



# The Gigaphone

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## The Shouting Ground Newsletter

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### From the Cubicle of the President ...

Well, another year has almost come and gone. It's hard to believe we're already approaching the end of 2001. It seems like we were working out Y2K issues only last month! In any case, I thought I would take the time to mention a couple recent happenings, as well as let you in on a few new services.

#### **VIRUS, VIRUS, BABY**

The last few months we've seen a number of new viruses. Once again, they are targeting software products made by the fine folks at Microsoft. Recently added to the list are W32.Goner, W32.BadTrans, and Gokar. Fortunately neither one did extensive damage, but consider this: The Goner virus was written by a couple of teenagers in Israel. If anything, it underscores the fact that new viruses will continue to be developed (maliciously or not) and that computer users accessing the Internet need to protect themselves.

If you have virus software now, be vigilant about downloading updates. Your virus software is only effective if you are regularly downloading new virus definition files. We usually recommend once a week, although some organizations with dedicated Internet connections may want to do it even nightly. If you don't have virus software, we strongly urge you to get it. Make sure you are also signed up to receive virus definition files (typically a renewable annual service.) The price you pay will be worth much more than the agony of having to disinfect your computer, or restore files that were maliciously deleted from your hard drive.

One final comment: Once again these viruses spread themselves by



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### Choosing the Right System, Part 3

Now that we have decided on our Computer case, Motherboard, CPU, Hard Drive, System RAM, Removable Drives, and Video Card, we can now look at Sound cards, Modems, Monitors and Software.

**SOUND CARD:** Most sound cards on today's market are adequate for computer use and offer "3D Sound" and the ability to drive enough speakers for a "surround sound" environment, usually four speakers.

**MODEM:** If you are going to be using a standard analog telephone line dial-up connection, you will want a V.90 modem to enable you to connect at the highest possible speed. Do not get a "winmodem", also called "software modem" as these modems rely on your computer's software and internal CPU to provide many of the functions that should be built into the modem card. An external modem is a good choice since it is unlikely to be a "winmodem", and can be easily transferred to a new computer. It also can provide you with more information on the status of your modem than an internal modem. If you will be using an SDSL or an ISDN connection you will need a router for that type of connection. The

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### A Simple Lesson in Broadband Economics

The past few years have brought many expectations about how broadband service would change the way we access the Internet. While most people focused on the connection between their computer and the Internet Service Provider, little regard was given to the demands that high speed access would make on the Internet backbone, and whether service providers could supply the necessary connections.

Broadband connections for small networks typically take one of two forms, either television cable, or DSL. Previous articles have discussed some of the technical aspects of these connections. At least one of these options is available to around 75% of the population. Yet only about 15% of those people have taken advantage of it.

Why hasn't DSL or cable Internet access lived up to expectations?



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### Ssh . . . don't tell anybody . . .

Security is one of the biggest buzzwords in the world of the Internet, and rightly so. One hears about computer security breaches in the news quite frequently, which by extension means that there are significantly many more successful (and still more unsuccessful) attacks than any of us hear about.

If you are a UNIX shell user, you probably received an email from us recently alluding to upgrading our ssh software to version 2. But, what the heck is ssh? Ssh is short for **S**ecure **S**hell, and what it does is encrypt data sent over the Internet between you and a remote server.

Okay, sounds great, but what does that mean to me?

Well, say you have a web page on our server, and you're going to update one of the images. You have to login and authenticate to get to your home directory, which most of you do via telnet or an FTP program such as CuteFTP or WS\_FTP. Here's where the security issue comes in — those two protocols (telnet and ftp) send your username and password over the Internet as data packets. The problem is that those packets are sent as cleartext, so if someone is smart enough to intercept those packets, they now have your username and password. Subsequently they can essentially become you as far as our servers are concerned. They can change your web page, read your mail, send mail from your account, etc. Anything you can do, they can do as you. Enter ssh.

Ssh, basically, is an encrypted version of telnet. When you log in via ssh, our server and your client negotiate an encryption key, and all data sent between you and our server can only be unlocked by that key. These keys are also very hard for even very fast sophisticated computers/programs to figure out or "crack", so any intercepted packets are virtually rendered useless.

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*President continued*

taking advantage of vulnerabilities in Microsoft Outlook and Outlook Express. Another prudent course of action is to use another E-mail client, such as Netscape Mail, or Eudora. Other lesser known mail clients such as Pegasus, Opera, and even Pine are also NOT susceptible to many of these viruses. Hmmm ...

**PAGING MR. HERMAN ...**

Need to send an urgent message to a colleague or family-member on the road? Shouting Ground is pleased to announce our new paging bridge service. At \$5/mo, customers can send E-mail to a special E-mail address which can then be forwarded to an alphanumeric pager. Very handy for getting quick messages out, or contacting someone without having the time to wait for a callback. Contact us at 217-351-7921 (or toll free at 877-33-SHOUT) for more details.

**ACCOLADES**

Lastly, we would like to send out a warm thank you to all of the readers of the Champaign-Urbana Octopus, who voted us Best Internet Service Provider for the second year in a row. Thank you!!

Happy holidays from all of us at Shouting Ground,



Bryan Holloway,  
President

*SSH continued*

The next step up is sftp, which is an implementation of ftp that runs on top of the ssh protocol, so any files you upload or download will also have this same level of encryption, and thus any data you wish to keep private will remain so in transit. Another means of transferring files securely is **scp**, or secure copy. The current version of ssh is SSH2, so make sure any software you acquire supports this, as version 1 is no longer supported on our machines. Note also that scp and sftp run on top of ssh, which in turn runs on top of ssl, or secure socket layer.



Here are some links to ssh and sftp clients, most of which are free or shareware available for a reasonably small fee:

Putty is an ssh terminal emulator

<http://www.chiark.greenend.org.uk/~sgtatham/putty/>

QVT/Net is a whole suite of programs with an ssh terminal emulator

<http://www.qpc.com/prod01.htm>

CuteFTP Pro now supports sftp transfers

<http://www.cuteftp.com/products/cuteftppro/index.shtml>

iXplorer is a primitive but functional (and free!) implementation of sftp

<http://i-tree.org/ixplorer.htm>

and the only non-OSX Macintosh ssh client I could find (which also supports scp):

<http://www.lysator.liu.se/~jonasw/freeware/niftyssh/>

And, if you want to find out more about ssh in general, punch it into a search engine, or try these:

<http://www.ssh.com> – commercial versions

<http://www.openssh.com> – Open Source versions

<http://www.employees.org/~satch/ssh/faq/>

Jim Creason,  
Support Services Manager

*Choosing continued*

make and model will depend upon the type of service.

**MONITOR:** The days of the 14-inch monitor are gone! Most systems come with a 15-inch monitor, if they come with one at all. Try for an upgrade to a 17-inch monitor unless the cost is too high. Look for a “dot pitch” of not greater than 0.28 mm. “Dot pitch” is the distance between dots on the screen. The smaller the dot pitch, the better. If price is no object, go for a 15 or 17-inch LCD flat-panel display. Your eyes will thank you!

**SOFTWARE:** Most machines come bundled with Windows XP. You will need some application programs so that you can get some useful work out of your computer. If you are a new user be sure that your computer comes with a word processing program (like Microsoft’s Word or Corel’s WordPerfect,) and a spreadsheet program (like Excel or Quattro). Or use an integrated program (like Microsoft Works or the free Star Office,) which will provide a word processor, a spreadsheet and a flat-file database.



Steve Dyson,  
Technical Support Associate

*Lesson continued*

The industry misled us on the costs. Usually the costs for the transport (DSL copper vs. leased line T1) were compared, ignoring the cost of access and bandwidth. Improvements to existing ISP and Internet backbone provider networks to meet the increased demands were never factored in. Most television cable systems were designed for one-way access, requiring substantial investment to accommodate Internet usage. Standard Internet protocols don’t work on the cable network topology, so more equipment was needed on top of infrastructure improvements.

Connection speeds and bandwidth constraints were also overstated. DSL providers argue that cable systems have limited bandwidth for Internet (since each new television channel takes so much bandwidth, and they have to meet that demand for their mainstream business). Your connection to the cable is shared by other users in your neighborhood, so the bandwidth available may vary widely over time. Network speeds are deceptive: Even if your data gets to the cable at high speed, it still has to be encapsulated, sent to the cable head end, unencapsulated, and sent over the Internet. Return traffic takes a similar path. Thus, cable networks add latency to your traffic.

DSL shares some of the drawbacks of cable. Although each DSL user has his own line back to the Telco Central Office, many service providers use DSL multiplexers which effectively share the bandwidth with everybody else served by that equipment. With both cable and DSL systems, your network broadcast traffic might be seen by others on the same network segment.

In the past few months, three of the four biggest national DSL service providers have gone out of business. Excite@Home, one of the two biggest cable Internet operators, has filed for bankruptcy. Insight, which manages cable systems nationwide, has also filed for bankruptcy. While cable television services are profitable in most areas, selling high speed Internet access at a loss is not. The unbundled cost of a circuit of the type used for DSL is around \$125/month. One has to wonder what kind of business plan allows a company to make a profit, selling the service along with high speed Internet access for less than half that price.

Shouting Ground Technologies delivers premium DSL service that is fast and reliable. We anticipate the needs of our clients and adjust our network resources accordingly. We hope to have an arrangement soon to sell lower cost DSL service, but we will not provide any service unless we can maintain the quality, and deliver it on an ongoing basis.

Mike Berger  
Director of Engineering