriate management of the provider network.

Basic qualifications for a voice-optimized provider network include:

- » Low levels of latency, jitter and packet loss – all of which can degrade call quality
- » Ample capacity to prevent bottlenecks that can impair call quality
- » Voice call quality monitoring from within the network core

In order to guarantee true **quality of service (QoS)**, a SIP trunking provider also needs the ability to prioritize voice traffic over other data on their network. Voice prioritization ensures that packets of voice information move through points of congestion on a busy network without being lost or distorted.

## NETWORK RELIABILITY

Reliability should not be an issue with SIP trunking, but any VoIP solution is only as good as the provider's network. A reputable SIP trunking provider should be able to provide an SLA guarantee of 99.99% uptime. The best measure of network reliability is track record, so it is important for businesses to ask potential providers about their history of slowdowns and outages. A reliable network prevents these types of interruptions with dedicated paths between key locations and multi-redundant connections to the Internet.

Another point of consideration is that with SIP trunking businesses can implement failover solutions for additional continuity protection. There is no backup option if a traditional phone service connection goes down.

## CONCLUSION

For businesses with IP PBX equipment, SIP trunking is the most cost-effective way to connect to the PSTN. SIP trunks also optimize bandwidth utilization, provide access to IP-enabled features, and simplify scaling. These benefits plus relatively low start-up costs and rapid ROI make it easy to understand the widespread and growing popularity of this solution. According to Frost & Sullivan, the number of VoIP (SIP) trunking lines will increase from 950,000 in 2006 to about 14.52 million in 2012, corresponding to a revenue growth from \$606 million in 2006 to over \$9.59 billion in 2012.