What is Voice over Internet Protocol (VoIP)?

Voice over Internet Protocol (VoIP) describes voice communication delivered over an Internet Protocol (IP) connection. VoIP calls are often placed using the Internet, but there are also other types of IP networks that can be used including private networks and Local Area Networks. A VoIP call between two phones in the same office, for example, could be carried on a Local Area Network (LAN) while a call between two phones that are in different locations may require an Internet connection.

Devices & Equipment that can be used with VoIP

VoIP calls can be placed using various devices including:

Traditional Telephones: Telephones that are used with standard telephone service can be used for VoIP with a VoIP adapter (sometimes called an Analog Terminal Adapter or ATA). The simplest adapters have:
- A phone port - connect your standard phone to this port using the same phone line cord that you normally use to connect to your wall outlet.
- An Ethernet port - connect your modem or router to this port using a network cable.

Some of these devices have additional ports that allow you to connect more than one phone. You can also use one of these ports to connect a fax machine to a VoIP service.

VoIP Telephones: Phones are available that are specifically designed for VoIP service. A VoIP phone can be plugged directly into a modem or router. Phones range in price from about $30 to $400 depending on the features. Some of the features that the more expensive phones offer include:

- Specialized keys to put calls on hold, set up call conferencing, transfer calls, etc.

- Touch screens to handle calls and manage features

- Built-in cameras and video screens to enable video calls

- Internet access

VoIP phones can be purchased at electronics stores and online. VoIP service providers will not support all makes and models of phones. Before purchasing a phone, you should check with your service provider to make sure that it will work with their service.

Computers: If you have a computer with a microphone and a speaker, you can use VoIP. You can also use a connected or built-in video camera for a video call with another VoIP user. You will typically have to download a program or application to your computer in order to use your computer with a VoIP service. These applications are sometimes called "softphones". Your service provider will give you information about how to configure your softphone for use with their service.

Cell Phones: Some service providers have downloads ("apps") that can be installed on your wireless phone. After you install the app and open it on your phone, the calls that you make and receive with the app will use the wireless data network that is a part of your wireless service.

What are the Advantages of VoIP?

Competitive Rates for Service & Features: VoIP service monthly rates are very competitive and may be significantly lower than the monthly rate for a traditional phone service. Popular features like Caller ID, Call Waiting, 3-Way Calling and Voicemail are often included for no additional charge. Some providers will let you have any feature that they offer for no additional charge.

Low Calling Rates: Most VoIP services provide you with the ability to make and receive calls anywhere in the world just like a traditional phone service. Many include unlimited calling within the United States for a fixed monthly rate. Some services extend their unlimited calling plans to Canada and others even include additional countries. For international calls that are not included in unlimited plans, many VoIP services have very low per minute rates.

Lower Taxes and Fees: Some of the taxes and fees that are charged on traditional phone service may not apply to your VoIP service.

Portability: VoIP service is portable and can be used anywhere where there is a stable, reliable Internet connection. A customer could unplug the phone that they usually use at their office and use it with their Internet connection at home, for example.

Features & Options: Your VoIP service may have features and options that are not available with traditional phone service. For example, the option to forward voicemail messages that you receive to your email inbox (an email message with a sound file attached is typically created). You may also have access to a Web Portal to manage your services, see a log of all calls made and received, store contacts, etc.

How do you get started with VoIP service?

The first step is to find a service provider. You can get signed up and get the equipment you need at some electronics stores or other retail locations. You can also look for VoIP telephone service providers on the web.

You will need to provide information to create an account. Many services will require a credit card for any charges that you will incur. This includes any set up or activation charge as well as monthly charges for the service. Once your account is set up, you will be assigned a telephone number to use with the service.

If you plan on using your traditional phone and/or fax machine, you will need to get the required adapter from the service provider. Once you receive the adapter, you may need to enter some information into the configuration screen for the device to begin using it if it does not arrive with the necessary configuration.

If you have your own VoIP phone or you are going to use a softphone, the service provider will give you the information needed to enable one of these options.

911 Emergency Service

The Federal Communications Commission (FCC) requires most VoIP providers to support 911 emergency service. In general, if your VoIP service allows you to place and receive calls from parties that have landline phone service and/or wireless phone service, 911 capability should be available.

In order for 911 to be supported by your VoIP provider, the location where you are using the service has to be known to your provider. Because your service is portable, you will need to update your service provider account with your location anytime it changes. This is usually done by accessing your account information on a web site and entering a change of address.

Quality of Service/Troubleshooting

VoIP can provide you with high quality, reliable telephone service. You may notice some minor differences in sound quality but for the most part your service should be consistent. Regardless of the provider that you choose for your VoIP service, having a good Internet connection is a must.

Some of the problems that may occur with VoIP service are different than traditional phone service. Some of the issues that you may experience include:

- A delay in the conversation
- Portions of the conversation dropping/missing
- Garbled voices
- You can hear the other party but they can't hear you
- The other party can hear you but you can't hear them

These issues may be caused by the Internet connection you are using or the VoIP service (or both).

Troubleshooting issues with the service can be challenging. The first thing you should do is make sure that there are no issues with your Internet connection. Check the speed of your connection and do some testing to make sure that your connection is not dropping.

A VoIP call uses a very low amount of bandwidth (capacity) compared to downloading music, watching videos, etc. The speed of your connection is not usually a factor unless your bandwidth is very low. However, if there are other devices using the connection at the same time this may impact VoIP quality (if you are watching a high definition video at the same time you try to place a call, the video stream may use most of your bandwidth and cause problems with call quality).

If you verify that you have a good Internet connection, the next step is to contact your VoIP provider for additional troubleshooting. Based on their analysis, your VoIP provider may tell you that the problem is, in fact, related to your Internet service. If you feel that you have already verified that your connection is working well, this can be frustrating.

Some Internet service providers also offer VoIP as an additional service. This will give you a single point of contact for your issues and can sometimes provide an better overall experience (bundling Internet service with VoIP may also reduce your cost).

Reliability

It is important to be aware that if your Internet connection is not working, your VoIP phone service will not be available.

Traditional phone service typically works when you lose electrical power. However, loss of power to devices such as modems, routers and VoIP adapters will obviously impact your VoIP phone service.

If it is critical that you have some kind of phone service at all times, you may want to keep a traditional phone line or a cellular phone as a backup.