

# Internet2 has great promise, performance hopes



John Deans

It is hard for me to remember what it was like before we all had Internet access 14 years ago. I doubt I go more than an hour during the week without some sort of net interaction like email, Web surfing, or text messaging. In the evenings I am even talking over the Internet with Skype's Voice over IP (VoIP) technology.

At our home office if Texas Broadband is down, we're shut-down. That means no Webkinz for the kids, an end to Web surfing for my wife and I, and the email stops for everyone. Good time to go outside, play and get some real work done.

Back in 1994 I was thrilled to get my brand new Acer desktop PC connected to Internet with a dialup connection through Southwestern Bell at a blazing speed of 24 Kbs.

Over the years the pipes to the Internet have grown with download and upload speed ever increasing. Today, I get fussy if we are not getting at least 1 Mbs download speeds which is about forty times faster than that old dialup line we had in the early 1990s.

I am still amazed at the num-

ber of home connections that are still stuck on dialup. With today's Web sites and multimedia content of sounds, images and video, the Internet has become much too fat to be delivered by modems and dialup phone lines.

High-speed broadband Internet access via DSL, cable TV, wireless, cellular or satellite is the way to go to get the rich experience of the Web.

During the workday I hook into the net numerous times through many portals depending on where I am and what device I am using. The day starts off with a quick view on my email and the world news from my wireless laptop connecting to the Web through Texas Broadband's wireless service.

While I driving around Brenham between clients, I am getting e-mails and text messages on my iPhone via AT&T's Edge network at just over 100 Kb/s. If the need arises I can park the truck and boot up my work laptop with AT&T's cellular card that connects to the 3G cellular network at around 700kb/s in most areas of Washington County.

Finally while I'm waiting for

a download or an installation to finish, I can hop on one of my client's high-speed connections and remote back into my office workstation via LogMeIn.com's remote access service. As long as the electricity stays on and I keep my clients happy I should have a job dealing with the Internet in some fashion.

Almost just as fast as the Internet became widely available back in the mid-1990s, a movement called Internet2 was started up in 1996 and has been under development ever since.

The goal was and still is for this new Internet to provide a much more robust service with an extremely reliable and redundant optical backbone.

The Internet2 project is a not-for-profit advanced networking consortium made up of more than 200 U.S. universities, 70 leading corporations, 45 government agencies, laboratories and other academic entities as well as 50+ international partner organizations. Their Web site at [www.Internet2.edu](http://www.Internet2.edu) lays out their history, goals, and structure which will someday become the new Internet that we will all utilize at some point.

It started out in 1996 with 34 university researchers elected Michael M. Roberts, former CIO at Stanford, the first Inter-

net2 Project Director. That next year the organization formally incorporated, a board of trustees conducted their first meeting, and Cisco Systems donated over \$1,000,000 worth of hardware and services to get things really going.

Basically the Internet2 project is a separate new and improved Internet with fatter and more reliable pipes that deliver digital information nationwide. This is done over the primary physical network infrastructure called the Advanced Hybrid Optical and Packet Network.

The Internet2 is made up of several robust yet logically different with each on its own overlaid infrastructure which includes Juniper's Advance IP network, Ciena CoreDirectors' Dynamic Circuit network and Infinera's Core optical network. Of course hundreds of Cisco System's routers are scattered throughout the Internet2 numerous backbones similar to the current Internet. Level 3 Communications is another key player in the Internet2's nationwide optical network.

Internet2's global Network Operations Center is housed in a state-of-the-art operations center in the new Information Communication Technology Complex on the Indianapolis

campus of Indiana University. It monitors the throughput, availability and overall health of the Internet2's infrastructure 24x7x365 (all the time) and puts the latest uptime statistics at what is called five-nines.

That is 99.999% uptime with less than 5 minutes of downtime per year!

How fast is the new Internet2? Well, about four years ago they were able to achieve a transferred data at 7.21 gigabits per second over a distance of 20,645 kilometers. That's fast!

Internet2 is not yet available for Washington County residents or most anybody else for that matter since it is still a research project limited to a couple hundred locations. The good news is that Houston is a major hub for the Internet2 so when it does eventually go public access possibly, we may get a shot hooking up to it some day.

Until then we can do some things to enhance our current Internet connectivity. First of all dump the dialup, people! If you are in town or near Brenham or Chappell Hill then call AT&T to see if you can get DSL or SuddenLink for cable access.

If you already have it then check into the upgraded packages to get at least 1 MB/s download speeds. Some of my clients

are getting around 3 MB/s so it is worth calling and asking about speed upgrades.

Another step to speed up your Internet connection is to make sure you have enough memory in your computers.

Swing by Computer Helpers and have them verify you have at least 1 GB for Windows XP PCs and for sure 2 GB for Windows Vista computers.

Though it will not increase the Internet download speeds it will help Internet Explorer or most other Web browsers perform much better.

Bottom line: Internet2 has great promise and performance hopes, but don't hold your breath for it anytime soon since they've been working on it for 10 years and very few people have access to it at this time.

Next week's column: Directv and the Web.

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