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# How SIP Works in VoIP

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## Although SIP and VoIP Support IP Telephony, They are Not the Same Thing

Every search for the right communications solution for business seems to come complete with a side of alphabet soup these days. IP-PBX, PSTN, PRI, VoIP, SIP, ISDN – it's no wonder buyers can become confused. To make matters worse, those in the industry tend to use some terms interchangeably, even when they have very different technical meanings that matter.

VoIP and SIP are good examples, although they accomplish the same goal of connecting calls via the Internet, they are not the same thing. So, let's explore the differences between VoIP and SIP.



SIP is a specific protocol that enables VoIP.



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The term VoIP stands for Voice Over Internet Protocol. It is a broad term that covers any phone calls made over the Internet, as opposed to traditional telephone lines, otherwise known as the PSTN (Public Switched Telephone Network). Other terms that are used interchangeably with VoIP include, IP telephony, Internet telephony, voice over broadband, broadband telephony, IP communications, and broadband phone service. They all describe the fact that the Internet is used to digitally transmit the voice signal to another telephone or endpoint.

For the most basic function, you only need a VoIP-enabled phone and a VoIP software. This should be enough to make and receive calls through the Internet. It's a prime choice if you want to remove the clutter of hardline phones in your office and do so without having to rely on mobile phones as an alternative. With a VoIP set-up, you retain an official line for your business.

Because VoIP is limited to voice transmissions, it helps keep usage to a minimum. Your VoIP provider may even offer unlimited minutes for you to get a better deal. This is why, for the most basic voice communication, VoIP is hard to beat when it comes to practicality and price.

The term encompasses a group of protocol technologies, including proprietary ones like Skype Protocol and open standards, of which SIP technology is an example. VoIP is typically deployed in conjunction with an application, such as Skype or Google Talk, with IP enabled PBX hardware or via a hosted VoIP service.

## The Importance of Protocol

A protocol is a system of digital rules for message exchange within or between computers, phones or other digital devices. In order for one device to communicate with another, developers must use well-defined formats for exchanging messages. A protocol defines the syntax, semantics, and synchronization of communication. In order to be effective protocols have to be agreed upon and used by the developers of each connected device or application (often called endpoints). For this reason, protocols tend to evolve into industry standards, making it easy for multiple vendors to create endpoints that can communicate with each other.

## Understanding SIP

It's important to ask what SIP is used for before deploying it.

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Session Initiation Protocol (SIP) is a communications protocol that is widely used for

managing communication sessions such as voice and video calls. SIP, therefore

is one of the specific protocols that enable VoIP. It defines the messages that are sent

between endpoints and it governs establishment, termination and other essential elements

of a call. SIP can be used to transmit information between just two endpoints or many. In

addition to voice, SIP can be used for video conferencing, instant messaging, media

distribution and other applications. SIP has been developed and standardized under the

auspices of the Internet Engineering Task Force

([http://en.wikipedia.org/wiki/Internet\\_Engineering\\_Task\\_Force](http://en.wikipedia.org/wiki/Internet_Engineering_Task_Force)) (IETF).

In short, if you want an all-inclusive solution to your business communication needs, SIP trunking is your best bet. Employing further tools, such as Asterisk, will make your SIP communications platform even better because you can customize it to your needs.

## Deployment Examples

When most people hear the term VoIP, they imagine a hosted VoIP solution where the vendor hosts and operates the PBX functionality that manages call handling, voicemail and other applications. The customer's IP enabled phones connect to the Internet and ultimately to the vendor's servers and software. This, however is just one type of VoIP deployment.

SIP trunking (</home/>) delivers telephone services and unified communications to customers with SIP-enabled PBX and unified communications solutions. In this case, call management, voicemail, auto attendants and other services are provided by the PBX. The SIP trunks provide the connection between the PBX and the public telephone network, replacing the need for legacy telephone lines or PRIs (Primary Rate Interface). This gives businesses the ability to select the IP-PBX hardware and software that works best for them, while freeing them from the expense and inflexibility of traditional phone lines and carrier relationships.

The other ways to deploy VoIP are managed and hosted IP PBX. The latter is a hassle-free version where you have a provider who oversees everything. You don't have to get the hardware yourself, or set up the SIP trunking, because you'll be getting a pre-configured VoIP system. This is ideal for companies that don't have the capital to put up a fully customized SIP trunking service. Remember that it involves creating applications and buying hardware, so if you're not up to doing all of that, you have the choice of going for a managed IP PBX.

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SIP technology, however, is fast becoming the preferred method of deploying VoIP. Among the benefits that indicate how SIP works better in VoIP are the reduced costs it offers, the augmented efficiency, as well as its scalability compared to older systems.

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So there really is no such thing as SIP vs. VoIP. SIP is an industry standard method of achieving VoIP, but it's a preferred deployment method because of scalability. Your company won't be limited to using voice communication, as you can expand into video, instant messaging and more. Businesses looking to improve their communications and reduce cost (</features/>) by moving to VoIP should carefully consider each of the ways it can be deployed, including SIP trunking, and select the one that provides the greatest benefit for them.

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