

READY NET GO ... NEWS

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<http://www.readynetgo.net>

610-856-0990

Tip of the Month

Print Screen Options

Sometimes it's necessary to get a **snapshot of your screen** - If you get an error message after performing a task and you want to record the exact error code to show your tech person or if you can't save a pop up box or photo directly, print the screen as a record of the object.

To print your screen, just click the **Print Screen** key (top right row of your keyboard). Windows saves the image to the clipboard. You now have to paste the image into a program. Open **Paint** (Start – Programs – Accessories) and click Paste on the Edit menu.

- 1) After you paste the image into Paint, click the **Select** icon on the toolbar (dotted rectangle – if it is already highlighted click it anyway).
- 2) You'll now see **small squares** in the corners and along the middle edge of the image.
- 3) Put your cursor at the top left corner where you want to start cutting and then drag your mouse down and to the right until the image is surrounded by a dotted line. Right click your mouse and choose cut or copy. If a dialog box pops up asking if you want to save, you can click No.
- 4) Go to **File - New** and then **Edit – Paste**. Your freshly cropped image will appear. Click **File – Save As**. Navigate to a location where you would like to save this image. Select either .jpg or .gif in the **Save as file type**: box (this will ensure that the file size is as small as possible).
- 5) Type in a name for the image and click **Save**. You can now email this file or print it for reference.

Been Thinking of VoIP Recently?

Just when you think the acronyms can't get any better, along comes **VoIP** which stands for **Voice over Internet Protocol**. VoIP is the wave of the future; estimates predict close to 30% of US businesses will be using VoIP within the next two years. So let's go over it in detail to get you up to speed.

What is VOIP?

VoIP is a way of transmitting voice data over the Internet. Now that bandwidth (amount of data that can travel over cables) has increased with advanced technology, voice and data providers can now offer consumers multiple ways of transmitting information. Individuals are no longer relegated to use the standard POTS - Plain Old Telephone System, to make and receive calls. You can now make and receive phone calls over any Broadband Internet connection.

Advantages of VOIP

The main advantage of VoIP is cost savings. Most providers charge a flat fee for unlimited local and long distance service with a nominal charge for setting up multiple phone numbers (for Vonage it's \$5 per extra line). The savings can be substantial if you currently have multiple phone lines with the telephone company. Since VoIP does not have the same number of taxes and fees as traditional phone service, you can save even more.

One drawback: You must have a broadband connection to use VoIP which carries its own cost. Dial-up Internet connections don't offer enough bandwidth to accommodate clear transmission of voice data. Since most businesses currently have DSL, cable modem or T1 service, VoIP is worth some investigation.

WWW (Websites Worth Watching)

1. www.call2recycle.org – RBRC (Rechargeable Battery Recycling Corporation) – Find places in your area for battery and cell phone recycling. Drop-off locations include: Radio Shack, Home Depot, Staples & more.
2. www.craigslist.org – Sell, trade or buy goods and services locally. Click on Philadelphia in list on right.

How VoIP Works

Traditional telephones are analog which means they have a variable signal in terms of amplitude and frequency, can only process voice data at a rate of 4 KHz, and can accommodate only one voice stream per channel. **VoIP uses a digital signal** which means it operates in discrete bits, can process data much faster and can accommodate multiple conversations on the same wire. Although analog telephones are still usable, telephone companies have been migrating to digital networks for voice transmission for over a decade. They realized a long time ago that the traditional circuit-based telephone wires, the PSTN or Public Switched Telephone Network, is inadequate for consumer and business needs and found that by moving voice data to the IP network, the transmission would be more efficient and less costly. The biggest drawback in the beginning was the original voice technology was unacceptable (remember the first digital answering machine voices??). Digitized voice technology has come a long way in the past ten years so much so that the difference in analog vs. digital voice data is nearly imperceptible.

Here's an overview of the process:

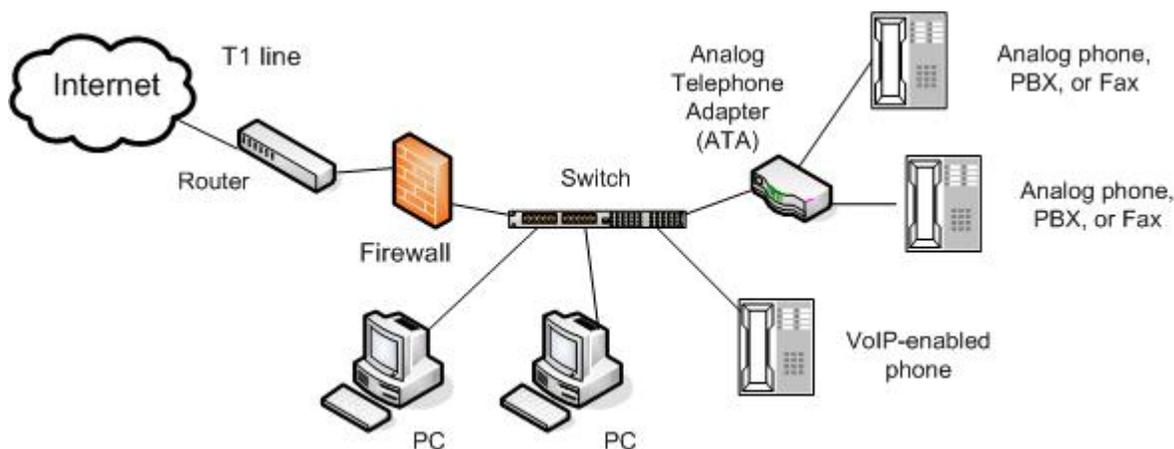
- 1) Establish service with a VoIP provider (such as Vonage or your local phone company). Attach a phone adapter (ATA) to your analog phone. Pick up the telephone handset and dial a number such as (610) 856-0990.
- 2) The phone number you dial is processed by the ATA – the analog signal is converted to digital packets, headers are created with the destination and source addresses and then the data is sent to the local telephone company via routers.
- 3) The local phone company then sends the request to your VoIP provider who routes the call to the destination phone company.
- 4) That local phone company then sends the call to the recipient who hears their phone ring. The recipient can either have a VoIP system or an analog phone. When the party picks up, their voice and yours will sound exactly as it does during a traditional phone call.
- 5) The process is repeated in both directions until both parties replace their handsets signaling a termination of the call.
- 6) Despite the extra steps involved, VoIP transmissions are much more efficient than circuit switched calls. Instead of keeping the line open even during periods of silence, VoIP only transmits active voice data which in some cases can more than halve the amount of time of the actual phone call. This frees up bandwidth on the network for other activities or phone calls.

Features

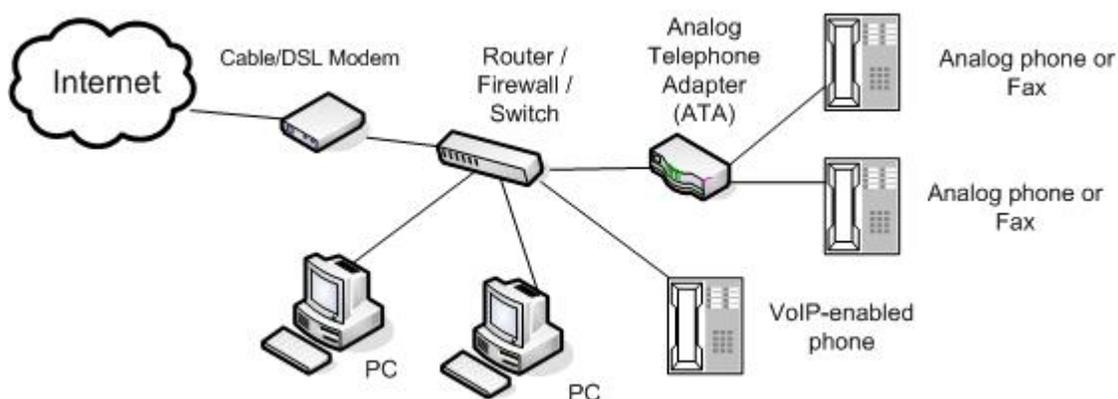
- Use your current telephones – no need to purchase VoIP-enabled phones unless you want additional features. VoIP users can call non-VoIP users and vice versa – the technology is compatible with both systems.
- Same options as traditional phone service such as call waiting, caller ID, call transfer, 3-way calling, repeat dial, return call, etc.
- FoIP – Fax over IP – no need to keep a separate fax line.
- Route phone and email messages to the same mail (voice) box; even link to cell phones. Retrieve voice messages through email or retrieve email through your phone with text-to-speech conversion software.
- Eliminate conference call fees with advanced videoconferencing features.

- Provide phone numbers for work-at-home employees at discounted rates.
- Take the phone adapter with you when you travel and hook it up to a broadband connection. You'll be able to make calls just as you would if the adapter was in your home or office and you'll still have the same number even if you're in a different state.
- Make international phone calls much cheaper than traditional long distance.
- Established technology means that VoIP will only improve in the coming years in regards to security, reliability and customer service.

Here's a diagram of how to set up a typical VoIP system with a T1 line:



Here's a typical setup if you have a cable or DSL modem:



For both systems, the ATA is the key in converting the analog signal to digital so that the voice data can travel across the Internet. If you wish, you can purchase VoIP-enabled telephones that have the analog-digital converter built-in. In this case, the ATA is not needed and the phone can be attached directly to the router or switch. With added features for web conferencing, VoIP-enabled phones are a worthwhile purchase for businesses that are upgrading their PBX system.

In the early days when VoIP was just getting started (sometimes referred to as **IP Telephony**), the phone adapter was actually software that was installed on PCs. With a sound card and microphone, individuals could make and receive phone calls with their Internet connection. With new hardware and improved voice technology, IP Telephony has improved greatly and, in many instances, can easily replace current circuit-switched telephone systems.

Security

VoIP is subject to security concerns because it is network based – packets of voice data travel over the same lines as your Internet connection.

Because VoIP is connected to your network though, means that your VoIP system is vulnerable to attacks just like your computer. Hackers can find a way into your network via this pathway so it is important to institute the same or even greater level of security you do for your data.

- 1) Segregate voice data to its own network if possible
- 2) Use encryption/decryption technology
- 3) Use **firewalls** and **NAT** (Network Address Translation) to protect the system from outsiders – NAT allows two or more devices with private IP addresses to use one public IP address.
- 4) Contract with a company that has a **reliable network** and **good customer service**. In most cases, a reputable track record with a large customer base gives credence to performance and longevity.
- 5) Understand that **VoIP requires an Internet connection**. If the connection goes down due to maintenance or technical difficulties, so will the phone service.
- 6) Provide an additional power backup system in case of an electrical failure. Some providers offer a forwarding service in case of emergencies so if the power goes out, all calls will be forwarded to another pre-selected number such as a cell phone.

Emergency Service

Unlike land lines that are tied to the phone company's database which have local emergency contact information, not all VoIP numbers are set up with **E911**, also called **enhanced 911** or **emergency 911**. This service locates your street address when you make a 911 call from a VoIP phone number.

Because **you can choose your phone number with VoIP** – it can be in a different area code than where you live – it has been difficult for VoIP providers to match the user's phone number with the proper emergency contact. Some companies do offer it so ask the provider before signing up.

Similar issues are occurring with cell phone emergency service although that industry is much further along. Weather disturbances and network systems that rely on signal width and length but not height, limit the ability to locate individuals. For instance, if someone makes an emergency call during a heavy rainstorm or if they are located on the 50th floor of a building, emergency personnel may not get a close enough signal to get there quickly, if at all.

Having adequate emergency support is critical for VoIP as well as cell phone service. While the problems with cell phones are based on a lot of unpredictable environmental conditions, the lack of E911 service is mostly red tape. If you're interested in VoIP service, check with the provider to see if they offer E911 in your area and consider those companies first in your decision.