



The Gigaphone

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The Shouting Ground Newsletter

105 S. Walnut St.
Ph: 217-351-7921
Fx: 217-351-7922

Champaign, IL 61820
email: admin@shout.net
www: www.shout.net

From the Cubicle of the President ...

GO SAGES!

We are pleased to announce that we are now offering Internet services in Monticello, IL. For leased-lined services, please give us a call at 217-351-7921, or toll-free at 877-33-SHOUT (74688). For dialup services, contact our partners at Monticello Pro Net. They can be reached at 217-762-3232, or on the web at <http://www.monticellopro.net/>.

SPAM, SPAM, BACON & EGG, SPAM, SPAM, MAIL-FILTERS, SPAM, SPAM AND SPAM.

Some of our customers have complained recently about the level of spam they get in their E-mail boxes. Spam is an unfortunate reality of the Internet, and one that wastes time, consumes resources, and can be almost as annoying as a Saturday afternoon "courtesy call" from GlobalCompuCitiOneAmericaCardBank.

What does Shouting Ground do about spam?

- Shouting Ground DOES NOT permit spam to originate from our networks. We may receive it, but we will not allow contributions to the problem. Violators of this policy are kindly asked to leave.
- Shouting Ground DOES filter out incoming messages with headers that clearly have been forged. Shouting Ground also filters out incoming messages from E-mail addresses that have bogus domains.
- At Shouting Ground we believe that we do not have the right to filter properly formatted incoming E-mail. It would be analogous



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Choosing the Right System, Part 2

Continuing the discussion from the last issue on what to look for in a new computer system, after deciding on a case and mother board, the next decision would be what CPU do I need?

CPU: The CPU is the heart of the computer. The important choice here is speed versus cost. Most average users will find a Pentium III 600 MHz processor is all that they will need for the life of their computer. Others, like computer game enthusiasts, will need something faster, like an Intel Pentium III 1 GHz processor (at nearly \$250 for the processor alone!)

HARD DRIVE. Today's hard disk drives have capacities that were nearly unimaginable just a few years ago. With the increasing use of scanners and digital cameras and their associated large files, the bigger the hard drive, the better. You should look for a hard drive of at least 20 GB capacity or more. Remember that adding a second or a larger hard drive is one of the easiest upgrades to a computer.

SYSTEM MEMORY (RAM): As mentioned before, you should look for at least 64 MB of SDRAM-type memory. The more you have the better. With memory prices as low as they are today, you might

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Making the Connection:

Ethernet Cables by the Numbers

Until recently, the only affordable way for most people to connect their computers to the Internet was by dialup. If you used an external modem, you needed a serial cable to connect the modem to the computer. There weren't many options, and connecting the modem was fairly simple.

Options for Internet connectivity have expanded. Broadband, like DSL and Cable, has become widely available. ISDN is used frequently in some areas. Most of the equipment that supports these services do not connect directly to your computer. They communicate via Local Area Network using Ethernet. Ethernet adapters for your computer are inexpensive, and are often included on newer machines.

Instead of connecting your computer's serial port to a modem, you have to have all devices communicating on a Local Area Network. If you only have the computer and DSL Router, then your network can be limited to a single cable interconnecting the two devices. An Ethernet Switch or Multiport Repeater (commonly called a "hub") is needed to connect three or more networked devices.

Ethernet speeds are much faster than the serial speeds used to talk to modems, and the interconnecting cables are more critical. Here are some considerations. Ethernet cables have 8-pin modular phone type connectors on each end, numbered 1-8. We will refer to the pin numbers for the following information:

- One pair of wires carries the transmit signal, and one carries the receive signal. They are pairs 1,2 and 3,6 respectively.
- Qualifying Category 5 network cable has four pairs of wires. Each pair is twisted to reduce electrical noise and interference, and the pairs are twisted differently to avoid crosstalk between them. The correct pairs should be used in the cable.



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Don't Believe the Hype

(or, the myth of affordable DSL everywhere)

DSL! Your lightning-fast always-on affordable connection to the Internet is finally here, right? Well, yes and no. Depending on your needs, your location, and your available funds, DSL may or may not be the right choice for you, or not even an option at all. DSL is an acronym for Digital Subscriber Line and comes in varieties including Synchronous (SDSL), Asynchronous (ADSL), and ISDN transmission coding (IDSL). These are delivered across twisted copper pairs like the ones that already bring phone service to your house or business. This line then plugs into a DSL modem or router, which will also have an ethernet port or ports to connect to one or more computers via an installed ethernet card.

The main difference between SDSL and ADSL is that ADSL limits the outgoing bandwidth up to one tenth of the incoming bandwidth; with SDSL incoming and outgoing bandwidth are the same. Okay, but

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President continued

to the post-office removing ads from the postal mail you receive. Although some might appreciate that, it's not our decision to make.

What can you do? Well, most E-mail clients (including Eudora and Netscape mail) have the ability to set up filters that will redirect mail according to your wishes. You can filter on the basis of the sender's E-mail address, what the subject-line is, or even on the message content itself. This can be useful in general for organizing your incoming mail. For example, I'm on a mailing list about local jazz announcements. These I automatically funnel into a Jazz folder, so as not to clutter my regular Inbox. On the other hand, messages that contain the subject "Generate Cash In Seconds" get tossed into my Trash folder. No muss, no fuss.

These filters are great for keeping things organized AND dealing with spam. Unfortunately, spammers are hip to this, so they routinely modify their messages to try and fool filters. Note that we would have the same problem when trying to do global filtering of incoming E-mail to our mail-servers. Hence, the dilemma. User-based filtering is really the best way to go since you can make your own decisions about what you want, and what you don't want. Quite frankly, I wouldn't want *my ISP* to arbitrarily select what I receive and what I don't.

Bryan Holloway,
President



DSL Everywhere continued

what does that mean? Well, say you're a graphic designer with ADSL service. You download a large image file to make some corrections. It takes one minute to download. You make some minor changes, and upload the corrected file. It takes ten minutes. Why? Because your outgoing bandwidth is limited. SDSL uploads and downloads occur at the same Kbps (Kilobits per second), so the corrected file in the above example could have been uploaded in one minute instead of ten.

Perhaps the most significant drawback to DSL is that the high speed data transmission is only effective over a short distance, so unless you're within two miles of the Telco Central Office, you're probably out of luck for ADSL or SDSL. You may still be able to get IDSL which has a range of 8-9 miles, but with bandwidth limited to 144Kbps, and opposed to 1024-1560 Kbps one can expect out of a properly implemented SDSL line. At this level, regular ISDN is a good alternative providing 128 Kbps at a lower price than IDSL, and it is not as sensitive to distance from the CO, so it is available to a much broader area.

The next obstacle is pricing, which typically ranges from around \$150/month for low-end service to around \$400/month for 1560 Kbps SDSL service. Add to this the cost of the modem or router (typically \$100-600 depending on the features on the unit), the line install, any inside wiring, network cards for machines that don't already have them, and it begins to add up. Not exactly in the price range of most casual home users. However it may be a reasonable alternative for small to medium size businesses that need not only to provide Internet access to all its employees, but also an efficient way to send and receive large files without tying up computers and bandwidth for long periods of time. It's also worth noting that companies that offer DSL services at too good to be true pricing should be approached with caution. DSL is costly to implement, and companies that resell the service at just above cost need to sell a whole lot to stay solvent – do a Web search for NorthPoint.

So, there's the reality of DSL in a nutshell. Like any other connectivity solution it has assets and drawbacks, and whether one outweighs the other can only be determined on an individual basis. If you have further questions, or wish to inquire about pricing and availability of DSL or ISDN, don't hesitate to call us!

Jim Creason,
Technical Support Associate

Choosing continued

want the dealer to add more memory before the system is delivered. Adding system memory to a computer can be done at any time. Currently, 128mb of SDRAM can be purchased for around \$30.

REMOVABLE DRIVES: The venerable 3.5-inch/1.44 MB floppy drive is still with us and probably will be for a while. You will want one of these on your system for swapping files with friends and family and, occasionally, for loading a program.

The CD-ROM drive has become a standard today. You should expect a 40 or 50 speed (40x or 50x) CD-ROM drive on your new computer.

The DVD-ROM drive is becoming more popular and provides more usefulness and versatility for your computer. Some new systems are coming with DVDs as standard; others offer a DVD as an upgrade. Unless the cost is prohibitive, go with the DVD drive.

The last drive type is the CD-RW drive. If you have to choose between a CD-ROM, DVD-ROM or a CD-RW drive, choose the CD-RW drive. It will read CDs as well as a CD-ROM drive will but gives the added versatility of being able to write (or burn) a CD. The ideal choice would be to have a DVD drive and a CD-RW drive.

DISPLAY ADAPTER (OR VIDEO CARD): Look for an AGP (Advanced Graphics Port) adapter with at least 8MB of memory. If the display adapter is integral, or built into the motherboard, it will use "shared memory", that means that it will use some of the computer's system memory (RAM) as display memory. Make sure that it can use up to 8 MB of memory.

If you are a computer game enthusiast you will want at least 32 MB of memory on an AGP display adapter, not an integral display adapter.

Watch for **Choosing the Right System, Part 3** in the next issue of The Gigaphone where I will discuss sound cards, modems, monitors and software.

Steve Dyson,
Technical Support Associate



Connections continued

- Although only two pairs are needed to carry the Ethernet signal, all four pairs should be connected. This reduces noise, and insures that the cable will work with the new standards for supplying power to networked equipment.
- A straight-through Ethernet cable (pairs 1,2 and 3,6 connect to pairs 1,2 and 3,6 end to end) is used to connect a "Data Terminal Equipment (DTE)" device to a "Data Communications Equipment (DCE)" device. A computer is DTE. A network switch is DCE.
- A crossover Ethernet cable (pairs 1,2 and 3,6 connect to pairs 3,6 and 1,2 respectively) is used to connect two DTE or two DCE devices together. Some switches and hubs have a crossover port that reverses the pairs so a standard cable can be used to connect the two DCE devices.
- Link lights are common on networked equipment. A link light indicates that one cable pair is working. You need to see a link light on both ends to be sure that the connection is complete.

If you've worked with computers for a few years, you may recall that modem cables had some of the same complications. You had to be sure the connectors had the right number of pins and gender to connect to your computer and modem, that the right pins were connected for hardware handshaking, and that you used a straight or crossover cable for the appropriate purpose. Interconnecting network devices need be no more complicated. If you run into problems, be sure to follow these hints.

Mike Berger
Director of Engineering