
IEEE 802.11
Wireless Access Method and Physical Layer Specifications

title: Announcing IEEE P802.11 Electronic Document Server

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Introduction

Apple Computer has recently installed a document server which is attached to the Internet. This server will be used to provide automated access to document archives. One of the archives to be maintained on this server is the IEEE P802.11 committee's document collection. Official submissions to the committee (which are submitted in electronic form) will be posted to this archive.

At this early stage, the server will be available only via the Internet, using the File Transfer Protocol (FTP). This does *not* support access via electronic mail, nor does it support "dial-in modem" access. In order to access this server, you will need direct connection to the Internet, or an account on a host computer which has direct Internet access.

Future developments are expected to include an automated e-mail server, which can process incoming e-mail messages as "requests", which may cause various actions to occur. For instance, to request a list of all documents available from the server, you may send an e-mail message to the server with the command "directory" in the body of the e-mail text.¹ The server would respond to this request by sending the requestor's e-mail account an e-mail message which contained a listing of all documents available from the server. The requestor could then refer to this listing and send additional e-mail requests to the server to request specific documents to be returned. This method permits anyone with an e-mail account which can send e-mail messages to, and receive e-mail messages from, the Internet to use the document archive.

¹ This is given as an example of how one might access the server via e-mail. The actual method may be different. Watch for future submissions for additional information on the operation of this server.

We will be working toward having both the Internet FTP server and the e-mail server operational by the time of the July 1993 (Denver) 802 Plenary meeting.

Accessing the Server

To access the server, you will need to be attached to the Internet, either via a direct connection to the Internet, or via an account on a host computer which has direct Internet access.

The following example illustrates access to the server via the FTP utility commonly found on Unix™ computing systems. In the following example, all text in Courier typeface was recorded from an actual session.

Log into your Unix™ system account. After login, you should be idle at the command line prompt. In this example, the prompt character is the percent (%) character.

Enter the "FTP" command line:

```
% ftp atg.apple.com
Connected to atg.apple.com.
220 atg.apple.com FTP server (IG Version 5.95 (from BU, from UUNET 5.51[ATG])
W.
```

Note that the Internet "name" of the server is "atg.apple.com".

Upon successful launch of the FTP utility, you will be prompted for login information:

```
Name (atg.apple.com:bsteven): anonymous
331 Guest login ok, send e-mail address as password.
Password:
230 Guest login ok, access restrictions apply.
```

You should use the name "anonymous", which is the generic "guest" account name. When prompted for password, enter your e-mail account name (e.g. bsteven@apple.com is what I use).

After successfully logging into the FTP server, your command line prompt will change to "ftp>". This reminds you that you are entering commands to the remote FTP server application - *not* your local machine.²

```
ftp> pwd
257 "/" is current directory.
```

The "pwd" command may be used to examine where you are currently positioned in the directory tree. At login, this will return "/" as the current directory (i.e. you are positioned at the "root" of the FTP directory tree).

The following command lists the contents of the current directory:

```
ftp> ls
200 PORT command successful.
```

² Note: The FTP application recognizes the exclamation point ("!") as an "escape" command which returns you temporarily to your (local) host computer's control (i.e. an "escape to shell").

```
150 Opening ASCII mode data connection for file list.
lost+found
bin
etc
pub
shlib
public
boot
226 Transfer complete.
41 bytes received in 0.016 seconds (2.5 Kbytes/s)
```

The output of the “ls” command shows us that there are seven sub-directories available to FTP users. Of these, the “pub” (and “public”) directory is the one of interest. (“pub” and “public” point to the same sub-directory. One is an alias of the other.) Next, we traverse down into the “pub” directory:

```
ftp> cd pub
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
802.11
atm
wireless
226 Transfer complete.
20 bytes received in 0.0051 seconds (3.8 Kbytes/s)
```

This time, “ls” shows us three more sub-directories. They are “802.11”, “atm”, and “wireless”. The 802.11 sub-directory contains the document archive. So we traverse down the directory tree one more time:

```
ftp> cd 802.11
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
readme
drop
226 Transfer complete.
12 bytes received in 0.0037 seconds (3.1 Kbytes/s)
```

In the 802.11 sub-directory, we find one document: “readme”. (That’s all there is at this time.) In the near future, you will find a great deal more than this!

To illustrate how we retrieve a document, the following sequence “gets” the readme document and returns it to the user’s system.

```
ftp> get readme
200 PORT command successful.
150 Opening ASCII mode data connection for readme (155 bytes).
226 Transfer complete.
local: readme remote: readme
162 bytes received in 0.0031 seconds (51 Kbytes/s)
```

The “readme” document was transferred across the Internet, and is now stored in your directory on your local machine.

To exit the FTP application, use the “bye” command:

```
ftp> bye  
221 CUL8R.
```

(FTP replies with a cryptic, but friendly, goodbye.)

That's all there is to using FTP - almost. Other things to remember:

- The FTP software defaults to "text" document transfer. Most documents will transfer successfully in this mode. But if you have trouble reading a document obtained from the archive using text transfer, you should log in again and use the "binary" command (switch FTP to true binary mode) before "get"ting the document.
- You can type a "?" (question mark) as a command to the FTP server for a brief list of commands. For more detailed information, you should refer to FTP documentation on your system, or (if your system does not have an FTP command) you may find FTP documentation in books obtainable from technical bookstores.

Submitting Documents to the Server

IEEE P802.11 members may submit contributions to the committee by sending their documents electronically for posting to the server. Documents submitted to the server will therefore usually become available to the committee members sooner than by mailing. **However, please note that posting your submissions to the archive server does not also "submit" your document to the committee. Please continue sending your submissions to the chairman (Vic Hayes) as in the past.**

Due to restrictions imposed by Apple's network management management (sorry - that's not double-speak), we are unable to allow public "write" access to this server. So, to submit documents for posting to the server, you must send them via e-mail. Send your submissions as e-mail documents (with enclosure) to the following e-mail account: wlan@atg.apple.com

Please note that this e-mail address is not currently available. I will be activating this account within the next week. If you send e-mail to this address and it is returned, you may use my personal e-mail account as a backup: bsteven@apple.com But please use this only as a backup.

Document Formats

In order to encourage electronic publication of 802.11 submissions, I do not wish to place undue limitations on "acceptable" document formats. However, the chairman states that one limitation must be observed:

All electronic submissions must be in a form such that after retrieval (from the archive), the document when viewed or printed, must include the official 802.11 headers and footers, particularly respecting the requirement for the notation "submission" in the footer.

It would probably be best to submit documents uncompressed, at least at this time, until we determine a strategy for managing compression/decompression across multiple platforms. Both the IBM PC-and-compatible and Macintosh systems have a variety of popular compression software packages available, but they are not universally cross-system-compatible, especially when using "self-extracting-archive" formats.

I will be investigating a matrix of compression types which will provide the widest applicability with the lowest administrative overhead. If you have suggestions on this topic, please send me e-mail at bsteven@apple.com.

It is my belief that the most popular document formats will probably be the following:

Microsoft Word	(for DOS, for Windows, for Macintosh)
WordPerfect	(for DOS, for Macintosh [how about Windows?])
Postscript	(various computer platforms)

Official Notice

The following disclaimer applies to all "archive" documents submitted or retrieved:

Documents are provided via the archive as a convenience to the 802.11 committee members and the public. Documents obtained from the archive are not considered "official." To obtain "official" documents, you must receive them in the committee mailings, purchase them from AlphaGraphics (the official IEEE 802 document archive) or obtain them in paper form at the meetings.

