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White Paper Voice over IP or VOIP

So! You're contemplating ordering Voice over IP now that you have broadband installed. You've looked at the online advertisements and the price is really attractive. This brief white paper is designed to help you make a choice that will enhance your communications experience.

Overview

Voice over IP is telephone service that sends your voice across the Internet or other IP network as data, along with all of the other data that is traversing the Internet. The following paragraphs will provide an overview of the technology and some opinions about some of the VOIP services offered.

How does it work?

When you contract for VOIP service, you receive an electric appliance called a VOIP Residential Gateway. You are instructed to plug a wired telephone into the VOIP Gateway as well as your home network.

The role of the gateway is to maintain a session with the VOIP provider's network and equipment, to provide dial-tone to the telephone that you connected to the Gateway and to convert your voice into data packets that will be sent through the VOIP Provider's network and equipment to the destination phone number that you are calling and the reverse; that is, to convert the voice data packets sent by the person you are talking to into voice that you can hear on the telephone you connected to the Gateway.

How well does it work?

Sometimes VOIP works astonishingly well, providing as clear if not clearer voice transport than the Public Switched Telephone Network (PSTN) that you have used all of your life. But, sometimes, the voice that you send and hear will be garbled. The cause of the garbling is interference with your voice conversation's data flow to and from your phone and that of the entity you are calling. VOIP data packets must arrive at either end of the conversation at a regular frequency. If they are delayed by internet traffic jams, the resulting sound will suffer. Unfortunately, the VOIP provider **cannot** guarantee the quality of the voice experience since the packets travel over the Internet and the Internet is a non-managed public network.

How can one assure that VOIP quality will be acceptable?

This is the issue. Nobody can provide this assurance because the Internet is a non-managed public network. No single entity has responsibility for the end-to-end integrity of the network and its ability to handle VOIP traffic flawlessly.

Should you Choose VOIP?

That's a tough question to answer. If you are willing to tolerate voice quality issues, you may be a good candidate. If you can schedule your voice calls to times of the day when there is less traffic on the Internet (late at night, early in the morning and before lunch), you may be a candidate. If you have to make a lot of long distance calls and the cost savings inherent to VOIP are vital to you financially, you may be a good candidate.

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Which VOIP Service should I Choose?

Again, this is a difficult question to answer, because the answer can be based on any number of variables. Let's assume that most of the VOIP services you are considering are about the same financially. This paper will focus only on performance and a variable that can influence the quality of the service you receive. That variable is Bandwidth consumed by the VOIP process. Bandwidth is like water flowing through a pipe. If you need to send a lot of water through a pipe, you need a big pipe! If the pipe is not big enough, then the water will not flow fast enough through the pipe. So, the less water that you have to send through the pipe, the more likely that you will be able to send it unimpaired whenever you want to. Thus, we recommend that you choose a VOIP service that uses as little bandwidth as possible. The name of that service is Packet8, <http://www.packet8.net>. Most of the VOIP products require 90-100k bits per second of continuous bandwidth all the way from your connection to the recipients. Packet8 requires only 8 k bits per second and thus, is less likely to be disrupted by traffic on the Internet.

What other choices do I have?

You could use a cell phone and discontinue your landline phone. Your wireless broadband connection doesn't need a phone line. Now that many of the cell phone providers are offering **unlimited service**, you can predict and cap your monthly expense, regardless of how many minutes you use.

You can send and receive faxes easily over the Internet without a phone line (Read the white paper on Fax without a Fax Machine).

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