Lab 1.2: Exploring Person-to-Resource Services

Lab Overview

Objectives

After completing this lab, you will be able to:

- Establish a Telnet session by using the Microsoft Network (MSN) and the Telnet application.
- Use a command line FTP application and the Internet Explorer to locate and download a file in an anonymous FTP session.
- Use Internet Explorer to search for resources in a gopher session and download a file.

Scenario

Although the World Wide Web (WWW) service has gained most of the attention lately, the Internet actually consists of a number of services, ranging from Telnet gateways to the WWW. In this lab, you will investigate these services, with an emphasis on using version 3.0 of Internet Explorer.

For More Information

For more information on using Microsoft's Internet Explorer, Telnet, or HyperTerminal applications, see the help files associated with those applications. The book Microsoft Windows 95 Internet Kit by Bryan Pfaffenberger (Microsoft Press) is also an excellent source of additional information.

Estimated time to complete this lab: **30 minutes**

Exercises

The following exercises provide practice working with the concepts and techniques covered in this chapter.

Exercise 1: Using Telnet

In this exercise, you will use the Windows Telnet application to connect to the Library of Congress Information System. You will also use Internet Explorer to access a Telnet gateway to locate and connect to Telnet resources.

Exercise 2: Using FTP

In this exercise, you will use anonymous FTP sessions to download files. First, you will use the command-line FTP.EXE program to establish an FTP session with the Microsoft FTP server. Then, you will locate the most recent version of Internet Explorer and download it to your computer. In the second part of this exercise, you will use Internet Explorer to duplicate the same sequence of actions. You will also use Internet Explorer to access an Archie gateway, used to search for FTP resources.

Exercise 3: Using Gopher

In this exercise, you will use Internet Explorer to access gopher menu services directly. You will locate and download a file from the Library of Congress Information System. You will also use Internet Explorer to connect to a Veronica gateway, used to search for gopher resources.

Exercise 1: Using Telnet

In this exercise, you will use the Windows Telnet application to connect to the Library of Congress Information System (LOCIS). Telnet is a point-to-point connection service that allows you to connect to a computer that does not support native Internet protocols. Microsoft's Telnet application is a Windows version of the original UNIX command-line Telnet application.

In the last part of this exercise, you will also use Internet Explorer to access a Telnet gateway for LOCIS. You will use this gateway to indirectly access the LOCIS service.

The exercise assumes that you have direct Internet access through an ISP or OSP. Alternatively, Telnet services can be enabled with the HyperTerminal application, but you will also require a commercial account with AT&T, MCI, CompuServe, or another connection provider. If you are connecting to the Internet through a proxy server, and the proxy server does not recognize Telnet sessions, then you can only do the last portion of the lab.

Exercise Setup

This exercise assumes that you have Telnet service though one of the following means:

- Telnet access through an Internet gateway provided through an ISP or OSP. For example, if you have an account with MSN, dial into MSN before you start the Telnet application.
- If you have a commercial dial-up account with a provider such as AT&T, MCI, or CompuServe, Telnet services can be enabled by first starting the HyperTerminal application.

If you do not have direct Telnet capability, then you can only do the last portion of the lab.

➢ **Start the Telnet application**

Typically, Telnet is not accessible from the Start menu in Windows 95, but in Windows NT 4.0 it is.

1. If you are running Windows NT 4.0:
   Click the Start button on the taskbar. Under Programs, then Accessories, launch the Telnet application.

   Or if you are running Windows 95, click the Start button and choose Run. Type **Telnet** and press ENTER.

➢ **Set preferences in the Telnet application**

1. From the Terminal menu, choose Preferences. The Terminal Preferences dialog box should appear.
2. Select the Local Echo check box. Some hosts, such as the LOCIS, do not echo the user's commands. In order to see them, local echo must be enabled.
3. Set the Buffer Size to 125. By default, the Telnet application only remembers the information currently displayed within its client area. Setting the buffer to a larger number allows you to scroll back to see previously displayed information.
4. Choose OK to accept these changes.

➢ **Connect to the Library of Congress Information System (LOCIS)**

1. From the Connect menu, choose Remote System. The Connect dialog box should appear.
2. In the Host Name text box, type **locis.loc.gov**.
3. The Port value should be **telnet** and the Term Type should be **vt100**. These are the default values.

4. Click on the Connect button. If you are successful in making a Telnet connection, the window should now contain the opening menu of LOCIS.

```
Connect  Edit  Terminal  Help
              L O C I S :   LIBRARY OF CONGRESS INFORMATION SYSTEM

            To make a choice: type a number, then press ENTER


   1    Library of Congress Catalog          4    Braille and Audio

   2    Federal Legislation                  5    Organizations

   3    Copyright Information                6    Foreign Law

*    *    *    *    *    *    *    *    *    *    *    *    *

   7    Searching Hours and Basic Search Commands
   8    Documentation and Classes
   9    Library of Congress General Information
  10    Library of Congress Fast Facts
  11    * * Announcements * *



  12    Comments and Logoff
        Choice:
```

Remember that each Telnet host uses its own proprietary menu system and command set.

➢ **Locate information on a registered book**

1. At the main LOCIS screen (called a "menu"), type **1** and press ENTER. The Library of Congress Catalog menu should appear.

2. Again, type **1** and press ENTER. The search screen should appear. Note that it is possible to locate books by a number of criteria, including title, author, and subject.

3. At the search screen, enter **find Windows 95 Internet**. This command will display all the contemporary English books with these words in the title. (At the time of this writing, there were six matches.)

4. To look at the specifics for the book *Windows 95 Internet Kit*, enter

   find "Windows 95 Internet Kit"

   You will receive detailed information on this book.

5. Type **help** to see a category of commands available in the Scorpio search engine.

6. Type **exit** to return to the LOCIS main screen.

➢ **End the Telnet session**

1. From the Connect menu, choose Disconnect. The client area of Telnet should become blank. You are now disconnected from LOCIS.

➢ **If time permits, establish a session with the NASA Spacelink telnet service**

1. From the Connect menu, choose Remote System.

2. For the host name, enter **spacelink.msfc.nasa.gov** (the text window will scroll to accommodate extra characters). Choose Connect.

3. At the opening screen, follow directions and log in as **guest** (unless you happen to have a personal account with this system).

4. Note that this host provides user echo. To alleviate "double typing," from the Terminal menu, select Preferences. Deselect the option Local Echo.

5. The opening screen is a notice of other Internet services available for this NASA Spacelink site. Press ENTER to display the main menu screen for Spacelink. Notice that the command structure is completely different than that of LOCIS.

6. Browse through the menu structure. For example, entry **6. NASA.Projects** lists all of the current NASA projects by category.

7. When you are finished, enter **q** to quit, or simply close the Telnet application to end the session and disconnect.

➢ **If time permits, connect to a WWW telnet gateway**

Internet service gateways allow one service to be used from another service. Most commonly, they allow access of older, legacy services from within newer services. Here, Telnet services will be accessed through the World Wide Web.

1. From the Windows Start button, choose Run. The Run dialog box appears.

2. Type in **http://lcweb.loc.gov/z3950** and then press ENTER. Microsoft Internet Explorer will launch and connect to the Library of Congress WWW/Z39.50 gateway page.

3. Read the information at the top of this page.

4. When you see the line:

    Search Library of Congress Catalogs

    click on the line directly underneath it:

    Search Form 1: Title or Personal Name Only

    This will take you to the Title and Personal Name Search Form.

5. In the Enter Search Terms text box, type **Windows 95 Internet** and then click the Submit Query button (or hit ENTER). The search results, similar to what you received in Telnet, should be displayed in a new page.

Note If the search results do not display, check the hours of availability near the bottom of the search form.

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6. Minimize or close Internet Explorer.

Exercise 2: Using FTP

In this exercise, you will use anonymous FTP sessions to download files. First, you will use the command-line program FTP.EXE to establish an FTP session with the Microsoft FTP server. Then, you will locate the most recent version of Internet Explorer and download it to your computer. In the second part of this exercise, you will use Internet Explorer to duplicate the same sequence of actions. You will also use Internet Explorer to access an Archie gateway, used to search for FTP resources.

Exercise Setup

This exercise assumes that you have Microsoft Internet Explorer installed and have Internet access. As with Exercise 1, if you connect to the Internet through a proxy server, you will probably not be able to perform the command-line portion of this exercise.

➢ **Initiate an FTP command-line session**

1. Open a command-line (MS–DOS) session.

2. Move, using the **cd** command, to a directory where you want to place temporary files. You may want to create such a location, such as C:\TEMP.

3. Issue the **ftp** command to start the application FTP.EXE. The prompt should change to ftp>.

4. FTP command-line sessions have specialized commands. Type **?** at the FTP prompt for a list. Type **Help** *command-name* for a description of a particular command.

5. To connect to the Microsoft FTP site, type **open ftp.microsoft.com.** If your connection was successful, you should receive a message of the form:

```
Connected to ftp.microsoft.com
220 ftp Microsoft FTP Service
User (ftp.microsoft.com:(none)):
```

6. Type in **anonymous** for your user name and press ENTER.

7. The FTP session will prompt you for your e-mail name to be used as a password. Enter your e-mail name and press ENTER.

➢ **Investigate the FTP site**

An anonymous FTP session is similar to a limited UNIX command-line session. You are concerned mainly with performing basic file and directory operations.

1. Issue a **dir** (or **ls -l**) command to see the contents of the remote root directory. You should see something similar to this:

```
230 Anonymous user logged in as anonymous.
ftp> dir
200 PORT command successful.
150 Opening ASCII mode data connection for /bin/ls.
d---------   1 owner    group             0 May  1 23:32 bussys
d---------   1 owner    group             0 Aug  9  1995 deskapps
d---------   1 owner    group             0 Oct 27  1995 developr
----------   1 owner    group          7905 Oct  5  1995 dirmap.htm
----------   1 owner    group           712 Aug 25  1994 disclaimer.t
----------   1 owner    group           577 Jan 15 18:15 index.txt
d---------   1 owner    group             0 Feb 10  1:36 KBHelp
----------   1 owner    group       7524023 May 29 11:09 ls-lR.txt
----------   1 owner    group        955222 May 29 11:10 ls-lR.Z
----------   1 owner    group        804165 May 29 11:09 LS-LR.ZIP
d---------   1 owner    group             0 Oct 20  1995 MSCorp
d---------   1 owner    group             0 May 28 14:44 msdownload
d---------   1 owner    group             0 Oct 11  1995 peropsys
d---------   1 owner    group             0 Nov 30  1995 Products
d---------   1 owner    group             0 May  8 18:38 Services
d---------   1 owner    group             0 May 24 19:13 Softlib
d---------   1 owner    group             0 Apr  8 14:21 solutions
226 Transfer complete.
1179 bytes received in 0.66 seconds (1.79 Kbytes/sec)
ftp>
```

2. To view the contents of the remote file Index.txt, issue the command **get index.txt -**

3. For larger files, you could issue the **get** command and try to pause the screen scrolling with CTRL+S. Instead, it is easier to download the file and view it locally. To download a listing file of the entire Microsoft FTP site, do one of the following:

   • If you have a copy of a decompression program compatible with PkZip files, issue the command **get ls-IR.zip**.

   • If you do not own such a decompression program, issue **get ls-IR.txt**. The caution applies that this is a very large file (approx. 7.5 MB).

4. Next, examine the contents of the local copy. Issue the **!** command to temporarily escape to a command line session. If you downloaded the compressed version, decompress it. Then use an editor, file viewer, or the MS-DOS command **type ls-IR.txt | more** to view this file. Return to the FTP session with the **exit** command.

5. Change the current remote directory to DESKAPPS by issuing the command **cd deskapps**. If successful, you will receive a line of the form:

```
250 CWD command succesful
```

From this new directory, issue the **dir** command to see a list of contents.

➢ **Download files**

1. Change the remote directory to \DESKAPPS\WORD\WINWORD-PUBLIC\IA.

2. Download all the files from this directory by issuing the FTP command **mget *.*** Answer **y** or **yes** to the prompt for each file download.

   One of the strengths of command-line FTP is its ability to download batches of files with one **mget** command.

   Warning If you are connected across a relatively slow link, even a 28.8Kbs modem, down-loading WORDIA.EXE will take some time.
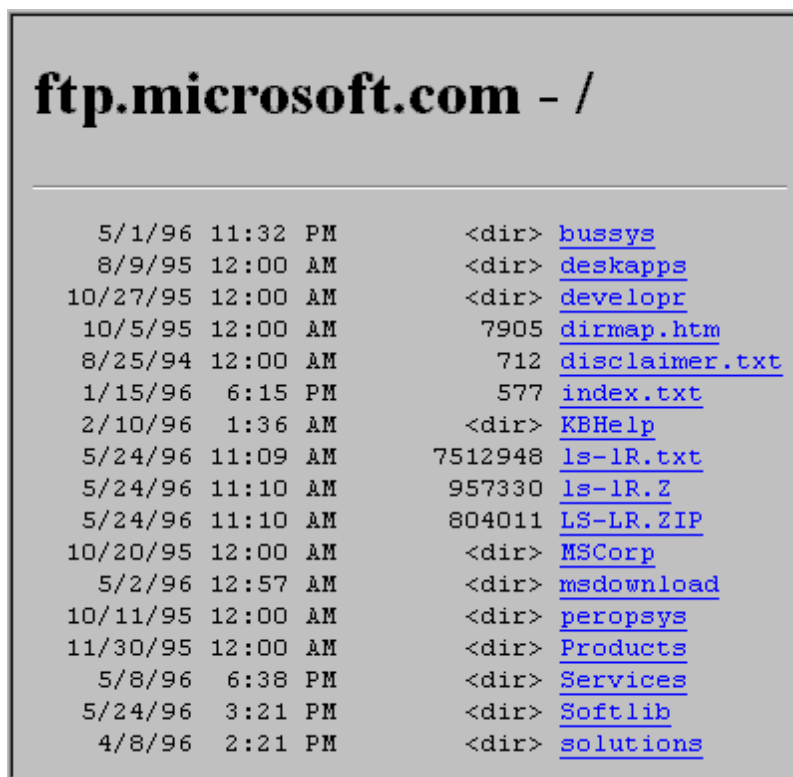

➢ **End the FTP session**

1. Issue the FTP command **quit**. You should be disconnected from Microsoft's FTP site, and the FTP command-line session should end.

2. Close the MS-DOS window or minimize it.

➢ **Use Internet Explorer as an FTP client**

1. From the Start menu, choose Run. Enter the line **ftp://ftp.microsoft.com**. Internet Explorer should start, and the opening screen should look like this:

ftp.microsoft.com - /

```
   5/1/96 11:32 PM          <dir> bussys
   8/9/95 12:00 AM          <dir> deskapps
 10/27/95 12:00 AM          <dir> developr
  10/5/95 12:00 AM           7905 dirmap.htm
  8/25/94 12:00 AM            712 disclaimer.txt
  1/15/96  6:15 PM            577 index.txt
  2/10/96  1:36 AM          <dir> KBHelp
  5/24/96 11:09 AM        7512948 ls-lR.txt
  5/24/96 11:10 AM         957330 ls-lR.Z
  5/24/96 11:10 AM         804011 LS-LR.ZIP
 10/20/95 12:00 AM          <dir> MSCorp
   5/2/96 12:57 AM          <dir> msdownload
 10/11/95 12:00 AM          <dir> peropsys
 11/30/95 12:00 AM          <dir> Products
   5/8/96  6:38 PM          <dir> Services
  5/24/96  3:21 PM          <dir> Softlib
   4/8/96  2:21 PM          <dir> solutions
```

2. To view the INDEX.TXT file, click on the filename. Notice that the cursor changes to a hand when over a "hot" spot. These hot spots indicate that a URL link is associated with the item and can be activated by clicking the mouse.

3. Click the back arrow button on the toolbar to return to the previous screen.

4. Navigate to the DESKAPPS directory by clicking on that directory name. Continue to navigate to the directory \DESKAPPS\WORD\WINWORD-PUBLIC\IA\ .

5. To download a file, right-click on that filename and choose Save Target As from the context menu. Use the resulting Save As dialog to choose an appropriate destination and name for the file.

6. Navigate back to the root directory by clicking the Back button on the Toolbar. (Alternately, the release version of Internet Explorer should have a To Parent link displayed on the page itself.)

7. End the FTP session by closing the Internet Explorer.

> ➢ **If time permits, browse the following FTP sites**

Use the command-line FTP application or Internet Explorer to investigate the following FTP sites. If you are using Internet Explorer, make sure that you append the addresses with **ftp://**. Note that, although the information is similar, these services are physically separate from the Telnet sites you investigated in Exercise 1.

1. The Library of Congress site at **ftp.loc.gov**

2. NASA's Spacelink FTP site at **spacelink.msfc.nasa.gov**

Exercise 3: Using Gopher

In this exercise, you will use Internet Explorer to gain direct access to gopher menu services. You will locate and download a file from the Library of Congress Information System. You will also use Internet Explorer to connect to a Veronica gateway, used to search for gopher resources.
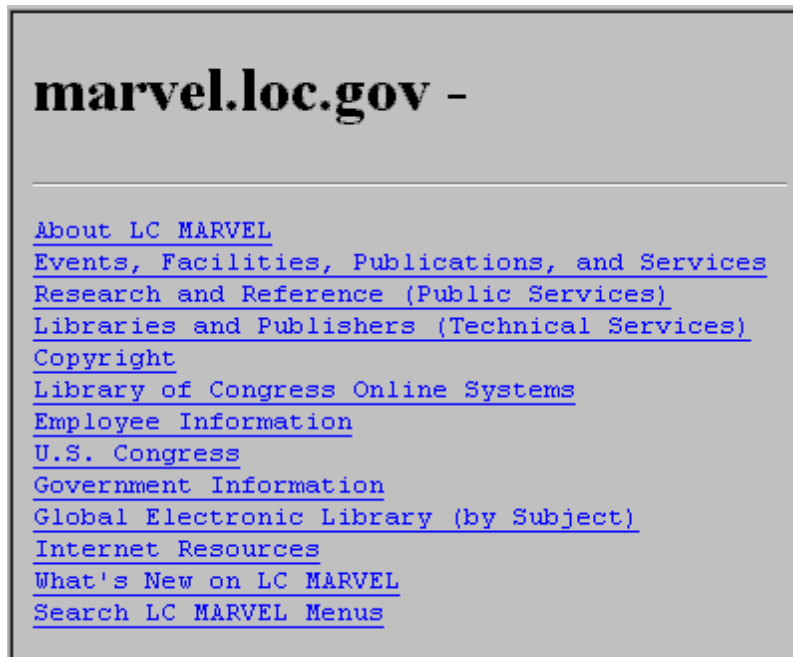
Exercise Setup

This exercise assumes that you have Microsoft Internet Explorer installed and have Internet access.

> ➢ **Use Internet Explorer to connect to the Library of Congress gopher site**

1. Start Internet Explorer.

2. In the Address (Open) text box, type the following URL:

    gopher://marvel.loc.gov

The following screen (also called a "menu" in gopher terminology) should appear:

marvel.loc.gov –

About LC MARVEL
Events, Facilities, Publications, and Services
Research and Reference (Public Services)
Libraries and Publishers (Technical Services)
Copyright
Library of Congress Online Systems
Employee Information
U.S. Congress
Government Information
Global Electronic Library (by Subject)
Internet Resources
What's New on LC MARVEL
Search LC MARVEL Menus

➢ **Read and download files with Internet Explorer**

Navigation within a single gopher site using Internet Explorer is similar to navigating an FTP site using Internet Explorer.

1. Click on the first entry, **About LC Marvel** to move to that logical directory. Internet Explorer should display a new screen for the new directory. Note that those entries without a <DIR> in front of them are files.

2. Click on the first file, WELCOME. Read the introduction to the LC Marvel project. When you are finished, click the back arrow button on the toolbar to return to the /ABOUT directory.

3. Right-click on the History and Development entry. Choose the entry Save Target As to copy this file to a local hard drive. (You may want to change its name to edit out the *%#* characters.)

4. Move back to the root directory by clicking on the back arrow button on the toolbar or by clicking on the To Parent link in the upper-left corner of the screen.

➢ **Navigate to another site**

One of the main features that differentiates gopher from FTP is that gopher menus can have links to other remote resources, including other gopher sites, FTP directories and files, Telnet sites and resources, databases, and so on. Because of this, you tend to navigate through "Gopherspace" by using these links.

1. From the root directory, navigate through the following child screens (menus):

    Internet Resources
    Gophers
    Other Gopher and Information Servers via University of Minnesota
    All the Gopher Servers in the World

    Notice at the third link that the URL in Internet Explorer's Address box has changed to **gopher://gopher.micro.umn.edu/**<*etc*>. You are now communicating with the University of Minnesota Gopher server.

2. From the alphabetized list of gopher servers, find

    NASA SpaceLink Project (Marshall Space Flight Center)

    and click on it. You should be taken to the gopher server for NASA's Spacelink project. This is logically similar to, but a separate physical service from, the Telnet host you visited in Exercise 1 and the FTP host you visited in Exercise 2.

3. Briefly browse the SpaceLink gopher site.

➢ **If time permits, search Gopherspace using Veronica**

Although gopher resources form a linked network, there is no central catalog or index system designed into the structure of Gopherspace. (This lack of "directory services" is something gopher shares with the Web.)

However, there are two common methods that have been developed to search Gopherspace. The first is a search engine for gopher, named Veronica, that lets you dynamically perform Boolean string searches on directory and resource names.

1. To obtain a list of Veronica servers that are referenced from the LOC gopher site, connect to the menu screen at **gopher://marvel.loc.gov/11/internet/veronica**.

2. The first several entries, such as **Veronica FAQ**, are text file resources that you can view. Click on **Search Gopherspace Using Veronica at NYSERNet** to access that Veronica service. A gopher search page should appear. (If you cannot connect, try one of the other Veronica services.)

3. In the text box, type **Windows AND (NT OR 95) AND Internet** and then press ENTER. After a pause, the result of the string search will be displayed.

    Note that these are the results of a search on directories and resource names only, and not a resource content search. Notice also that some of the results are duplicates.

4. Slowly move the mouse cursor down the duplicate listing of documents in the Windows NT Internet FAQ series. Note that the destination of the link (or "shortcut") appears in the status bar of Internet Explorer.

   The duplicate search results can be attributed to documents existing on more than one gopher server.

5. Click on one of these FAQ entries to jump to the associated document.

➤ If time permits, search Gopherspace using Veronica and subject trees

The second method for finding gopher resources is subject trees. These are compiled hierarchical lists of gopher services and resources, which are browsed as you would an encyclopedia or table of contents. Gopher tree subjects tend to be very academic, catering to an audience primarily of scientists, engineers, lawyers, and so on.

Because there is no overriding directory structure to Gopherspace, subject trees tend to be fragmentary, duplicative, and disconnected.

1. Connect to the gopher site **gopher://chico.rice.edu/11/Subject** (note the capital S in subject). This is Rice University's gopher subject tree.

2. Click on the following entry: **Computer Networks and Internet Resource Guides**.

3. From the list, click on **Hobbe's Internet Timeline, by Robert H'obbes' Zakon**. This is a text file that will be displayed in Internet Explorer. Note from its address that this document exists on the WELL gopher site. (This server has its own subject tree at **gopher://gopher.well.sf.ca.us**.)

4. Click the back arrow to return to the computer-resource listing.

5. Click on **ARL Directory of E-Journals, Newsletters & Academic Lists**. This will take you to another gopher service. Follow the next two links to view a text file with a list of Internet periodicals, sometimes called electronic magazines, *ezines,* or just z*ines*.

   • **1995 ARL Directory of E-Journals, Newsletters & Academic Lists**

   • **Electronic Journals and 'Zines**

6. Navigate back to the computer resource listing by clicking the Back button on the toolbar three times. Click on the entry near the bottom: **Wired magazine: HotWired (WWW)**. This will take you to the Web introduction page for HotWired electronic magazine. This resource is a WWW site (**http://www.hotwired.com/frontdoor**).

➤ If time permits, browse the gopher Jewels web site

The gopher Jewels page is a subject tree that has been implemented as a Web site. Besides the addition of graphics and additional text, it is very similar to a standard gopher subject tree. (In fact, this page contains a link to the gopher version.)

1. In the address box of Internet Explorer, type **http://andromeda.einet.net/GJ**.

2. Browse some of the links; for example, **12.Computer Related**. Note that the computer resource list makes good use of headings and indentation.

3. .Continue to investigate the tree on your own. Note that some lead to gopher sites, others to Web pages, and so on.