

# Finger - A User Information Lookup Service

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## ABSTRACT

With the recent explosion in amateur TCP/IP activity, primarily made possible by the KA9Q Internet Package, the need has arisen for a user information lookup service. Users on the amateur network can now retrieve important information about other amateurs through the use of a new application called finger. This paper describes finger and its potential as an important source for information retrieval in the amateur networking world.

## 1. Background

With the release of the KA9Q TCP/IP Internet Package, written primarily by Phil Karn with contributions from others, amateurs have been able to build computer networks based around their own personal computers. The package offers the amateur a complete system for performing file transfers, sending and receiving mail, remote computer log-in facilities, and simple keyboard-to-keyboard conversations, far more advanced and powerful than a standard Terminal Node Controller. What has been lacking is the means for a simple user information lookup service, allowing amateurs to exchange basic, yet important, information about each other. In the commercial world of networking and UNIX computers, such an information service exists. This service is called *finger*.

Finger has its origins at the University of California at Berkeley, written as a means for users of the UNIX system to retrieve information about other UNIX users [1]. A user on the system could get information such as the user's full name, his telephone number, what project he was working on, and other useful facts. Other system dependent information, such as whether or not he was logged on and what terminal he was using, was returned to the person requesting the information. Not all of this information is directly applicable to the amateur networking world, but something similar to this could be very useful.

## 2. Finger for the Amateur World

Amateurs have historically been curious about their fellow hobbyists. Most conversations you listen to on the HF bands consist of an exchange of name, location, and other personal information. Likewise, amateurs using packet radio query each other for this same information in order to get to know each other. Up until

now, one has had to ask the amateur personally for the information, or lookup the information in a Callbook. Seeing the need for some sort of automatic information lookup service, I proceeded to write an application for the **KA9Q** package that would allow amateurs to lookup information when they need it.

The finger application I wrote allows amateurs using the **KA9Q** package, hereafter called 'net', to retrieve and provide information about themselves. Users can now retrieve such important facts as name, address, and telephone number, QSL information, station equipment used, projects currently undertaken, and many other things. In fact, there is virtually no limit to what information can be exchanged! **At** the same time, amateurs have complete control over what information about themselves can be retrieved by other hams. As our network expands, this application will help hams find out information about each other quickly and efficiently.

### 3. How to Use Finger

The finger command under net can be issued in any of the following three ways:

- 1) finger user
- 2) finger user@host
- 3) finger @host

**User** is the user's name you wish to query and **host** is the name of the host, or computer, that the user is at.

The first form of the command is used to find out information about a user at the local host, namely your own system. It is useful for testing finger on a system that you know is running. The second form of the command is used to find out information about a user at a remote host. If you don't know the name of a particular user at a remote host, you can use the third form of the command. This command returns a list of all users currently known on the remote computer.

To enable the finger server on your system so that others may query the users on your system, you must type 'start finger'. If you don't start the finger server on your host, other systems will not be able to finger users on your system.

### 4. The Finger Information Files

By now you are probably wondering how the computer knows information about a particular user. In order to provide a certain amount of privacy, *finger will only return information that the user provides* in a file. Each user maintains a text file of information. The local user's text file is returned to the remote user each time the local user is 'fingered'. If a user does not want to have information about himself sent to other systems trying to finger him, he simply does not create the file.

On an MS-DOS system running net, all of the finger files are stored in directory **\finger**. Each user wishing to be recognized by the finger system must create a **user.txt** file in the finger directory. For example, on **KA7AYF**'s system he may have two users; 'glen' and 'lisa'. In order for net to recognize these two users, he must create two text files: **\finger\glen.txt** and **\finger\lisa.txt** .

What you put in the finger information files is completely up to you, but here are some guidelines:

- 1) You will probably want at least your name, callsign, full address, and telephone number in your finger file so other hams can contact you.
- 2) You might add information such as your license class, station configuration, and occupation.
- 3) You may wish to add some information about what projects; you are currently working on. This will provide helpful information for others who have similar interests.
- 4) Remember that the longer your finger file is, the longer it may take to transfer the data to the system fingering you.

## 5. An Example Finger Session

On my system, I have two users; 'mike' and 'teresa'. If someone fingers mike@ka7axd.ampr, it might look something like this:

```
net> finger mike@ka7axd.ampr
SYN sent
Established
[ka7axd.ampr]
```

```
    Hello and welcome to ka7axd.ampr
    running the KA9Q TCP/IP code!
```

```
User:      mike (KA7AXD)
Real Name: Michael T. Horne
Class:     Extra

Address:   Michael T. Horne
           19595 SW Martin
           Beaverton, OR 97007
           (503) 591 - 0488

System:    IBM AT Clone
           MFJ TNC2 KISS TNC
           Yaesu FT-27RB

Occupation: Hardware/Software Engineer
           2710 Spectrum Analyzer Group
           Tektronix, Inc.

Close wait
Last ACK
Closed (Normal)
net>
```

## 6. Finger Internals

Finger uses the well known port number 79 using TCP. When fingering a remote host, a socket is opened to the remote host using port 79. Once established, the client sends the name of the user on the remote host to be queried, or simply a carriage return/line feed sequence if system information is desired (such as a list of known users). The server attempts to find a file in the finger database directory under the name user.txt. If it fails, it returns a short message to the client that no user with that name is known on the remote system, then closes the socket. If it succeeds, the server returns the contents of the user.txt file to the client, then closes the socket. If the form 'finger user' is used, a socket connection is attempted at the local host, and program flow follows that described above.

## 7. Summary

The finger application under the KA9Q Internet Package provides amateurs with a simple, but powerful, user information lookup service. Amateurs can use the application to quickly find important information about other amateurs on the network. As our network expands, finger's usefulness will expand with it, and may eventually serve as a primary resource for obtaining the information amateurs need.

## Reference

1. "Finger(1) - User Information Lookup Program," *The UNIX Programmer's Manual*, University of California, Berkeley, **1986**.