

Using Internet EMail to Find and Retrieve Files on the Internet

This document was written to document my experiences learning to use the Internet to retrieve (download) files from various places (sites) using only the Internet Email Gateway provided on America On-line (AOL).

Background

AOL provides a very elegant way to send and receive Email via the Internet, but it provides no means to access the other cool features of having a true Internet connection, such as using what is called "Anonymous FTP." With Anonymous FT you can browse, locate and download files from a various computers on the Internet.

As I said, AOL provides no direct way to do this because its Internet access is limited to Email. However, there are a lot of really bright people out there in Internet land and some of them have cooked up ways to get around this problem. In a nutshell, they have programmed their Internet connected computers to receive and act on commands which you send to them in Email messages. Sort of like computerized secretaries.

Acting on these messages one type of computer secretary called an "archie" site can access its database and locates files for you on hundreds (maybe thousands) of computers and send reply mail to you telling you exactly where these files are located. Another type called an "ftpmail server" will then retrieve these files, convert them to Email messages and then mail them to you. Slick, Huh?

However, as I discovered, there are a lot of fine points to getting this right. In the hopes of helping the next soul who treads this path I try here to boil down my experiences into a cookbook approach.

Caveats

This discussion is given from a Macintosh perspective, but as I also use an IBM PC on occasion I'm fairly sure that IBMers can make some sense out of this too.

The main issue is that AOL limits the maximum size of a message you can send or receive. For a Macintosh, the limit is 20K or so. I understand that messages are limited to 4K or so for IBM PCs, but I don't know for sure, so you'll need to determine this yourself.

This is not a problem for sending command messages to archie sites or ftpmail servers, but it can be a problem when receiving long lists of files from archie or when attempting to retrieve large files via an ftpmail server. However, there are ways around this which I will discuss as we go along.

My Example

I was trying to locate a program called "SparcTracker" which I had been told was a music player program for Sparc systems. I didn't

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know where this program was located, simply that us was "out there"
on some Internet computer. Also, this was to be my first

experience using the Internet to retrieve a file. In short, I was a complete novice.

I had, however, read a few books on using the Internet so I knew about Archie sites and ftpmail servers. I also knew that if you send a message to one of these systems with the word "help" in the subject field or body of the message that these systems would reply automatically to your message and send instructions on how to use them.

In an effort to keep this as painless as possible I won't explain all the details I learned about archie or ftpmail. If you want to learn more about archie, address a message containing "help" in the subject field to:

archie@archie.rutgers.edu

There are apparently a lot of archie sites. I chose to use "archie@archie.rutgers.edu" simply because it was the first to reply to my help message. The very first archie server was "archie@archie.mcgill.ca" in Canada.

If you want to learn more about ftpmail server commands, address a message containing "help" in the subject field to:

ftpmail@ftp-gw-1.pa.dec.com

There are other ftpmail server sites, but so far I've only been successful with "ftpmail@ftp-gw-1.pa.dec.com". I think this is due to some message reformatting done by AOL that confuses the other sites I've tried.

Archie finds my file

There are a lot of nuances to using archie to find a file. However, the simplest and the one that worked for me was to send a message like this:

To:

archie@archie.rutgers.edu

Subj:

path myscreename@aol.com

Message:

prog SparcTracker
quit

The message text "prog SparcTracker" tells archie to search its database for anything that contains the string "SparcTracker". I am told that capitalization is important, so you may want to try different spellings and capitalization patterns if your first attempt at finding a file doesn't work

Note: for you hard-core types the "SparcTracker" string can be a "regular expression". There are more details about this in the help message you can get from archie.

The last line in the message should be "quit". This tells archie to ignore everything in your message after this. This is added because AOL will append some information to your message and you don't want archie trying to interpret this info

as a command. I suspect that most archies are smart enough to ignore this extra

info if you forget the "quit" command, but play it safe anyway and always try to end your archie messages this way.

AOL requires that something be put into the subject line, so I inserted the archie command "path myscreenname@aol.com" that tells archie my return message address at AOL. This is not supposed to be necessary, since archie knows where to reply to you by reading your address from your message, but again, what the heck. Note: replace "myscreenname" with your AOL screen name.

I guess I was lucky but my very first message to archie received a reply telling me several locations where the SparcTracker file could be found. The reply message contained a list information that looked like this:

Host oes.orst.edu (128.193.124.2)

Last updated 22:10 26 Mar 1993

Location: /pub/mirror/amiga.physik.unizh.ch/amiga/mus/play

FILE -rw-r--r-- 15125 bytes 16:48 28 Oct 1992 SparcTracker100.lha

Host oes.orst.edu (128.193.124.2)

Last updated 22:10 26 Mar 1993

Location: /pub/mirror/amiga.physik.unizh.ch/amiga/mus/play

FILE -rw-r--r-- 631 bytes 22:16 28 Oct 1992 SparcTracker100.readme

Translating this, I learned that the first entry means that an Internet site called "oes.orst.edu" contains a file called "SparcTracker100.lha" which is located in the directory (folder) "/pub/mirror/amiga.physik.unizh.ch/amiga/mus/play" and that this file is 15125 bytes in size.

The second entry says that there is a another 631 byte file called "SparcTracker100.readme" which is also located in this same directory.

Getting the File is the Tricky Part

OK, now that I knew where the SparcTracker file was located I needed to tell the ftpmail sever to get it and send it to me. However, there are several unavoidable fine points which need to be mastered to do this.

First, I was expecting to find source code for the SparcTracker program as the result of my search. However, the .lha suffix on the "SparcTracker100.lha" file told me that this file was an IBM PC type "archive" file. In the Mac world these files are most often Stuffit files, or something similar. So, I knew that even after I got the file I would need some sort of program for the Macintosh which would let me read this archive and extract the files in it. Searching the AOL file library yielded a program called "MacLHA 2.10.2". I downloaded it and found it was exactly what I needed. Bingo! step one was solved.

Note: the worst headache you're going to have when retrieving files from Internet sites is finding out how to read the file you ultimately get. The reason is that to save space and reduce transmission time everybody compresses their files into some form of "archive" file. This also has the benefit of letting you get a whole set of files by retrieving a single archive file. However, there are dozens of different schemes used to compress files and you will need to have an archive "decompressor" program for each type of archive you want to read.

Usually you can locate an appropriate decompressor by looking at the file suffix (in my example, the "lha" suffix") and then doing a search for this suffix in the AOL file library. This is how I located the MacLHA program for reading lha archives on the Mac.

UUENCODING (making Binary data into ASCII)

My second problem was that since the SparcTracker100.lha file was an IBM PC archive it would be a "binary" file. Internet and AOL Email is restricted to ASCII information and cannot reliably transmit binary information. However, I had learned from reading books on the Internet that there is a way to get around this restriction called "uuencoding." In uuencoding the binary information is converted into ASCII characters so that it can be inserted into a an Email message. At the receiving end you need a program which will "uudecode" this message at turn it back into a binary file.

The ftpmail server can be commanded to uuencode information before sending it, so I reasoned that all I needed was a means to do uudecoding. I didn't know much about uudecoding, but again I found a program for the Macintosh in the AOL file library called "UUTool 2.0.4" which will do it for you. Uuencoded information is rather strange looking, so just so you'll recognize it when you see it, here is an example of uuencoded data:

```
begin 0755 "test"
M}fAI|RaI|RaAhgqE|Wp@{vuS|VeGyrX@hgqHzwl@zwl@xraTywmThfUE|WmA
MyVtNhbaTzfEShfEShfd@}fuS}baMywmSxv}EkB`@}fAI|RaI|RaAhgqE|Wp@
l{vuS|VeGyrX@h`Tm
end
```

At first glance this might look like a garbled transmission, but notice that the first line of uuencoded data starts with "begin" and the last line ends with "end" The lines in between these two lines is the actual uuencoded data. Each line of uuencoded data, except for the last few lines, will contain exactly the same number of characters.

UUTool 2.0.4 is pre configured to read uuencoded text from a Microsoft Word file, convert it back to binary and write it to a new file. So, you simply cut out the uuencoded message from your AOL Email box (ignoring everything before the "begin" line and everything after the "end" line), paste it into a blank MS Word doc, save and close this doc, and then run UUTool on it.

The UUTool program has options to allow it to read from files other than MS Word and special provisions for processing uuencoded Mac programs (MacBinary), but explaining these here are beyond the

scope of this doc. UUTool does come with a few pages of documentation, but it is not a tutorial.)

AOL's Message Size Restriction

My third problem was that uuencoding expands the size of the data by 20% or so, and I wasn't sure if the resulting message would be small enough to fit within the message size limits of AOL. However, I had also learned that I could send a "chunksize" command to the ftpmail server which would tell it to automatically break the file up into chunks and send it to me in a series of Email messages. I chose a chunksize of 10000 to be on the safe side.

If the file you are retrieving is broken up into more than one message you will need to cut and paste the pieces back into a single Microsoft Word file before running it through UUTool. Be extra careful to keep the pieces in the right order and don't forget to copy the "begin" and "end" lines.

Note: if you set the font to 10 pt Courier and expand the margin to 7 inches wide before you paste in the uuencoded text, the uuencoded message will form a nice neat block of text exactly the same width in characters (except for the "begin" line and perhaps the last 2 or 3 lines.) This will make it a little easier to see if you've got everything exactly right.

Putting it all together

All that remained now was to compose the command to the ftpmail server and request the file. I decided that I would also request the "SparcTracker100.readme" file to get some experience retrieving ASCII files. Below I'll give you the command messages I sent to retrieve both these files. You should be able to adapt one or the other of these messages examples for retrieving your own binary or ASCII files.

In both examples, replace "**myscreenname**" in the subject line with your AOL screen name. Replace "**site**" with the site address where the file you want is located. Replace "**path/filename**" with the exact path to the directory containing the file you want plus the name of the file. This information is provided byarchie (compare example below with thearchie report printed above.)

Retrieving an ASCII File

To:

ftpmail@ftp-gw-1.pa.dec.com

Subj:

reply **myscreenname**@aol.com

Message:

```
connect site
chunksize 10000
ascii
get path/filename
quit
```

Here is an example of the message I used to retrieve the "SparcTracker100.readme" file from "oes.orst.edu":

To:

ftpmail@ftp-gw-1.pa.dec.com

Subj:

reply myscreenname@aol.com

Message:

```
connect oes.orst.edu
chunksize 10000
ascii
get pub/mirror/amiga.physik.unizh.ch/amiga/mus/play/SparcTracker100.readme
quit
```

Note: the "chunksize 10000" command is not needed for this example because we know the file is only 631 bytes, but you might as well get into the habit of including it, just in case.

Retreiving a Binary File using uuencoding

To:

ftpmail@ftp-gw-1.pa.dec.com

Subj:

reply **myscreenname**@aol.com

Message:

```
connect site
chunksize 10000
binary
uuencode
get path/filename
quit
```

Here is an example of the message I used to retrieve the "SparcTracker100.lha" archive file from "oes.orst.edu":

To:

ftpmail@ftp-gw-1.pa.dec.com

Subj:

reply myscreenname@aol.com

Message:

```
connect oes.orst.edu
chunksize 10000
binary
uuencode
get pub/mirror/amiga.physik.unizh.ch/amiga/mus/play/SparcTracker100.lha
quit
```