

Princeton University

COS 217: Introduction to Programming Systems

A Minimal COS 217 Computing Environment

1. Fetching the SSH Software

1.1. Using your own Microsoft Windows computer:

1.1.1. Download the SSH software.

Use a web browser to visit the page <http://www.princeton.edu/~tis/security/sshtools.html>.

Download file SSHWinSecureShell31.exe via an anchor on that page.

1.1.2. Install the SSH software.

In Windows Explorer, double-click on file SSHWinSecureShell31.exe to launch the SSH software installer.

Choose the default directory: Program Files\SSH Communications Security.

Note:

- The SSH software consists of two Microsoft Windows applications: a “SSH Secure Shell Client” and a “SSH Secure File Transfer Client.” You will use the File Transfer Client to download files from arizona to your computer, and to upload files from your computer to arizona. You will use the Shell Client for all other work.
- You need not fetch the SSH software to use the computers in the Friend Center 016 or 017 labs.

2. Conducting an Arizona Terminal Session

2.1. Using your own Microsoft Windows computer:

2.1.1. Launch the SSH Secure Shell Client.

Double-click on the SSH Secure Shell Client desktop icon.

2.1.2. Log into arizona.

In the SSH Secure Shell Client...

Click on the “File | Quick Connect...” menu item.

In the “Connect to Remote Host” dialog box:

For “Host Name” type “arizona.princeton.edu”.

For “User Name” type your Princeton user name.

For “Port Number” type “22”.

For “Authentication Method” choose “Password”.

Click on the “Connect” button.

In the “Enter Password” dialog box...

Type your Princeton UNIX password.

Confirm that the SSH Secure Shell Client window displays a UNIX shell prompt.

2.1.3. Use arizona via the SSH Secure Shell Client as desired.

2.1.4. Log off of arizona.

In the SSH Secure Shell Client...

Issue the “logout” (or “exit”) command to disconnect the client from arizona.

2.1.5. Exit the SSH Secure Shell Client

2.2. Using a Sun Computer in the Friend Center 016 Lab:

2.2.1. Log into the Sun computer.

Type your user id and UNIX password.

If this is your first login, choose “Common Desktop Environment” as your desktop environment.

Confirm that the display background shows “Solaris” and that the bottom of the display shows a control panel.

2.2.2. Open a terminal window.

Click the right mouse button once (and release) in an empty area of the display.

Click the left mouse button on the menu entry for "Tools."

Click the left mouse button on the sub-menu entry for "Terminal".

Confirm that the display shows a terminal window, and that the terminal window shows a UNIX prompt.

2.2.3. Log into arizona.

In the terminal window...

Type “ssh arizona”.

Type your UNIX password.

Warning: If you omit this step, your UNIX environment may be configured improperly.

2.2.4. Use arizona via the terminal window.

2.2.5. Log out of arizona.

In the terminal window...

Issue the “exit” or “logout” command.

2.2.6. Close the terminal window.

Click on the “Window” | “Close” menu item, or type “exit”.

2.2.7. Log out of the Sun computer.

Position the mouse over the background, i.e., not over any windows.

Click the *right* mouse button, and select "Logout".

2.3. Using an iMac Computer in the Friend Center 016 Lab:

2.3.1. Log into the iMac computer.

Type your user id and UNIX password, and click the “Log In” button.

In the “SambaLogin” dialog box...

Type your Windows NT password, and click the “Mount” button.

2.3.2. Open a Terminal window.

Click on the “Terminal” button at the bottom of the screen; its icon is a video display with a cursor.

2.3.3. Log into arizona.

In the terminal window...

Type “ssh arizona”.

Type your UNIX password.

2.3.4. Use arizona via the terminal window.

2.3.5. Log out of arizona.

In the terminal window...

Issue the “exit” or “logout” command.

2.3.6. Close the terminal window.

Click on the red button in the window's title bar.

2.3.7. Log out of the iMac computer.

On the menu, choose AppleSymbol | "Log Out".
Click on the "Log Out" button in the dialog box.

2.4. Using a Dell Computer in the Friend Center 017 Lab:

2.4.1. Log into the Dell Computer

Type your user id and Windows NT password.
Choose "PRINCETON" as the domain.

2.4.2. Launch the SSH Secure Shell Client.

Double-click on the "Secure Shell to Arizona" desktop icon.
If the client displays a "Host Identification" dialog box, click on the "Yes" button.
If the client displays a "Password" dialog box, click on the "Cancel" button.

2.4.3. Log into arizona.

In the SSH Secure Shell Client...
Click on the "File | Quick Connect..." menu item.
In the "Connect to Remote Host" dialog box:
For "Host Name" type "arizona.princeton.edu".
For "User Name" type your Princeton user name.
For "Port Number" type "22".
For "Authentication Method" choose "Password".
Click on the "Connect" button.

In the "Enter Password" dialog box...
Type your Princeton UNIX password.
Confirm that the SSH Secure Shell Client window displays a UNIX shell prompt.

2.4.4. Use arizona via the SSH Secure Shell Client as desired.

2.4.5. Log out of arizona.

In the SSH Secure Shell Client...
Issue the "exit" or "logout" command.

2.4.6. Exit the SSH Secure Shell Client.

Click on the "File" | "Exit" menu item.

2.4.7. Log out of the Dell computer.

Click on the "Start" | "Log Off *username*" menu item.

3. Making Bash Your Login Shell

Not required but highly recommended, one time only...

3.1. In an arizona terminal session, issue these commands to copy reasonable bash startup files to your home directory:

```
cd
cp /u/cs217/.bash_profile .
cp /u/cs217/.bashrc .
```

3.2. Suggestion: Examine the .bashrc and .bash_profile files.

3.3. Issue the "chsh" command.

Type your UNIX password.

Type “/usr/princeton/bin/bash” as the executable file to use as your login shell. **Type carefully and double check before pressing the Enter key!**

3.4. Log out of arizona, wait a few minutes for the chsh command to take effect, and log back in.

4. Configuring the Emacs Editor

Not required but highly recommended, one time only...

4.1. In an arizona terminal session, issue these commands to copy a reasonable Emacs startup file to your home directory:

```
cd
cp /u/cs217/.emacs .
```

4.2. Suggestion: Examine the .emacs file.

5. Configuring the Pine Newsgroup Tool

The course newsgroup is “pu.cs.217” on server “news.princeton.edu”. You must have access to it.

You need not use pine to access the newsgroup; any newsgroup reader/writer will suffice. If you wish to use pine, then one time only...

5.1. In an arizona terminal session, issue the “pine” command.

5.2. In pine...

- Type your Princeton user name when prompted.
- Type your UNIX password when prompted.
- Type M to go to the main menu.
- Type S (for setup).
- Type C (for configure).
- Type arrow keys to select nntp-server, and type Enter.
- Type C (for change).
- Type news.princeton.edu.
- Type E to exit setup.
- Type M to go to the main menu.
- Type L (for folder list).
- Type arrow keys to select “News on news.princeton.edu”, and type Enter.
- Type A (for Add).
- Type pu.cs.217.
- Type Q (for quit).

Then, to read or write newsgroup postings...

5.3. In an arizona terminal session, issue the “pine” command.

5.4. In pine...

- Type M to go to the main menu.
- Type L.
- Type arrow keys to select “News on news.princeton.edu”, and type Enter.
- Type arrow keys to select pu.cs.217, and type Enter.
- Use the commands listed on the menu to read and write postings.
- Type Q (for quit).

6. Printing a Text File

6.1. Using your own Microsoft Windows computer:

- 6.1.1. Launch the SSH Secure File Transfer Client.
Double-click on the SSH Secure File Transfer desktop icon.
- 6.1.2. Log into arizona via the SSH Secure File Transfer Client.
As you would log in via the SSH Secure Shell Client.
- 6.1.3. Download the file to your local file system.
In the SSH Secure File Transfer Client...
Use the left pane to select the appropriate source directory.
Use the right pane to select the source file.
Click on the down arrow icon.
In the dialog box, select a destination directory.
Wait for the download to complete.
- 6.1.4. Log out of arizona.
In the SSH Secure File Transfer Client...
Click on File | Disconnect.
- 6.1.5. Exit the SSH Secure File Transfer Client.
- 6.1.6. Print the local file, as you would any other local file.

6.2. Using a Computer in the Friend Center 016 Lab:

- 6.2.1. In an arizona terminal session, issue one of these commands:

```
lpr -P xefriend016d filename (for ordinary printing)
```

```
enscript -2rC -P xefriend016d filename (for "2-up" printing with line numbers)
```


Note: You can omit the "-P xefriend016d" option if the PRINTER environment variable is set to xefriend016d.
- 6.2.2. On the Print Release Station (i.e. the computer located near the printer)...
Type your user id and Windows NT password.
In the list box, select a file from your print queue.
Click the "Print" button.
Click the "Logoff" button.

6.3. Using a Computer in the Friend Center 017 Lab:

- 6.3.1. In an arizona terminal session, issue one of these commands:

```
lpr -P xefriend017d filename
```

```
enscript -2rC -P xefriend017d filename (for "2-up" printing with line numbers)
```


Note: You can omit the "-P xefriend017d" option if the PRINTER environment variable is set to xefriend017d.
- 6.3.2. On the Print Release Station (i.e. the computer located near the printer)...
Type your user id and Windows NT password.
In the list box, select a file from your print queue.
Click the "Print" button.
Click the "Logoff" button.