



# The Gigaphone

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The Shouting Ground Newsletter

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From the Cubicle of the President ...

## WEB-PAGE AUTHENTICATION PART DEUX

Since I know you always keep your copies of the Gigaphone, please refer back to Vol. 2, No. 4 and prepare for a follow-up discussion on web-page authentication. In our last episode, we protected our web-page using the built-in authentication features of the Apache web-server. Using a ".htaccess" file and a password-file, we can make sure that people authenticate themselves before proceeding.

If additional security is needed, the web-designer can not only protect pages via name and password, but you can also protect based on the IP address or hostname from whence the viewer is coming. Lets turn back to our earlier example illustrating the contents of the ".htaccess" file:

```
AuthType Basic
AuthName "Special Rates"
AuthUserFile/home/users/bryan/my_password_files/.htpasswd
<Limit GET>
    require valid-user
</Limit>
```

This gives us name/password authentication based on the name/password pairs in my password-file. Furthermore, now let's say I want to deny all access except from our office, and that they all come from the IP address range: 10.0.0.x. This can be accomplished by adding the following lines:

```
AuthType Basic
AuthName "Special Rates"
AuthUserFile/home/users/bryan/my_password_files/.htpasswd
<Limit GET>
    require valid-user
    Order Deny,Allow
    Deny from all
    Allow from 10.0.0
</Limit>
```

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## Choosing the Right System, Part 1

One of the most often asked questions that we hear is, "What kind of computer should I buy?" One might expect this question from someone looking to get their first computer but we have also heard it from experienced users looking to upgrade to a new system. Here are a few suggestions.

**CASE:** The days of selecting between a desktop case and a tower case are pretty much over. Nearly every computer you see these days is in some kind of a tower case. The most popular seen is what is known as the mini-tower. Some of these small cases have only enough room for the devices that are installed at the time of purchase, with no room for adding components later. The full-tower case, on the other hand, has plenty of room for expansion but it takes up a lot of room.

One key question to ask is the number of "drive bays" the case has. A drive bay is where a drive (hard drive, floppy drive, etc.)

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## 68'd by the FCC

If you've grown up with computers you may not realize that at one time you couldn't plug your own modem into your phone line. Modems had to be provided by the telephone company for a monthly fee. The same restrictions applied to answering machines, and even telephones. The landmark 1968 Carterfone decision changed that, when the Federal Communications Commission (FCC) agreed to allow interconnection of customer-provided equipment, with the constraint that it be connected to the telephone network through an approved interface. Those interfaces, called DAA's (Data Access Arrangement), were frequently provided by the telephone company for a monthly fee. Clearly that didn't satisfy the growing demand for alternatives to what the local telephone company provided, and the FCC created a new set of rules, Part 68, that permitted the interconnection of customer-provided equipment that met the stringent technical rules. The rules were designed to ensure that whatever you connected to your phone line would not interfere with other phone services.

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## The Lost Continent of ISDN (or pretty fast, pretty cheap)

Everyone's heard the hype about two emerging 'superfast' connectivity options – cable and DSL. In theory, they sound great, but in practice they fall into the good, fast, cheap trap: you don't get all three. Cable, while relatively cheap, has been plagued with problems of intermittent connections, variable speeds, and security issues. DSL, when implemented properly, can be very fast, secure, and reliable, with a price tag out of most individuals' range. And it's not necessarily available, depending on where you're located.

But you want something faster than your ol' 56K V.unreliable modem, right? Enter Integrated Services Digital Network, or ISDN. The big difference between ISDN and your analog modem is that the signal coming through the copper wire is digital all the way to your house. The signal is comprised of three channels: one D (delta) channel and two B (bearer) channels. The D channel is responsible for incoming and outgoing call set-up and teardown, and each B channel has 64Kbps of bandwidth in both directions – upload and download. So, utilizing both B channels you get 128K; quite a bit faster than the 40 to 48K download and up to 33.6 upload typical of a 56K modem. Also, dial-up authentication takes 1-2 seconds for ISDN as opposed to the 30 or so seconds it takes an analog modem to dial, handshake, and authenticate.

So, how does this zippy digital signal talk to your computer, telephone, fax, etceteras? In this area, Ameritech requires a device with a U interface, usually a terminal adapter with a serial

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## Web Page Auth. *continued from front*

Any machines with IP addresses 10.0.0.x will be able to connect. The first line, "Order Deny,Allow", defines the overall behavior of our security. It dictates that we are going to first deny access and then allow access. The second line, "Deny from all", is pretty self-explanatory: we're refusing access to everyone. The third line, "Allow from 10.0.0" sets an exception to the previous rule. Allow access from addresses where the first three octets match "10.0.0" (E.g., 10.0.0.1, 10.0.0.2, 10.0.0.3, etc.) Note that we haven't eliminated the "require valid-user" line. This gives us a nice mix of security. Not only does the viewer have to know their name and password, but they also have to be coming from the right place on the Internet.

If you wish to control access to more than one set of addresses, put a space between each argument.

```
AuthType Basic
AuthName "Special Rates"
AuthUserFile/home/users/bryan/my_password_files/.htpasswd
<Limit GET>
    require valid-user
    Order Deny,Allow
    Deny from all
    Allow from 10.0.0 204.253.184 23.0 shout.net
</Limit>
```

The above example allows access from 10.0.0.x, 204.253.184.x, 23.0.x.x, and any hostnames ending in "shout.net". If you have to choose between using hostnames or IP addresses, it's generally better to go with IP addresses. They are harder to forge than DNS entries.

For complete details on this type of authentication, check out the Apache documentation on the "mod\_access" module located at [http://httpd.apache.org/docs/mod/mod\\_access.html](http://httpd.apache.org/docs/mod/mod_access.html)

Happy securing!

*Bryan Holloway,  
President*



## LOST, *continued from front*

connection or a router. Generally the routers marketed to the home/small business users will have an ethernet jack to connect to a network card in your computer, and one or two POTS (Plain Old Telephone System – really!) jacks to connect your analog devices, if you choose to subscribe to both data and voice services. Each B channel will have a ten digit standard phone number associated with it, and can be used as an analog line, providing your router supports this. You may, for example, have your telephone service provider assign your current phone number to your second B channel, allowing you to receive calls and still stay connected at 64K via the first B channel. Answering machines, faxes, and modems can also be connected to the POTS jacks, should you wish to use them.

Okay, but how much does it cost? ISDN service rates vary greatly across the country, but in Illinois, they're pretty reasonable. From the telco side, a data and voice package costs about as much as having two analog phone lines. Installation is in the \$150 neighborhood, and a router will cost between \$200-\$500 depending on your needs, with full featured models available for approximately \$300. Then there's additional ISP charges for the ISDN dial-up access, usually structured around usage needs. Feel free

to call us with general questions, equipment recommendations, and our different tiers of ISDN service, which include demand-dial and dedicated data lines as well as basic ISDN dialups.

To sum up, ISDN is a tested, well-supported, widely available, relatively inexpensive and versatile upgrade from analog modems

*Jim Creason,  
Technical Support Associate*

## Choosing, *continued from front*

is mounted. Internal drive bays are normally 3.5-inch bays and are for hard drives while external drive bays are for removable-media drives like floppy drives and CD-ROM drives. Drive bays are further classified by size: 5.25-inch, suitable for CD-ROM drives and Zip drives, and 3.5-inch, suitable for floppy drives and hard drives. Two internal bays and three external bays should be considered the bare minimum. Make sure that two of those external bays are 5.25-inch bays. While the full-tower case has more bays and lots of room for expansion, it is usually very heavy and might be considered "overkill" for most purposes.

My recommended choice would be a mid-tower case with two internal drive bays and four (or more) external drive bays (three of them should be 5.25-inch size).

**MOTHERBOARD:** This is probably the most overlooked item in a computer. The motherboard's design will determine what kind and speed of CPU is supported, the type and amount of memory (RAM), the type of display adapter that can be used and the type and number of expansion slots available.

Taken in order, look for fast processor support, whether it is Pentium, AMD, Athlon, Celeron, etc. At a bare minimum you would want a 600 MHz processor, regardless of the type.

The motherboard you purchase today should support at least 512 MB of PC133 memory. This type of memory is known as SDRAM or SyncDRAM. Although there are faster types coming, this is the fastest memory type today and is the standard. You would want your new computer to have at least 64 MB of memory installed when you purchase it.

Your new motherboard should have an AGP (Advanced Graphics Port) slot for the display adapter and the display adapter should have at least 8 MB of memory of its own.

There are two types of expansion slots in use today, the ISA slot (which is on its way out) and the PCI slot. Look for at least two empty PCI slots on the motherboard; empty, that is, after the display adapter and soundboard are added to the motherboard.

Some motherboards come with everything built-in, the display adapter, sound card, modem and even a network card are all built right in to the motherboard. This produces a low-cost, reliable motherboard.

A last word on motherboards; look for cache memory (pronounced "cash") – the more the better.

Watch for **Choosing the Right System, Part 2** in the next issue of The Gigaphone where I will discuss CPUs RAM, modems, sound cards, etc.

*Steve Dyson,  
Technical Support Associate*



## 68'd *continued from front*

Part 68 spurred the development of modems, answering machines, cordless phones, fax machines, and countless other devices. While the technical requirements were stringent, they weren't insurmountable, and manufacturers built modules to make it easier.

The FCC voted a few weeks ago to change the Part 68 certification procedure. Previously, formal approval from the FCC was necessary. Now manufacturers may provide certification by independent companies, or by providing their own declaration to customers.

We have not seen a strong commitment to adherence to standards from overseas manufacturers of computer and phone accessories. As the FCC standards are relaxed, you'll need to be cautious about what you plug into your phone line.

*Mike Berger  
Director of Engineering*