

Networking Server Worksheet

Add Servers to Your VMs

In this worksheet you will start server applications that respond to requests from clients on the LAN.

Simple Python-based Webserver

In many ways the simplest server to set up is a web server which responds to HTTP requests on TCP port 80. (Setting up a meaningful website, for the server to serve, is a separate topic.)

1. Start your Linux VM, and login.
2. Run the command:

```
python -m SimpleHTTPServer 8000
```

This starts a simple, Python-language webserver that listens on TCP port 8000. You could also listen on the standard web port, which is 80, but you need administrator permissions to do this.

3. Start a web browser on your Windows VM. Browse to **http://192.168.b.3:8000** --- replace the "192.168.b.3" with the IP address for your Linux VM.

You should see a listing of your Linux VM's home directory.


4. Would you say this is a safe, secure webserver?



Windows FTP Server


FTP (File Transfer Protocol) is one of the earliest network applications. It is designed to efficiently transfer files between network hosts. Windows includes an FTP server, although it is not enabled by default.

1. Start your Windows VM, and login.
2. Select the Start Button → Control Panel → Programs → Programs and Features, and select "Turn Windows features on or off".

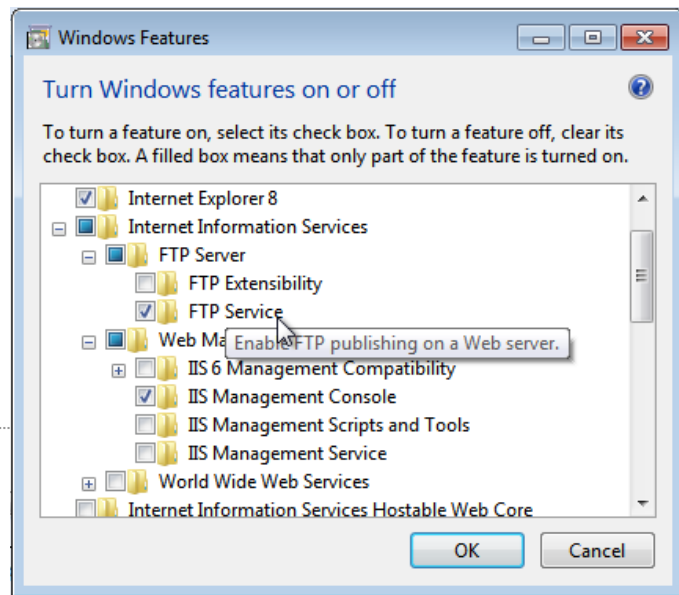
3. In the dialog window, click on the  next to "Internet Information Services" to expand the choices. See the screen capture on the right.

Expand the "FTP Server" choice, and select "FTP Service".

Expand the "Web Management Tools" choice, and select "IIS Management Console".

Click on .

Restart the computer.




4. After logging back into Windows, Click the Start Button and enter "iis" in the search box at the bottom. You should see "Internet Information Services (IIS) Manager" offered as a program; click on this to start it.

5. Right-click on the machine listed under "Connections" in the left pane. (This machine may be named "JOE-PC".)


Choose "Add FTP Site..."

6. Enter "FTP-**x**" as the FTP site name. Replace the value "**x**" with the last part of your physical host's IP address.


7. Click on the  next to the Physical path box. Browse to Local Disk (C:) → inetpub → ftproot, then click on .

Click on .

8. In the next dialog box, select "No SSL".

Click on .

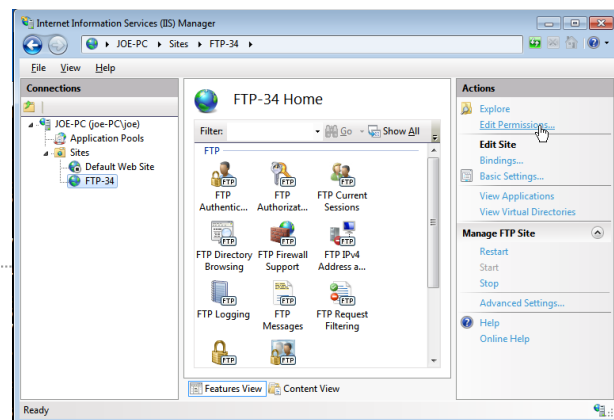
9. In the next dialog box, select "Anonymous" and "Basic". Then set "Allow access to:" to "Anonymous users"; set "Permissions" to "Read" and "Write".

Click on .

10. In the lefthand pane of the IIS Manager, under Connections, click on the "FTP-**x**" line under "Sites". See the screen capture at right.

In the righthand pane of the IIS Manager, under Actions, click on the "Edit Permissions..." line. This should open the "ftproot Properties" window.

11. On the "ftproot Properties" General tab, uncheck the "Read-only" attribute. Then click on .



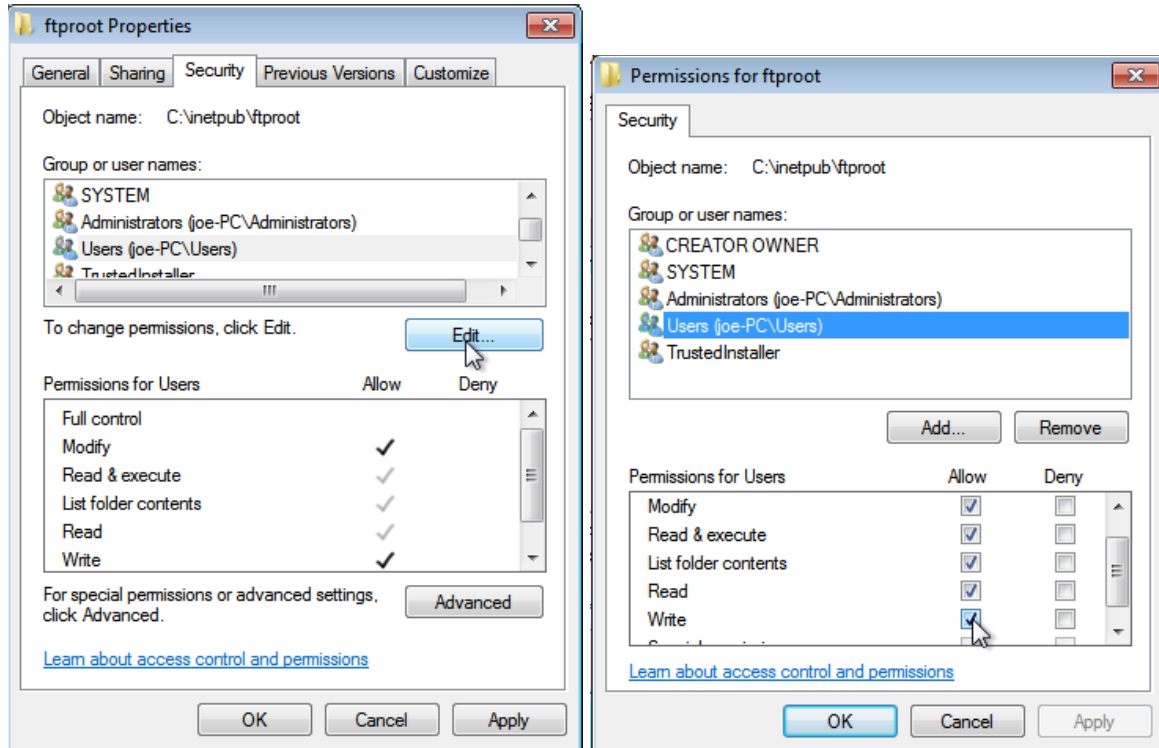
12. Click on the "ftproot Properties" Security tab.

Under "Group or user names:", select the Users line. Then click the "Edit" button. This will open the "Permissions for ftproot" window.

Under "Group or user names:", select the Users line.

Under "Permissions for Users", check the boxes to allow "Modify" and "Write". Then click on **OK**.

Click on **OK** in the "ftproot Properties" window.



13. Close the IIS Manager window.

14. Select the Start Button → Control Panel → System and Security → Windows Firewall.

Select "Advanced Settings" on the left.

Select "Inbound Rules" on the upper left.

15. Scroll down to find "FTP Server (In)".

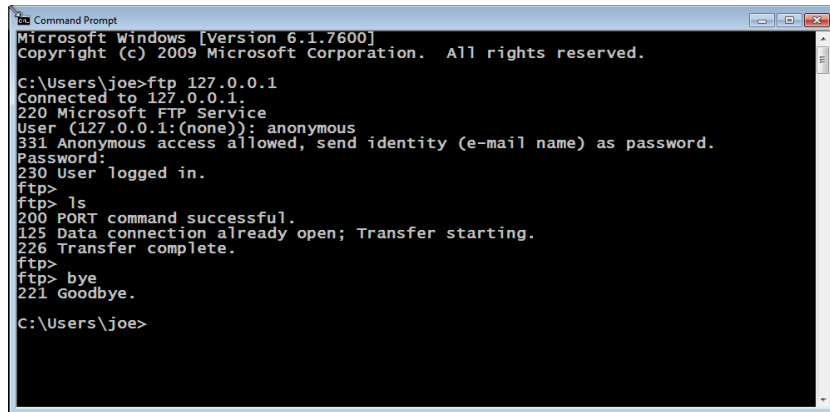
Click (or right-click) on "FTP Server (In)".

Choose "Enable rule" on the right.

16. Check your FTP server by opening a command prompt. Run the command:

```
ftp 127.0.0.1
```

The server should prompt you for a User name, then a password: enter the username "**anonymous**" and password "**user**" (actually, any password is accepted but courtesy say to provide your email address).



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\joe>ftp 127.0.0.1
Connected to 127.0.0.1.
220 Microsoft FTP Service
User (127.0.0.1:(none)): anonymous
331 Anonymous access allowed, send identity (e-mail name) as password.
Password:
230 User logged in.
ftp>
ftp> ls
200 PORT command successful.
125 Data connection already open; Transfer starting.
226 Transfer complete.
ftp>
ftp> bye
221 Goodbye.

C:\Users\joe>
```

Enter the command **bye** to terminate the ftp session.

17. Create a small file on your Linux host — it can have anything you want in it. Give it a short and easy-to-type name.
18. Use a terminal on your Linux VM to run the command:

```
ftp 192.168.b.2
```

Replace the "192.168.b.2" with the IP address for your Windows VM.

19. Enter the username "**anonymous**" and password "**user**".

Enter the command **ls** to see what's on the server.

20. Enter the command **put <filename>** to upload the file you created to the server. Replace **<filename>** with the name of your file.

Enter the command **ls** again. Did it upload?

21. Enter the command **bye** to terminate the ftp session.

Congratulations! You've set up your servers.

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