

TOSHIBA WHITE PAPER

SIP TRUNKING - WHAT IS IT AND HOW CAN IT BENEFIT YOUR ORGANISATION?

Over the past few years, telephony solutions have become much more than simply making and receiving a call. The advent of Voice over Internet Protocol (VoIP) has already had some effect on the business community, with distributed organisations saving money on inter-site calls, and services such as Skype are allowing people all over the world to talk to each other over a standard Internet connection. SIP trunking now has the ability to bring these two elements together, allowing companies to save even more money by making calls across the Internet.

But what is SIP trunking, what are the true benefits, and what do you need to consider before you implement such a solution?

This white paper aims to answer these questions for you.



What is SIP trunking?

First things first, let's deal with SIP. SIP stands for Session Initiation Protocol, and is a signalling protocol used for setting up and disconnecting multimedia communication sessions, such as voice calls. SIP is defined in a number of Requests for Comment (RFC) documents that are published by the Internet Engineering Task Force (IETF).

SIP trunking is a method of using SIP to connect a telephone system to an Internet Telephony Service Provider (ITSP) via their IP network or Internet connection. This can either be completed using a SIP gateway from a traditional PBX, or directly from the IP card of an IP based phone system such as Toshiba's Strata CIX, that sits securely behind the company's firewall.

Once connected, the ITSP then allows the company to use their Internet data connection to make telephone calls to other sites on the same network (usually free of charge) or any number on the Public Switched Telephone Network (PSTN).

For a graphical representation, please see the SIP Network Diagram below.

What are the benefits of SIP trunking?

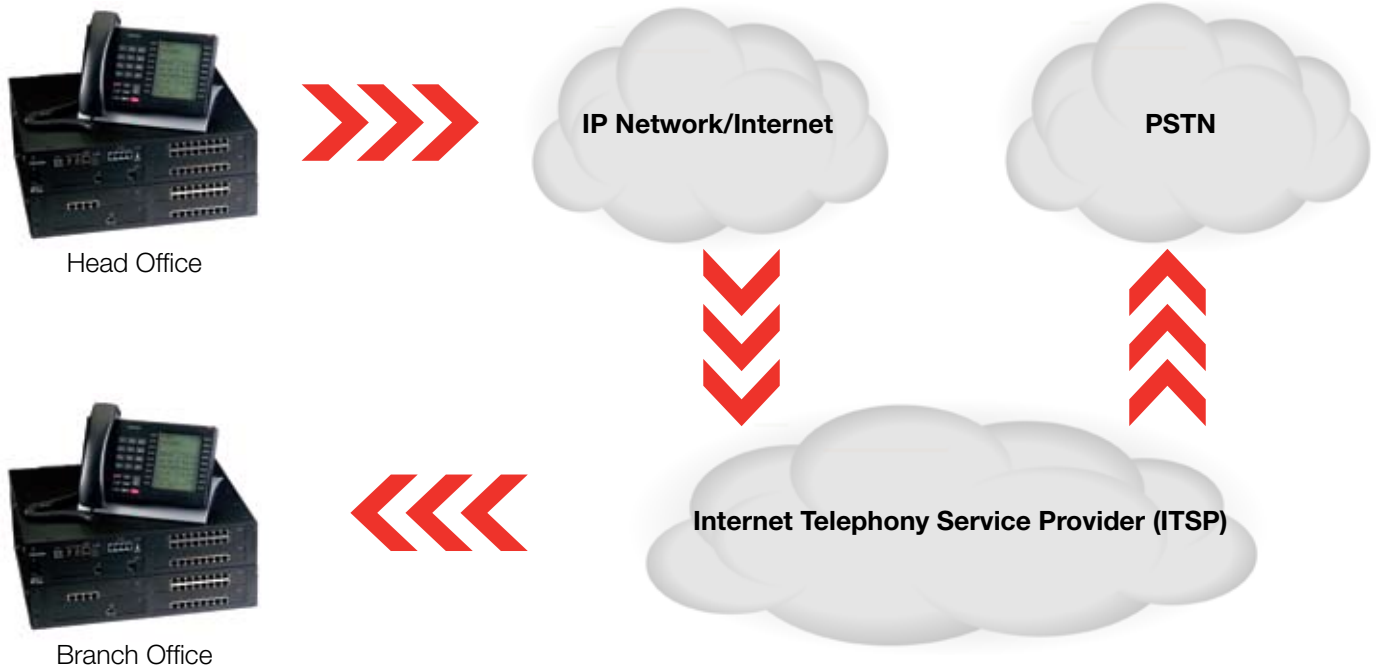
A number of organisations are already taking advantage of Voice over Internet Protocol (VoIP) across a Local Area Network (LAN) or Wide Area Network (WAN). This can deliver cost savings in terms of reduced costs between sites, and the implementation of remote working. SIP trunking, however, can deliver further cost savings and flexibility.

Non-geographic numbering - Numbering is no longer fixed to a geographical location. This allows smaller companies to easily gain a national presence, provide local telephone numbers for customer high density areas, or specific area codes to be used for specific marketing campaigns.

Easy number porting - With SIP trunking, it is easy for a company to keep the same telephone numbers, regardless of where they move.

Faster provisioning - SIP trunk providers can generally provision extra lines quicker than ISDN, reducing the initial time for implementation, and for adding channels as required.

SIP Network Diagram



Scalable solution - SIP trunks can be scalable on a per-channel basis, allowing companies to increase or decrease the amount of lines based on their changing requirements. This also means that new lines can be added quickly and easily for ad-hoc projects or temporary offices.

Lower implementation costs - SIP trunks are, generally, available at a lower cost than the subscription fees for Basic and Primary rate (BRI and PRI) ISDN interfaces. This reduces the overall cost of implementing, and running a telephone system.

Lower call costs - With lower overall call costs, SIP trunking can help to reduce your telephone bill. What's more, if you have multiple sites operating on the same SIP network, then site-to-site calls can be made free of charge.

Disaster recovery - Having a combination of SIP trunks and ISDN channels allows one to back-up the other. This ensures that customers can still get through if either service experiences problems. In addition, SIP trunking makes it very easy to simply move the telephone system to another location with an appropriate IP connection and instantly resume the service, without the need to provision new network services.

Considerations

Before you make firm decisions on any element of your communication solution, you need to be sure that it will fully satisfy your individual requirements. SIP trunking delivers tangible benefits to many businesses, but there are some considerations that you need to bear in mind.

Compatibility - Just because a product or service is branded as a SIP solution, it doesn't necessarily mean that it will work with all other SIP products or services. Unfortunately, the definitions of SIP from the IETF are interpreted by SIP equipment and network service suppliers in different ways, meaning that SIP is not a universal standard. You therefore need to make sure that your chosen telephone system has been fully tested with the SIP trunking provider's network, to ensure that all the features and functions that you require are supported.

Security - As you would expect, connecting your telephony solution to the Internet has the potential of exposing the entire network to a number of threats such as 'Denial of Service'. Whilst telephony systems that have built-in firewalls may seem like a good idea, 'Denial of Service' attacks such as fragmented packet bursts are designed to slow or stop firewall activity. If the same product is processing firewall activity and voice calls, then your business could be seriously interrupted.

Systems such as Toshiba's Strata CIX, however, are designed so that only the relevant elements of the solution that need to be connected to the Internet are placed in the De-Militarized Zone (DMZ). This means that the key elements of the system sit in the safe part of the network, which increases the security of your telephony system.

Voice quality - As with any Voice over Internet Protocol (VoIP) solution, you need to make sure that your network is fully capable of handling the increased network traffic. You therefore need to ensure that your network will be able to handle the number of calls that you expect to make over the SIP trunks, using the relevant voice encryption that you require. Your chosen telephony system provider, or SIP trunking service provider should be able to help you assess your network performance.

Reliability - SIP trunking shouldn't be considered as a complete replacement for ISDN. For the majority of businesses, telephone calls are still the primary method of contact with customers and you therefore need to ensure that you have a redundancy option available, in the event of failure. SIP trunks and ISDN should support each other rather than replace. This will ensure maximum business continuity for your organisation.

Emergency services support - Due to the fact that your ITSP is providing a link via SIP trunks to the PSTN, you can make calls to any number as normal. However, it is important to check that the SIP trunk provider you are using will provide full emergency services support. This not only means that you can dial 999 from your telephone across the SIP trunk, but also that the call will register from the location that the number was dialled.

Conclusion

SIP trunking can certainly provide benefits to a range of organisations. Depending on your current telephone system, there may be a requirement for you to upgrade to be able to take advantage of SIP trunks. Again, depending on the telephone system that you have installed this will vary in cost and, in some cases, may require a complete replacement. If you believe that you can take advantage of SIP trunking, then our recommendation is to speak to an authorised partner for the system you have in place. They will be able to give you all the information you require to make an informed decision.



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About Toshiba Strata CIX communication platforms

Toshiba's Strata CIX family consists of feature-rich, robust, reliable and easy-to-use telephone systems which can be configured according to the size and individual needs of your business.

Key benefits:

- Built-in scalability and upgrade paths ensuring easy migration to new technology of a higher capacity system.
- Common parts ensure protection of your investment.
- Common functionality allowing organisations of all sizes to enjoy the same rich set of features.
- Enhanced management information helping to improve performance and operational efficiency.
- Ultimate flexibility, ensuring that your business growth can be easily and cost-effectively reflected in your communication solution.
- Easily evaluate incoming and outgoing call patterns, restrict access to long-distance calls, connect seamlessly to high-speed digital services or take advantage of IP telephony.
- Direct connection between the IP card and SIP trunks, eliminating the need for a SIP gateway.
- Ensure that calls are automatically routed over the least costly trunk line or long-distance carrier.
- Toshiba engineering innovations ensure that you enjoy reliability superior to that of any similar-sized telephone system.
- Toshiba solutions are designed to minimise the impact of technology on the environment, and allow you to do the same.

Toshiba's business telephony solutions are designed to help you improve efficiency, reduce costs, boost customer satisfaction and increase productivity through a range of cost-effective solutions, including:

- IP, digital and hybrid telephony.
- Robust desktop and operator position solutions.
- SoftIPT to turn a laptop into a fully functioning IP phone.
- Advanced messaging solutions, including Unified Messaging (UM).
- Call routing solutions, including Automatic Call Distribution (ACD) and Interactive Voice Response (IVR).
- Real-time, online call centre performance tracking.
- Secure call recording with quick and easy retrieval.
- Computer Telephony Integration (CTI).
- Remote working and mobility solutions.



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Toshiba is committed to providing flexible, reliable and feature-rich communication solutions that help companies increase efficiency, reduce costs and improve customer satisfaction. With best in class reliability and customer investment protection, Toshiba are perfectly placed to satisfy the communication needs of our customers today and in the future.

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