



The Gigaphone

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The Shouting Ground Newsletter

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From the Cubicle of the President:

File Transfer Protocol (FTP) Idiosyncracies

In this article I will discuss one of the more confusing aspects of transferring files with FTP: What do they mean when they say "Transfer that file in ASCII mode, or Binary mode?"

A LITTLE HISTORY

Back in the olden days when people still used teletypes to work on remote computers, a simple carriage-return had a much more involved meaning. This is because to print on the next line, you had to advance the paper AND move the print head all the way to the left-hand side of the paper. This entailed sending two characters from the remote computer to your local teletype: a Control-J and a Control-M. The former instructed the teletype to move the paper down a line, and the latter moved the print head to the left side of the paper.

As teletypes were replaced by computer monitors, the concept of a carriage-return changed since it no longer involved advancing paper and moving a print head. Instead, you were merely moving the cursor, which clearly required fewer moving parts. As a result, some operating systems changed the meaning of a carriage-return. Unfortunately, nobody agreed on anything. UNIX chose a Control-J to signify a carriage return. Macs decided on a Control-M, and PCs running DOS said, "Hey, we'll do both!" So we have three operating systems and three different notions as to what a carriage return is:

UNIX	Control-J
Macintosh	Control-M
DOS	Control-J followed by a Control-M

How intuitive! Naturally, people wanted to exchange files between the various operating systems, which clearly led to a lot of confusion. Somebody uploading a DOS file

to a UNIX platform would suddenly notice that all of their lines of text were followed by a ^M (Control-M). Someone uploading a UNIX file to a DOS machine would discover that his or her carriage-returns had disappeared altogether. Very frustrating.

NOW WHAT?

When the File Transfer Protocol (FTP) was developed, it was clear that some kind of translation was needed to accommodate all these different file types. Thus was born the notion of transferring files in **Binary** mode and **ASCII** mode. In binary mode, no translation is done, and files are transferred as-is. This is normal when you transfer things like binary images, such as JPEGs, GIFs, Adobe Illustrator files, or even Word documents. (If you were to transfer one of these types of files in ASCII mode, you would probably get an unusable file on the other end.)

In ASCII mode, a special translation is done to convert carriage-returns to whatever they should be on the destination platform. If you were to transfer a pure text file from a Mac to UNIX, all the Control-M's would be converted into Control-J's. Wow! Examples of pure text files are HTML, Perl code, C code, and on most platforms, *.txt files (as a matter of convention).

Don't confuse a Word document with a pure text-file. Word documents embed special control characters to represent formatting styles (e.g., bold, italics, fonts, etc.) Make sure you use Binary mode if you're uploading or downloading this kind of file.

To make things worse, some FTP clients like to call ASCII and Binary mode different things. Fetch on the Macintosh, for example, uses "Raw Data" to signify Binary mode. It also refers to ASCII mode as "Text only" which is mostly accurate. On the Mac, there is also a MacBinary mode, and a BinHex mode, but that will have to wait for another newsletter article. If you're uploading images to any computer except a Macintosh, use "Raw Data". If you're uploading a text-file like HTML, use "Text Only."

WHAT DOES SHOUTING GROUND USE?

Our web-servers run on UNIX platforms. Therefore, if you are uploading your web-pages, Perl code, or C code from a Mac or PC, make sure you upload in ASCII mode! Otherwise you might get some strange results. Images should be uploaded in Binary mode. They won't work if you upload them in ASCII mode!

What if I'm transferring between two PCs? Can't I use either mode since the operating systems are the same? Well, yes ... probably. It's usually better, however, to get into the habit of explicitly picking ASCII or Binary mode in today's heterogeneous computing environments. You never know when you might be on a Mac or a UNIX machine someday!



Getting the Most out of your Technical Support

We love satisfied customers. And we try to keep you satisfied by providing technical support via phone for getting connected to the Internet, and several of you take advantage of this and that's great.

Here are some tips that will allow us to give you the most expedient assistance when you call.

State the symptoms - When you call up, tell us what exactly you are experiencing difficulty with. For example: I try to connect to the Internet and I get this error. I check my mail and this happens or doesn't happen. Also, let us know up front what operating system you're using (Windows95, Windows98, Macintosh? If Macintosh, what version of the System are you running?)

Remember the error message - Error messages are often very vague, but they give us at least a starting point for deducing the cause of the symptoms.

Remember what you were doing when it occurred - It's helpful for us to know what you were doing, or what programs were open prior to or during your difficulties. For example: I had Eudora open in the background, and I tried to open a page with Netscape that was loading a bunch of Javascript and then I lost my connection.

Things to avoid - Try not to be vague with your difficulties. Tell us the symptoms you're experiencing, and not necessarily what you think the problem is. Try not to ask general questions like, "Are you down?" We provide many different services and have no way of knowing what services you're using at the time.

Check our website - Under *Support* on our web page (<http://www.shout.net>) we have a list of several links to useful information like our dialup phone numbers,

instructions on how to set up your E-mail reader, and more. If your problem is a simple configuration problem, and it doesn't hinder you from getting online, check out that page first. Feel free to print out any useful information you might find there and keep it handy for a rainy day.



USENET News in Brief

When the Internet began in the early 1970's, computers primarily displayed text. Graphics were rare and expensive. The forerunner of the Internet, ARPAnet, consisted of government and military groups and research institutions. Users began informal discussion groups on various topics, and it evolved into a set of policies for exchanging the discussion group files. This informal set of policies is called USENET. In its current form, USENET is a hierarchical assortment of discussion forums of general interest worldwide. The actual presentation of these forums depends on the software used locally. Some readers present the messages in a structured message-response format, and others present everything chronologically.

USENET newsgroups are still exchanged on an informal basis, and newsgroups may originate on any news server. Typically, smaller news servers upload their news regularly to backbone News Feed servers, which redistribute them to others. Thus, an article may appear on one server several days before it shows up on another. Responses to a posting might appear before the original message.

There are seven official hierarchies of news: *comp*, *news*, *rec*, *sci*, *soc*, *talk*, and *misc*. Groups that don't fit into these categories, but are circulated widely, may be found in *alt*, and a few other headings. Many news hierarchies are intended for private, local, or regional use. The *cmi* newsgroups are distributed by Internet Service Providers in the Central Illinois area. The *shout* newsgroups are intended for Shouting Ground Technologies users only. Some local hierarchies are widely distributed anyway. Because of this ad-hoc distribution of newsgroups, it's impossible to get an accurate count, but there appear to be between 20,000 and 30,000 newsgroups distributed worldwide. It adds up to 10 Gigabytes of traffic every day. This huge volume makes it impossible to store news articles for more than a few days.

USENET news has evolved so that it's now used as an exchange medium for graphics, music, programs, and other things beyond simple text. Most web browsers also support news reading. Just point your newsreader to our news (nntp) server, news.shout.net. You'll find it an interesting alternative to surfing the web.

