



Cisco Networking  
Academy Workshop 2007  
Shah Alam  
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## Introduction to Eagle Server



# Eagle Server Introduction



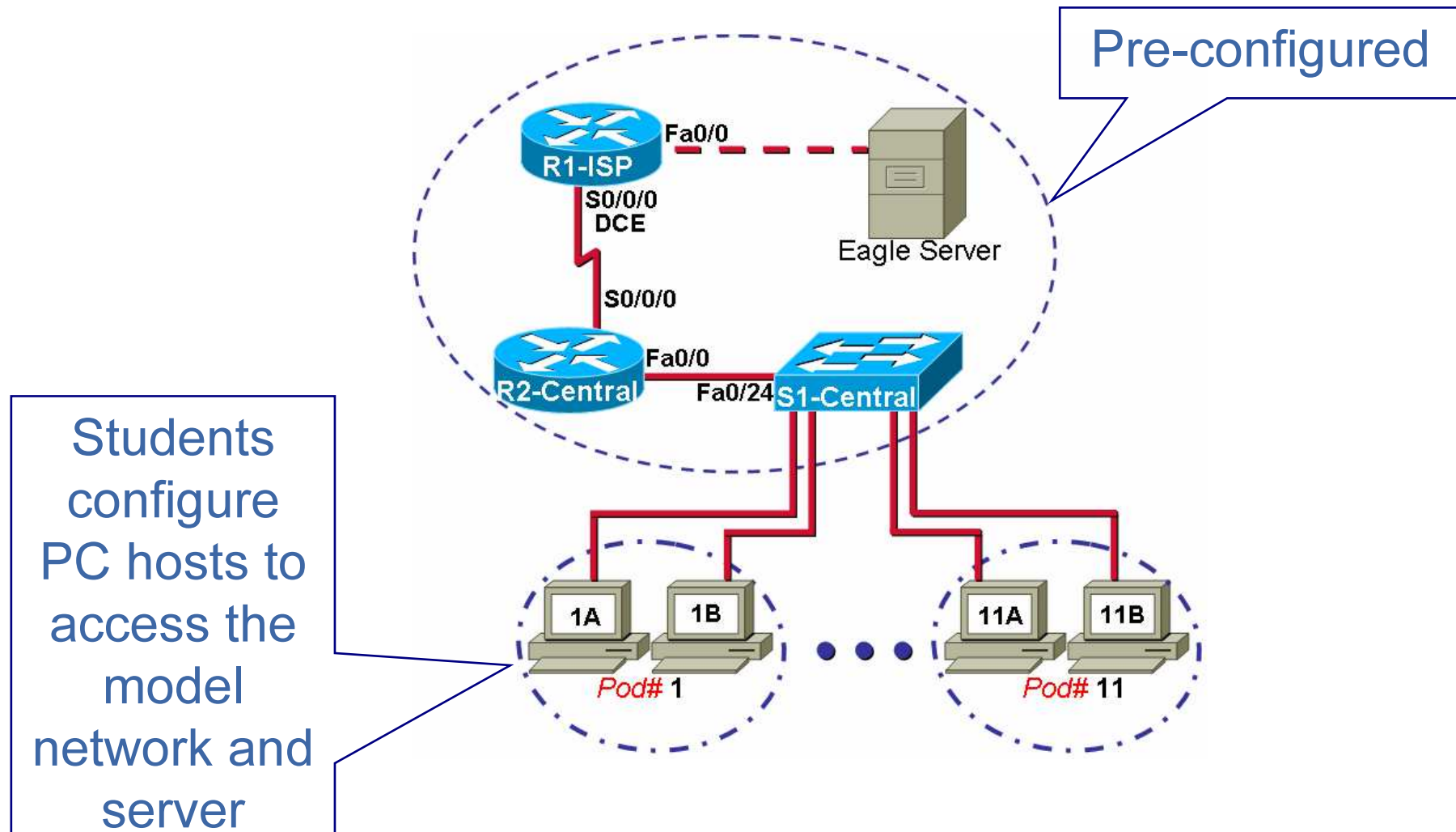
- Concept & Overview
- Installation Options & Process
- Services & Software
- Documentation
- Labs

# Eagle Server Concept



Students can access and use applications and services in the Lab as if on the Internet

# Eagle Server Topology



# Overview

Top-down approach in Exploration Network Fundamentals presents students with the opportunity to experience the setting up and implementing of Application layer services in a network lab environment.

A key part of the e-Doing in Exploration Network Fundamentals is basing Chapter 1 to 9 hands-on labs on a model Internet that uses a local server to provide a range of network services and applications that students can experience in the lab environment

# Where to get Eagle Server

Eagle Server is available to Cisco Networking Academies from Tools on Academy Connection.

This is a downloadable an ISO image that is then written to a CD-ROM as an image (not data).

# Four Options

1. Bootable CD-ROM downloadable as an ISO image
  - 1.1 Run from the CD
  - 1.2 Run as a permanently installed server on a PC
2. Downloadable VMware image
  - 2.3 Run from the image in RAM
  - In the future -*
  - 2.4 Run as a virtual server installed on a PC hard disk drive

# Option 1

## 1.1 Bootable CD-ROM (ISO) - Run from the CD

The CD contains a bootable Linux file system.

Runs network services directly from RAM on the PC on which it boots.

Very Flexible:

- PC lab resources can be shared with non-CCNA classes or courses.
- Any available PC meeting the specifications can temporarily act as the server for the duration of the class.

But:

- Any modifications made to the Server are lost when the computer is rebooted.



# Option 2

## 1.2 Permanent Server

The file system may be installed on a Linux or Windows FAT partition on the hard disk drive of a PC available to be permanently used as the server.

- A permanent installation enables any modifications made to the server to be retained when the computer is rebooted and re-used in later labs.
- Facilitates local server development and customization.
- Enables local backup copies of IOS images, configurations and class resources to be stored for future use.

But:

- Requires dedicated PC or partition on a PC hard drive.

# Option 3

## 2.1 Run from the saved VMware image

Compressed VMware image (RAR file) of server ISO

Downloaded and deployed using VMware.

Enables use of different lab and classroom computer resources that are available at different times.

The server runs as virtual server on a PC running VMware Player.

Very flexible, but:

- Requires VMware Player to be installed and running on PC
- Changes made to the server do not persist when the virtual server is restarted.

# Option 4

2.2 Run as a virtual server installed on a PC hard disk drive

## FUTURE OPTION UNDER DEVELOPMENT

Download compressed VMware image of Eagle Server Development Environment.

Note: The compressed file size is approximately 2.75GB, and includes two VMware hard disk drives.

Any changes to the server are retained when it is restarted.

But:

- Requires dedicated PC or partition on a PC hard drive.

# Eagle Server Minimum Requirements

CPU:	Minimum Pentium 3 or equivalent Pentium 4 or equivalent recommended
RAM:	Minimum 512 MB 1 GB recommended
HDD:	Minimum 15 GB 4 GB required to install Eagle-server on HDD.
CD-ROM:	Minimum 10x CD-ROM Minimum 30x CD-ROM to run from RAM
NIC:	1
OS:	Minimum Microsoft Windows 2000

## Before Starting

1. Eagle Server supports only 1 network interface card, **eth0**.
  - Disable built-in wireless NICs in BIOS.
  - Cable only **eth0** if multiple wired NICs exist.
2. Power sequencing is important
  - Configure, at a minimum, router R1-ISP interface Fa0/0 with IP address 192.168.254.253, mask 255.255.255.0 and issue **no shutdown**.
  - Connect a crossover cable between R1-ISP Fa0/0 and the server NIC.
  - Power on the router first before starting Eagle Server.

## Eagle Server Setup: Running from CD

- Ensure PC is set to boot from the CD-ROM first. Change BIOS settings if necessary.
- Place the Eagle Server CD into the tray of the PC.
- Restart the PC.
- At the Exploration Server prompt, press **<ENTER>** to boot.
- After the drivers and settings are loaded, select option "1" to run the Linux software program from the CD and RAM.
- Eagle server software has a pre-configured IP address of 192.168.254.254.

## Eagle Server Setup: Dedicated Server

- Create and format a 4 GB FAT file system partition (not NTFS) on a MS Window PC hard drive.
- Reboot from the Eagle Server CD.
- At the opening screen press **<ENTER>** . This will load the Linux kernel.
- Type menu option **installonFAT**. Follow the instructions that are displayed. The installation will take approximately 15 minutes, depending on the speed of the CD.
- Leave the CD in the tray, required to access the server partition when the computer is rebooted.
- When the server is rebooted, press **<ENTER>** and type menu option **runondisk**.

## Eagle Server Setup: VMware from Image

- Download and install the latest version of VMWare Player from URL:  
<http://www.vmware.com/download/player/>
- Download Eagle-Server-*version*.rar
- Open the file in Winrar or Winzip, and drag the Eagle-Server folder to the computer's desktop
- Double-click on folder Eagle-Server
- Double-click on the VMWare configuration file, Eagle\_Server.vmx

This will start Eagle Server inside VMWare.

Note: Changes will not be persistent because the VMWare image is in ISO format.



# Services Provided

- Domain Name Service
- HTTP Web Server
- Wiki & Web logs (blogging)
- Instant Messaging / IRC
- Email
- FTP
- TFTP
- SSH

# Eagle Server Name Service

Eagle Server primary network is 192.168.254.0 /24 on `eth0`

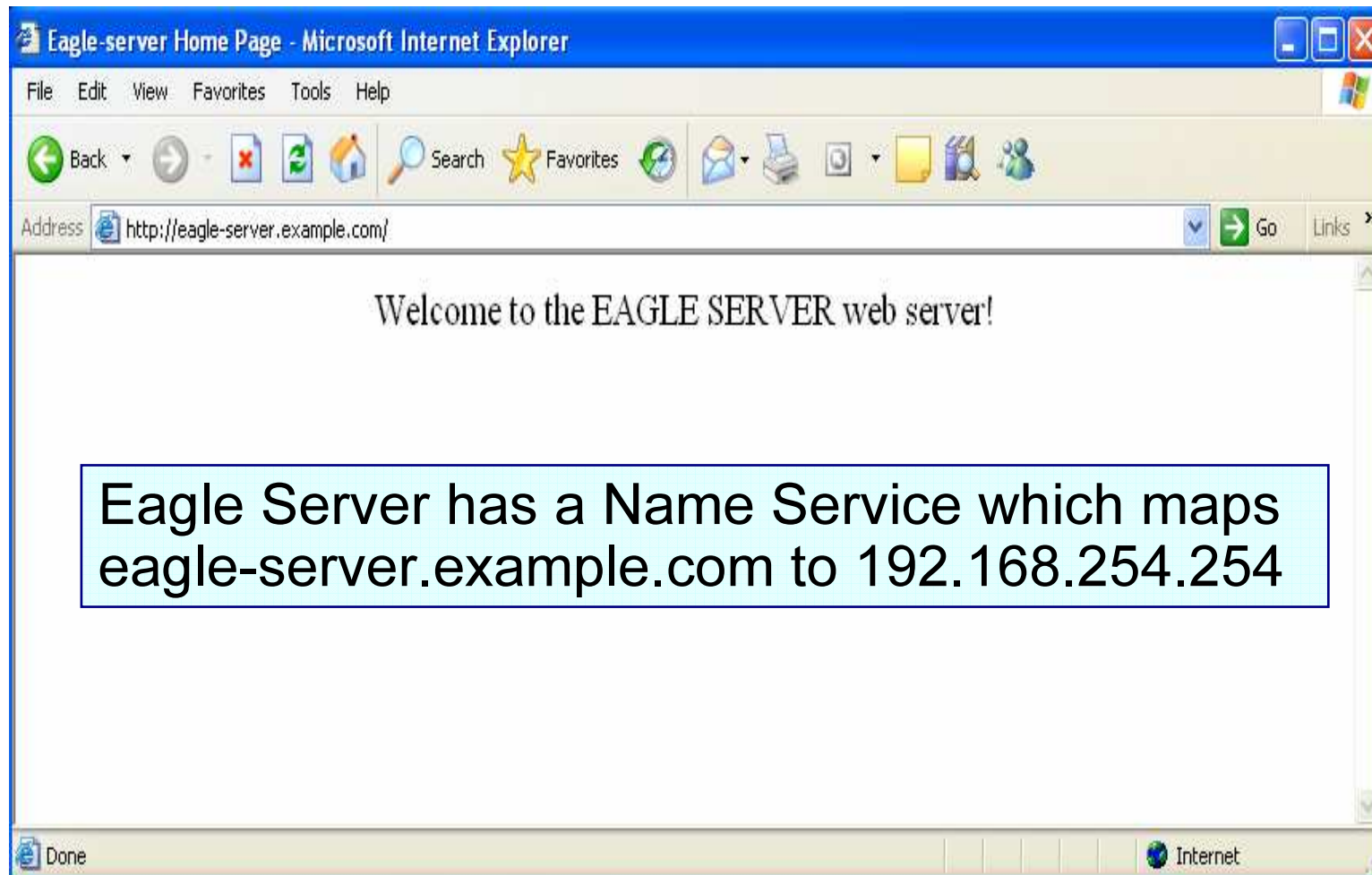
NAME	IP ADDRESS
<code>eagle-server.example.com</code>	<code>192.168.254.254</code>
<code>r1-isp</code>	<code>192.168.254.253</code>
<code>r2-central</code>	<code>172.16.255.254</code>
<code>s1-central</code>	<code>172.16.254.1</code>
<code>host1a-example.com</code>	<code>172.16.1.1*</code>
<code>host1b-example.com</code>	<code>172.16.1.2*</code>
<code>host2a-example.com</code>	<code>172.16.2.1*</code>
<code>host2b-example.com</code>	<code>172.16.2.2*</code>

*etc, to*

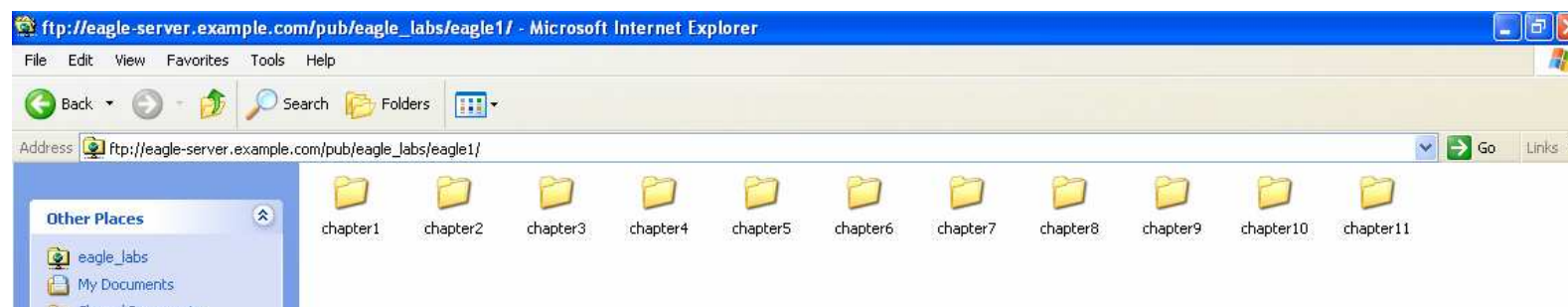
<code>host11b-example.com</code>	<code>172.16.11.2*</code>
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\* provided the student lab computer is configured for this IP Address

# Web Server Name Resolution



# Chapter FTP Resources



Eagle Server supports FTP access.

Instructors can put class files in `/var/ftp/pub/eagle_labs/` for student download.

Students can point a web browser at URL

`ftp://eagle-server.example.com/eagle_labs/eagle1/chapterX`  
and download material from the appropriate folder.

For example, folder `eagle1/chapter2` contains pcap files for Wireshark.

# TFTP & Configurations

Eagle Server is TFTP enabled.

- Instructors can use Eagle Server to backup IOS images or IOS configuration files for students to download to Cisco devices.
- As root, instructors can place files for TFTP transfer in `/tftpboot`
- Default device configurations include:
  - R1-ISP router connects to the Eagle server and has ip-name server configured to connect to allow access to the Eagle server via http.
  - R2-Central router has DHCP, DNS, usernames and passwords configured as well as privilege exec levels set for user access.
  - The S1-Central switch has usernames and passwords configured and privilege exec level settings.

# Access to Devices

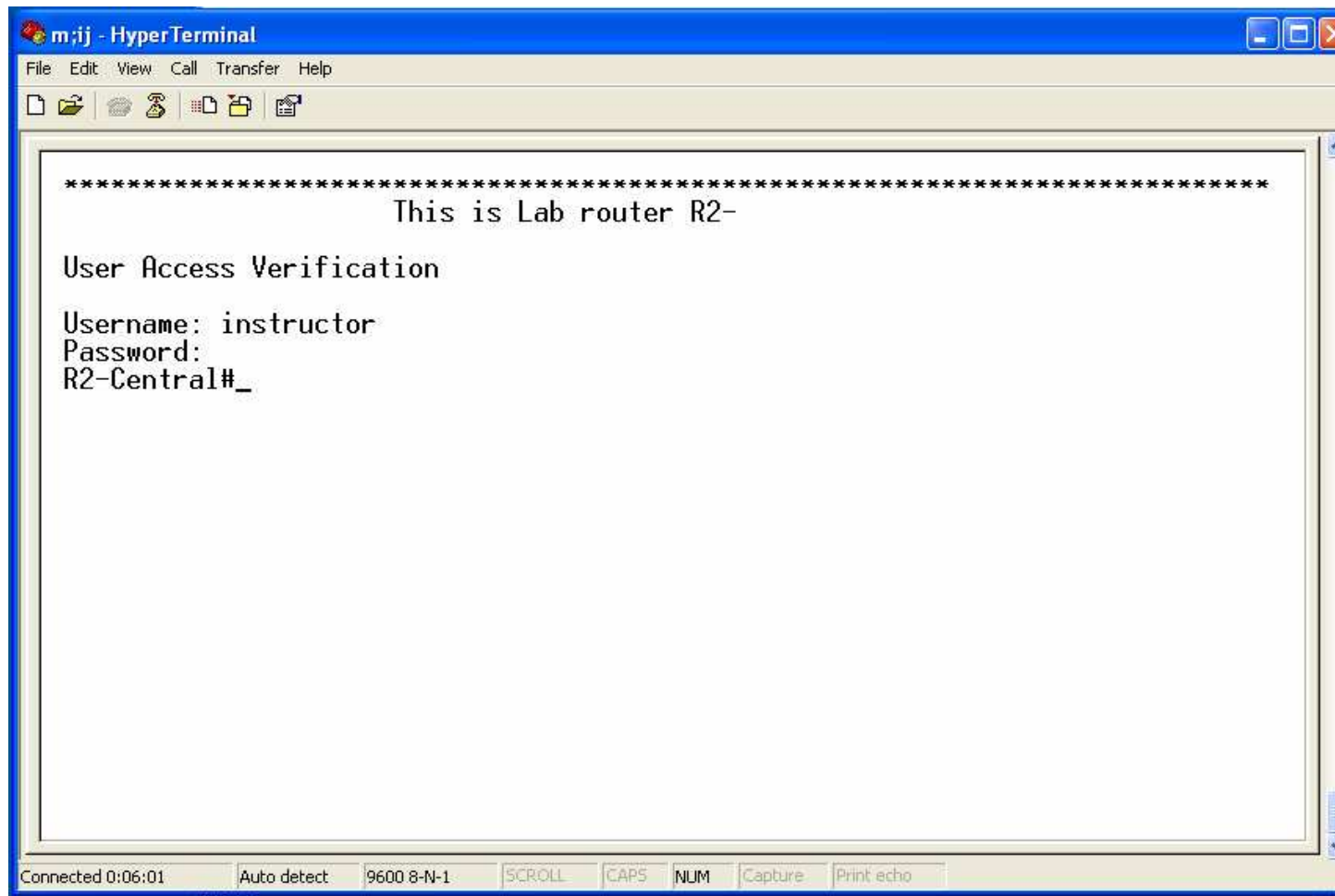
- Instructor access:

Console prompt on R2-Central will appear and ask for a username and password. Default settings are **instructor** and **cisco**. (You are encouraged to change the instructor password to prevent unauthorized access to the devices by students.)

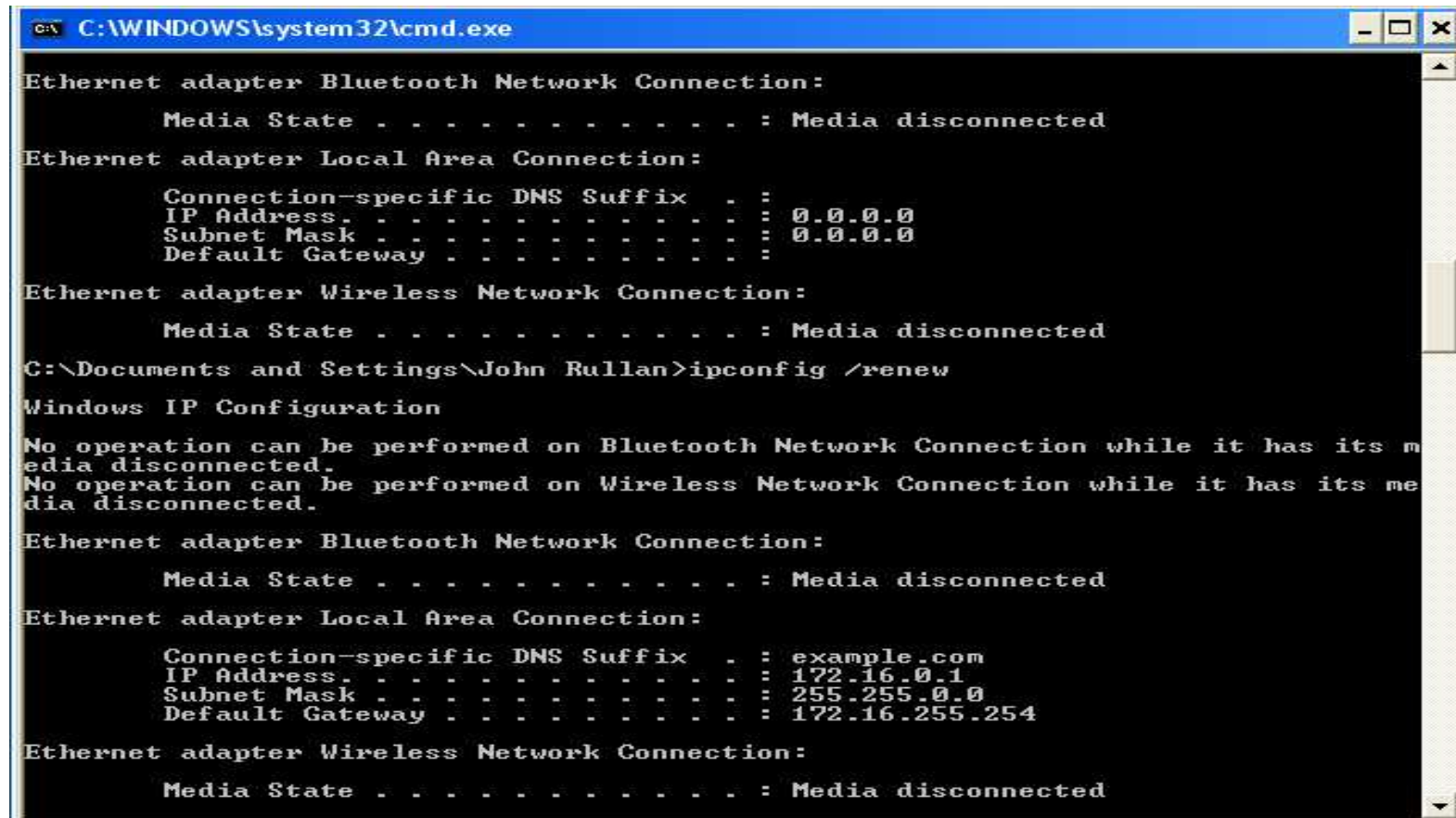
- Student access:

Certain labs will direct students to telnet to the devices and access is granted using **ccna** (pod #) and password **cisco**. Privilege exec setting will limit the commands that they have access to.

# Instructor Device Login Screen



# Student Connection to Topology



```
C:\WINDOWS\system32\cmd.exe

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . : 

Ethernet adapter Wireless Network Connection:

    Media State . . . . . : Media disconnected

C:\Documents and Settings\John Rullan>ipconfig /renew

Windows IP Configuration

No operation can be performed on Bluetooth Network Connection while it has its media disconnected.
No operation can be performed on Wireless Network Connection while it has its media disconnected.

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : example.com
    IP Address . . . . . : 172.16.0.1
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 172.16.255.254

Ethernet adapter Wireless Network Connection:

    Media State . . . . . : Media disconnected
```

With DHCP enabled on the PC, at the command prompt students type `ipconfig /release`, then `ipconfig /renew` to pull an address from the R2-Central router.

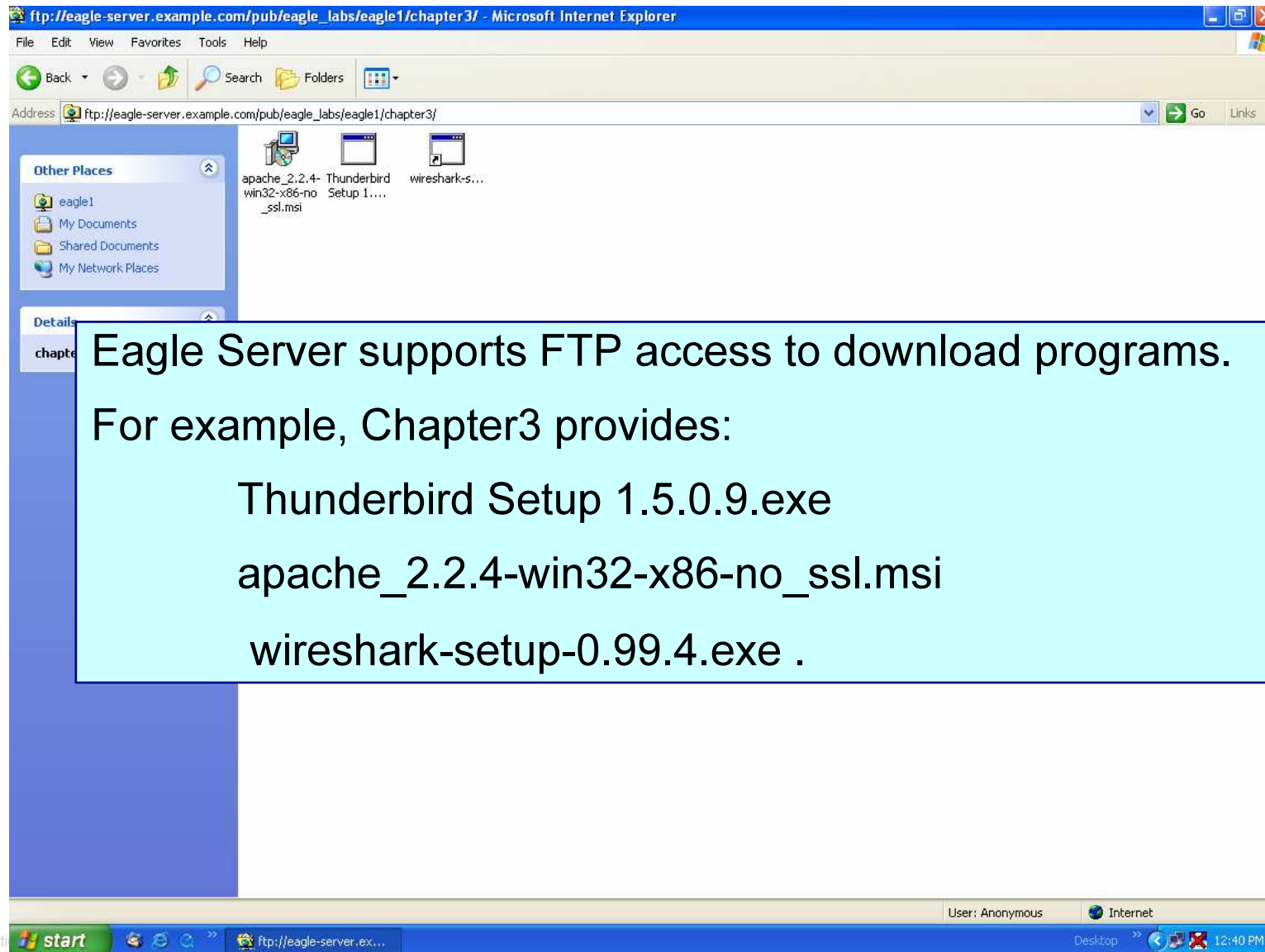


# Software Downloadable from Eagle Server

- Wireshark (formerly Ethereal)
- Apache Web Server
- TWiki
- Gaim (Internet Messenger)
- Mozilla Thunderbird
- \*SolarWinds TFTP Server
- \*TeraTerm

\* Must be downloaded from Internet then uploaded to Eagle Server

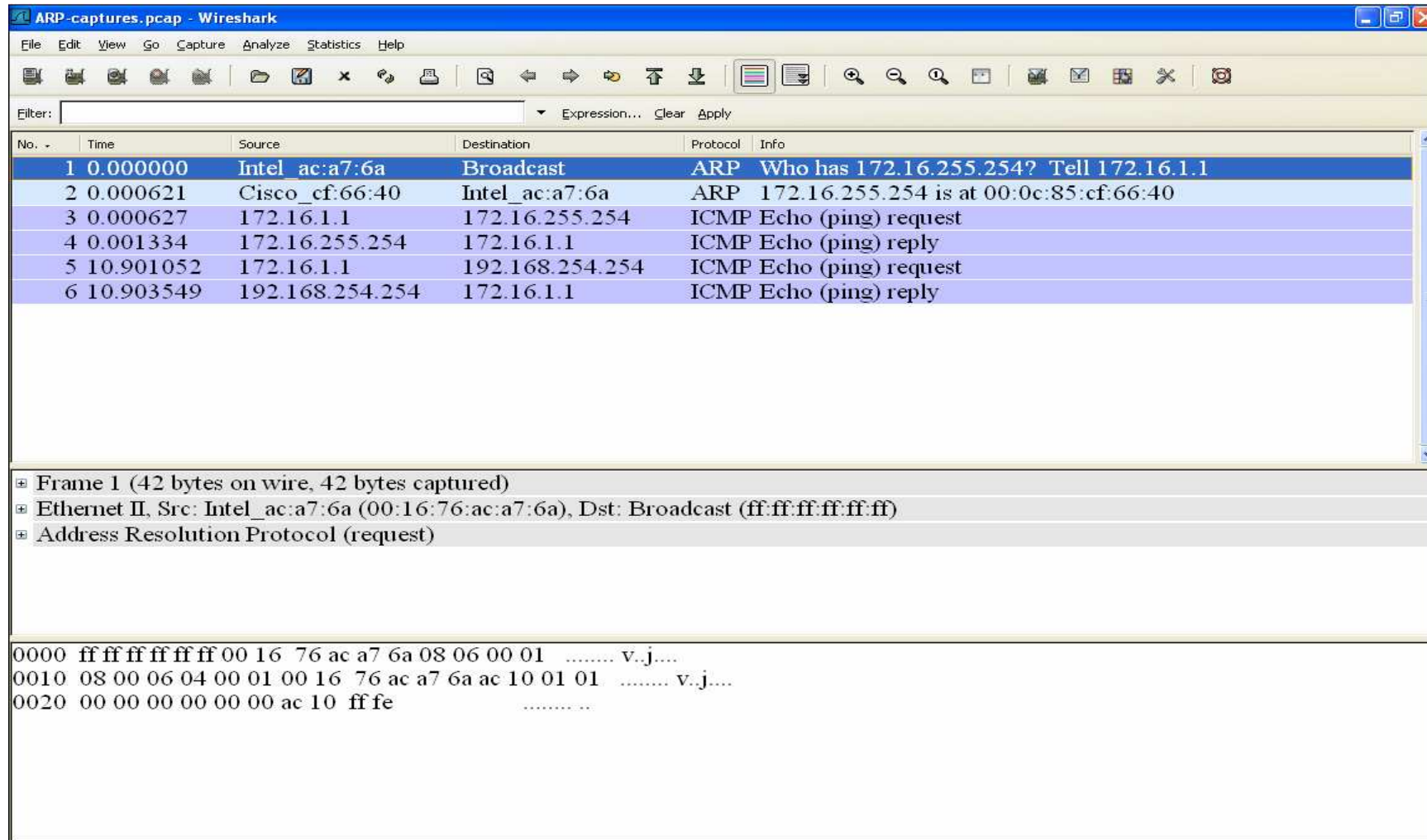
# Chapter Downloadable Programs



# Wireshark

- Formerly known as Ethereal
- Packet sniffing software.
- Demonstrates TCP and UDP port numbers.
- Source and destination IP and MAC addresses.
- Displays FTP, HTTP, DNS, ICMP and ARP transactions.

# PING/ARP Captures



The image shows a Wireshark packet capture window titled "ARP-captures.pcap - Wireshark". The interface includes a menu bar (File, Edit, View, Go, Capture, Analyze, Statistics, Help), a toolbar with various icons, and a filter field. The main display area shows a list of six captured packets. The first packet is an ARP request from Intel\_ac:a7:6a to Broadcast for 172.16.255.254. The second packet is an ARP reply from Cisco\_cf:66:40 to Intel\_ac:a7:6a for 172.16.255.254. The third and fourth packets are ICMP Echo (ping) request and reply between 172.16.1.1 and 172.16.255.254. The fifth and sixth packets are ICMP Echo (ping) request and reply between 172.16.1.1 and 192.168.254.254. Below the packet list, the details of the first packet are expanded, showing it is an Ethernet II frame with source Intel\_ac:a7:6a and destination Broadcast, containing an Address Resolution Protocol (request) packet. The packet bytes are displayed in hexadecimal and ASCII format.

No.	Time	Source	Destination	Protocol	Info
1	0.000000	Intel_ac:a7:6a	Broadcast	ARP	Who has 172.16.255.254? Tell 172.16.1.1
2	0.000621	Cisco_cf:66:40	Intel_ac:a7:6a	ARP	172.16.255.254 is at 00:0c:85:cf:66:40
3	0.000627	172.16.1.1	172.16.255.254	ICMP Echo (ping)	request
4	0.001334	172.16.255.254	172.16.1.1	ICMP Echo (ping)	reply
5	10.901052	172.16.1.1	192.168.254.254	ICMP Echo (ping)	request
6	10.903549	192.168.254.254	172.16.1.1	ICMP Echo (ping)	reply

Frame 1 (42 bytes on wire, 42 bytes captured)  
Ethernet II, Src: Intel\_ac:a7:6a (00:16:76:ac:a7:6a), Dst: Broadcast (ff:ff:ff:ff:ff:ff)  
Address Resolution Protocol (request)

0000 ff ff ff ff ff 00 16 76 ac a7 6a 08 06 00 01 ..... v.j....  
0010 08 00 06 04 00 01 00 16 76 ac a7 6a ac 10 01 01 ..... v.j....  
0020 00 00 00 00 00 00 ac 10 ff fe .....

# STP/FTP/TCP Captures

ftptoeagle-server.pcap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
16	18.000298	Cisco_9f:6c:c9	Spanning-tree-(fo	STP	Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
17	19.821469	192.168.254.254	10.1.1.1	FTP	Response: 220 Welcome to the eagle-server FTP service.
18	20.000321	Cisco_9f:6c:c9	Spanning-tree-(fo	STP	Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
19	20.026986	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] Seq=1 Ack=47 Win=65489 Len=0
20	21.473545	10.1.1.1	192.168.254.254	FTP	Request: USER cisco
21	21.474149	192.168.254.254	10.1.1.1	TCP	ftp > 1072 [ACK] Seq=47 Ack=13 Win=5840 Len=0
22	21.474246	192.168.254.254	10.1.1.1	FTP	Response: 331 Please specify the password.
23	21.667654	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] Seq=13 Ack=81 Win=65455 Len=0
24	22.000352	Cisco_9f:6c:c9	Spanning-tree-(fo	STP	Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
25	22.604190	10.1.1.1	192.168.254.254	FTP	Request: PASS cisco
26	22.611427	192.168.254.254	10.1.1.1	FTP	Response: 230 Login successful.
27	22.761431	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] Seq=25 Ack=104 Win=65432 Len=0
28	23.610262	10.1.1.1	192.168.254.254	FTP	Request: PORT 10,1,1,1,4,50
29	23.610924	192.168.254.254	10.1.1.1	FTP	Response: 200 PORT command successful. Consider using PASV.
30	23.611699	10.1.1.1	192.168.254.254	FTP	Request: NLST

Frame 25 (66 bytes on wire, 66 bytes captured)

Ethernet II, Src: QuantaCo\_bd:0c:7c (00:c0:9f:bd:0c:7c), Dst: Cisco\_cf:66:40 (00:0c:85:cf:66:40)

Internet Protocol, Src: 10.1.1.1 (10.1.1.1), Dst: 192.168.254.254 (192.168.254.254)

Transmission Control Protocol, Src Port: 1072 (1072), Dst Port: ftp (21), Seq: 13, Ack: 81, Len: 12

File Transfer Protocol (FTP)

```

0000 00 0c 85 cf 66 40 00 c0 9f bd 0c 7c 08 00 45 00 ....f@...E.
0010 00 34 01 25 40 00 80 06 2e f6 0a 01 01 01 c0 a8 .4.%@.....
0020 fe fe 04 30 00 15 53 dd 8f 98 3a 26 01 7a 50 18 ...0..S. ...&.zP.
0030 ff af 24 28 00 00 50 41 53 53 20 63 69 73 63 6f ..$(.PA SS cisco
0040 0d 0a

```



# Detailed Capture

The image shows a Wireshark packet capture window titled "ftptoeagle-server[1].pcap - Wireshark". The interface includes a menu bar (File, Edit, View, Go, Capture, Analyze, Statistics, Help), a toolbar with various icons, and a filter bar. The main display area shows a list of 51 network packets. The first 30 packets are filtered by the expression "Spanning-tree-protocol". The packets show an FTP session between 192.168.254.254 and 10.1.1.1. The session starts with a response from the server, followed by a spanning-tree protocol packet, then a series of FTP commands and responses: USER cisco, PASS cisco, LOGIN successful, PORT 10,1,1,4,50, and NLST. The session ends with a RETR nohup.out command and a response. The bottom of the window shows the packet details for the selected packet (Frame 1, 60 bytes on wire, 60 bytes captured) and the packet bytes displayed in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Info
17	19.821469	192.168.254.254	10.1.1.1	FTP	Response: 220 welcome to the eagle-server FTP service.
18	20.000321	Cisco_9f:6c:c9	192.168.254.254	STP	Spanning-tree-(for STP Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
19	20.026986	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] seq=1 Ack=47 win=65489 Len=0
20	21.473545	10.1.1.1	192.168.254.254	FTP	Request: USER cisco
21	21.474149	192.168.254.254	10.1.1.1	TCP	ftp > 1072 [ACK] seq=47 Ack=13 win=5840 Len=0
22	21.474246	192.168.254.254	10.1.1.1	FTP	Response: 331 Please specify the password.
23	21.667654	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] seq=13 Ack=81 win=65455 Len=0
24	22.000352	Cisco_9f:6c:c9	192.168.254.254	STP	Spanning-tree-(for STP Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
25	22.604190	10.1.1.1	192.168.254.254	FTP	Request: PASS cisco
26	22.611427	192.168.254.254	10.1.1.1	FTP	Response: 230 Login successful.
27	22.761431	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] seq=25 Ack=104 win=65432 Len=0
28	23.610262	10.1.1.1	192.168.254.254	FTP	Request: PORT 10,1,1,4,50
29	23.610924	192.168.254.254	10.1.1.1	FTP	Response: 200 PORT command successful. Consider using PASV.
30	23.611699	10.1.1.1	192.168.254.254	FTP	Request: NLST
31	23.612245	192.168.254.254	10.1.1.1	TCP	ftp-data > 1074 [SYN] Seq=0 Len=0 MSS=1460 TSV=2181350 TSER=0 WS=2
32	23.612363	10.1.1.1	192.168.254.254	TCP	1074 > ftp-data [SYN, ACK] Seq=0 Ack=1 win=65535 Len=0 MSS=1260 WS=0 TSV=0 T
33	23.612856	192.168.254.254	10.1.1.1	TCP	ftp-data > 1074 [ACK] Seq=1 Ack=1 win=5840 Len=0 TSV=2181350 TSER=0
34	23.612889	192.168.254.254	10.1.1.1	FTP	Response: 150 Here comes the directory listing.
35	23.613058	192.168.254.254	10.1.1.1	FTP-DA	FTP Data: 38 bytes
36	23.613077	192.168.254.254	10.1.1.1	FTP	Response: 226 Directory send OK.
37	23.613095	10.1.1.1	192.168.254.254	TCP	1072 > ftp [ACK] Seq=51 Ack=218 win=65318 Len=0
38	23.613110	192.168.254.254	10.1.1.1	TCP	ftp-data > 1074 [FIN, ACK] Seq=39 Ack=1 win=5840 Len=0 TSV=2181351 TSER=0
39	23.613131	10.1.1.1	192.168.254.254	TCP	1074 > ftp-data [ACK] Seq=1 Ack=40 win=65497 Len=0 TSV=4715 TSER=2181350
40	23.614257	10.1.1.1	192.168.254.254	TCP	1074 > ftp-data [FIN, ACK] Seq=1 Ack=40 win=65497 Len=0 TSV=4715 TSER=2181350
41	23.614661	192.168.254.254	10.1.1.1	TCP	ftp-data > 1074 [ACK] Seq=40 Ack=2 win=5840 Len=0 TSV=2181352 TSER=4715
42	24.000384	Cisco_9f:6c:c9	192.168.254.254	STP	Spanning-tree-(for STP Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
43	24.264431	Cisco_9f:6c:c9	192.168.254.254	LOOP	Reply
44	26.000444	Cisco_9f:6c:c9	192.168.254.254	STP	Spanning-tree-(for STP Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
45	28.000454	Cisco_9f:6c:c9	192.168.254.254	STP	Spanning-tree-(for STP Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
46	30.000473	Cisco_9f:6c:c9	192.168.254.254	STP	Spanning-tree-(for STP Conf. Root = 32769/00:0f:f7:9f:6c:c0 Cost = 0 Port = 0x8009
47	30.869224	10.1.1.1	192.168.254.254	FTP	Request: PORT 10,1,1,4,51
48	30.869857	192.168.254.254	10.1.1.1	FTP	Response: 200 PORT command successful. Consider using PASV.
49	30.870634	10.1.1.1	192.168.254.254	FTP	Request: RETR nohup.out
50	30.871178	192.168.254.254	10.1.1.1	TCP	ftp-data > 1075 [SYN] Seq=0 Len=0 MSS=1460 TSV=2188610 TSER=0 WS=2
51	30.871280	10.1.1.1	192.168.254.254	TCP	1075 > ftp-data [SYN, ACK] Seq=0 Ack=1 win=65535 Len=0 MSS=1260 WS=0 TSV=0 T

Frame 1 (60 bytes on wire, 60 bytes captured)  
IEEE 802.3 Ethernet  
Logical-Link Control  
Spanning Tree Protocol

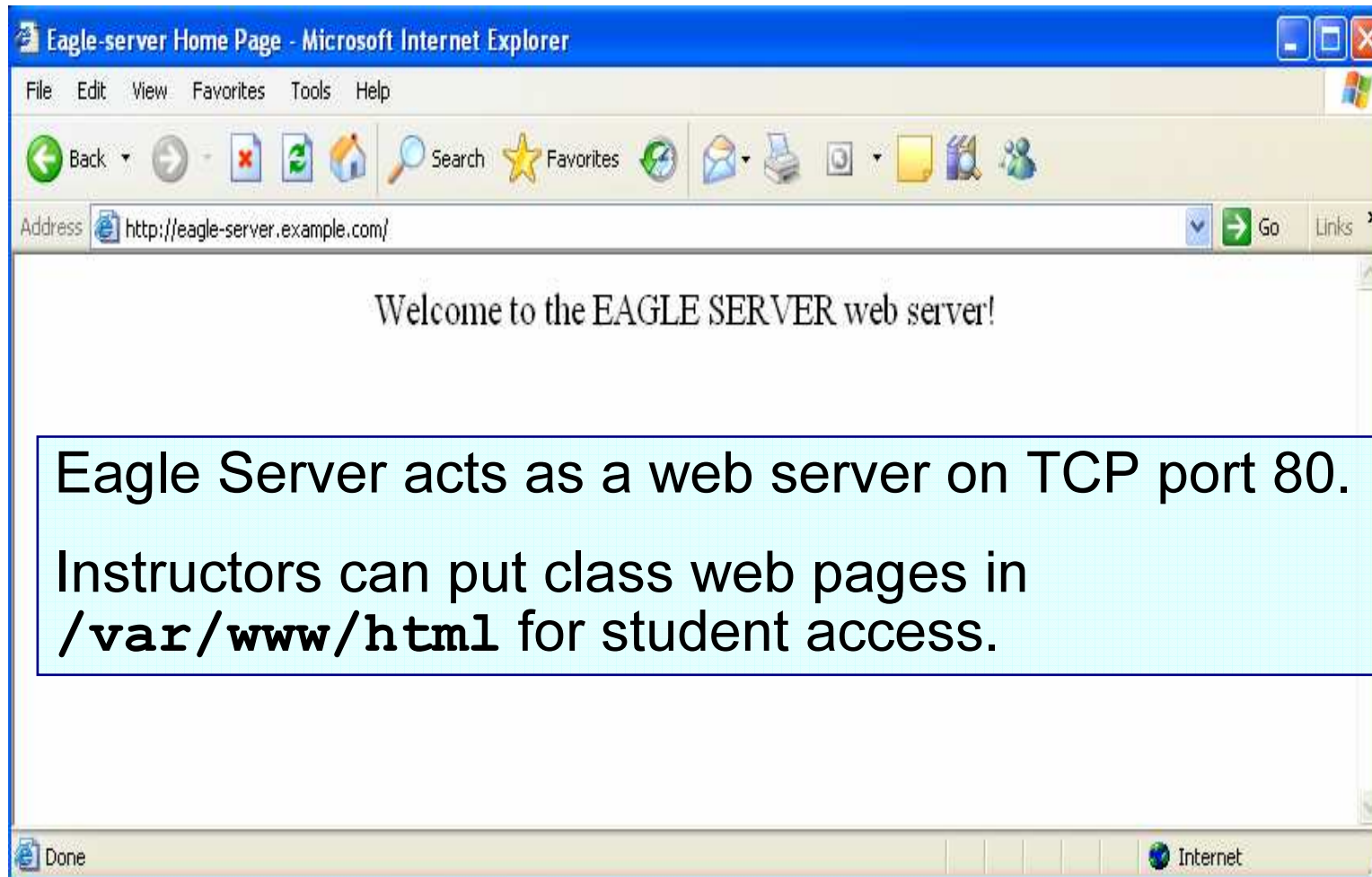
0010 03 00 00 00 00 00 80 01 00 0f f7 9f 6c c0 80 09 00 00 14 00 ..... 1.....  
0020 00 00 80 01 00 0f f7 9f 6c c0 80 09 00 00 14 00 ..... 1.....  
0030 02 00 0f 00 00 00 00 00 00 00 00 00 00 00 00 00 ..... .....

# Apache Web Server



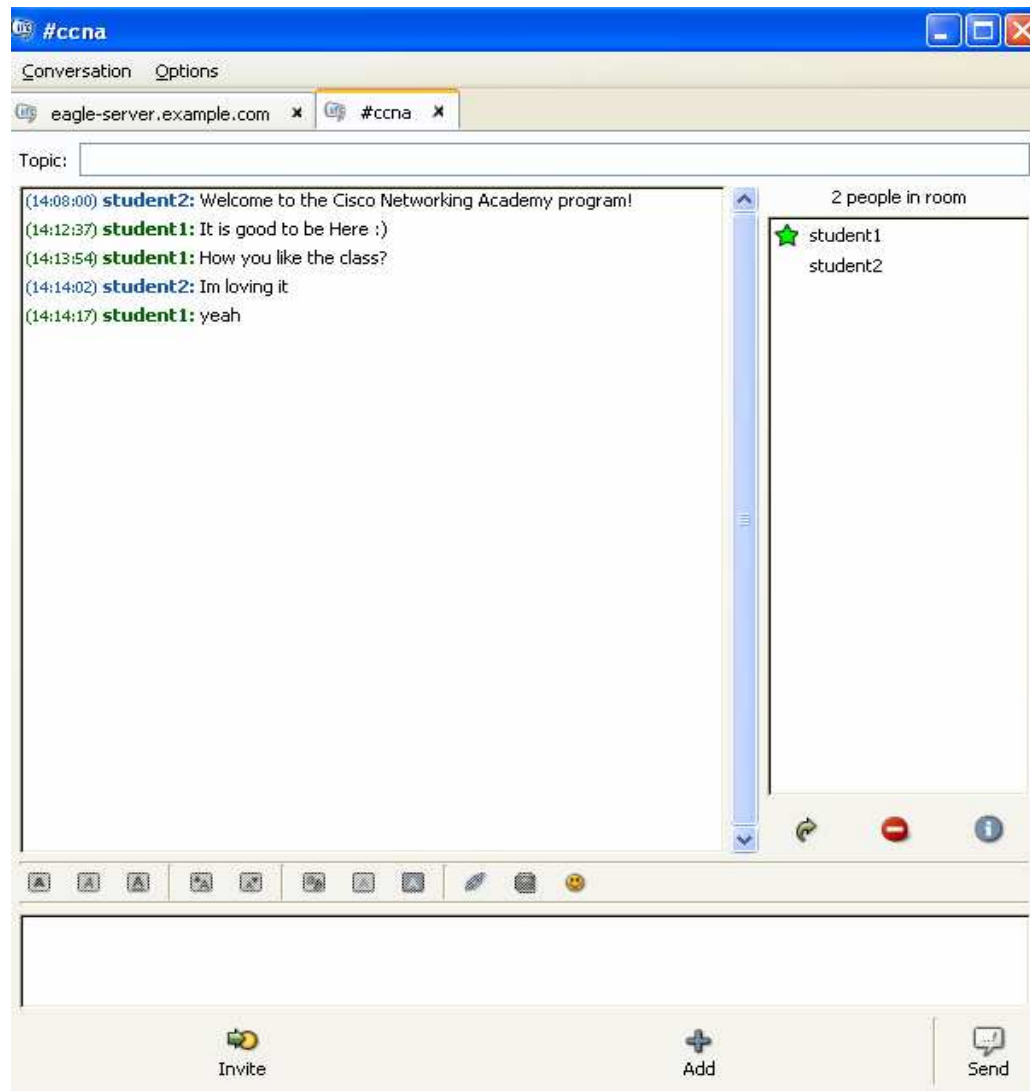
Apache is used with Wireshark to capture communications between a host and web server.

# Web Server Access to Eagle Server



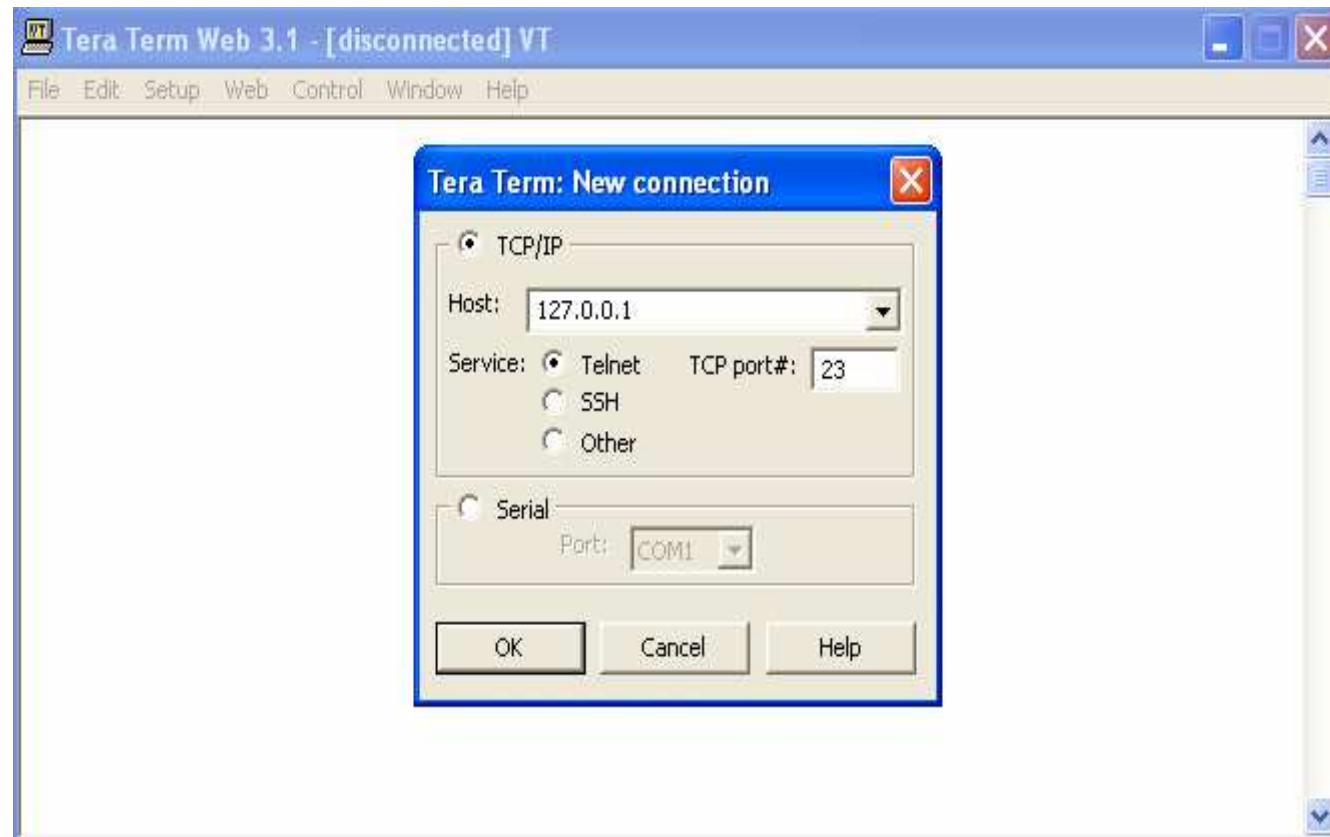


# Gaim



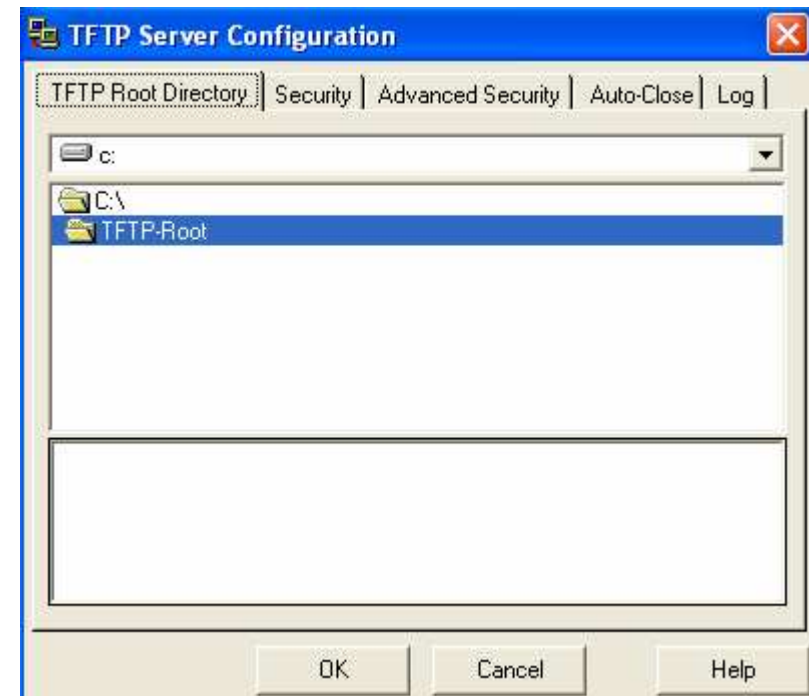
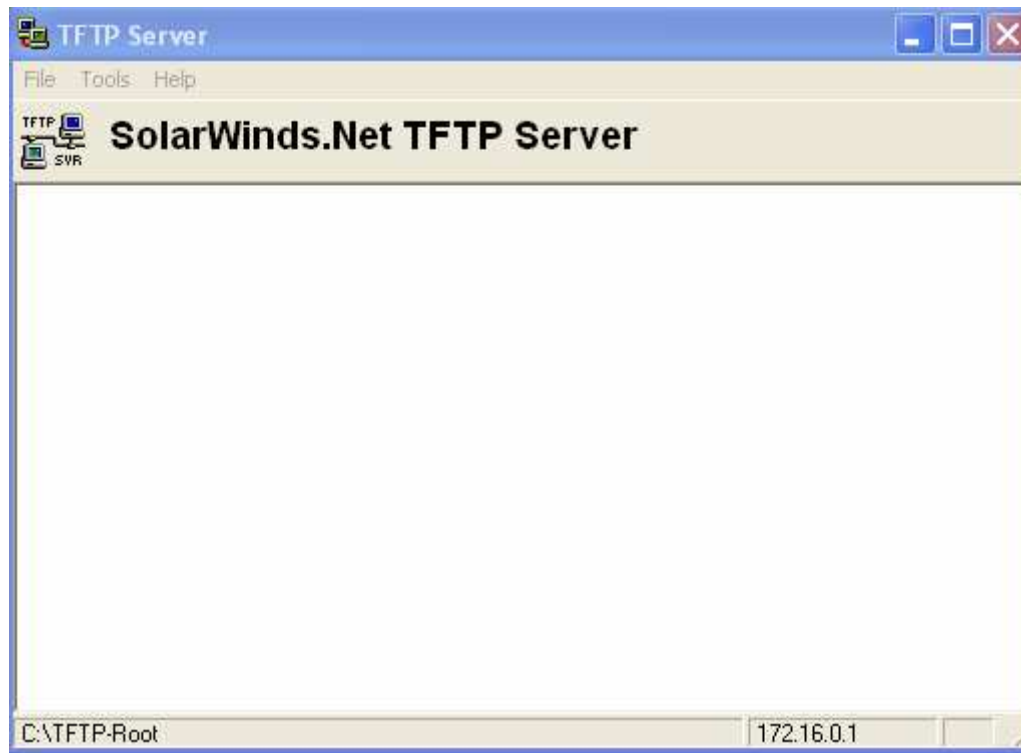
## Instant Messaging

# TeraTerm



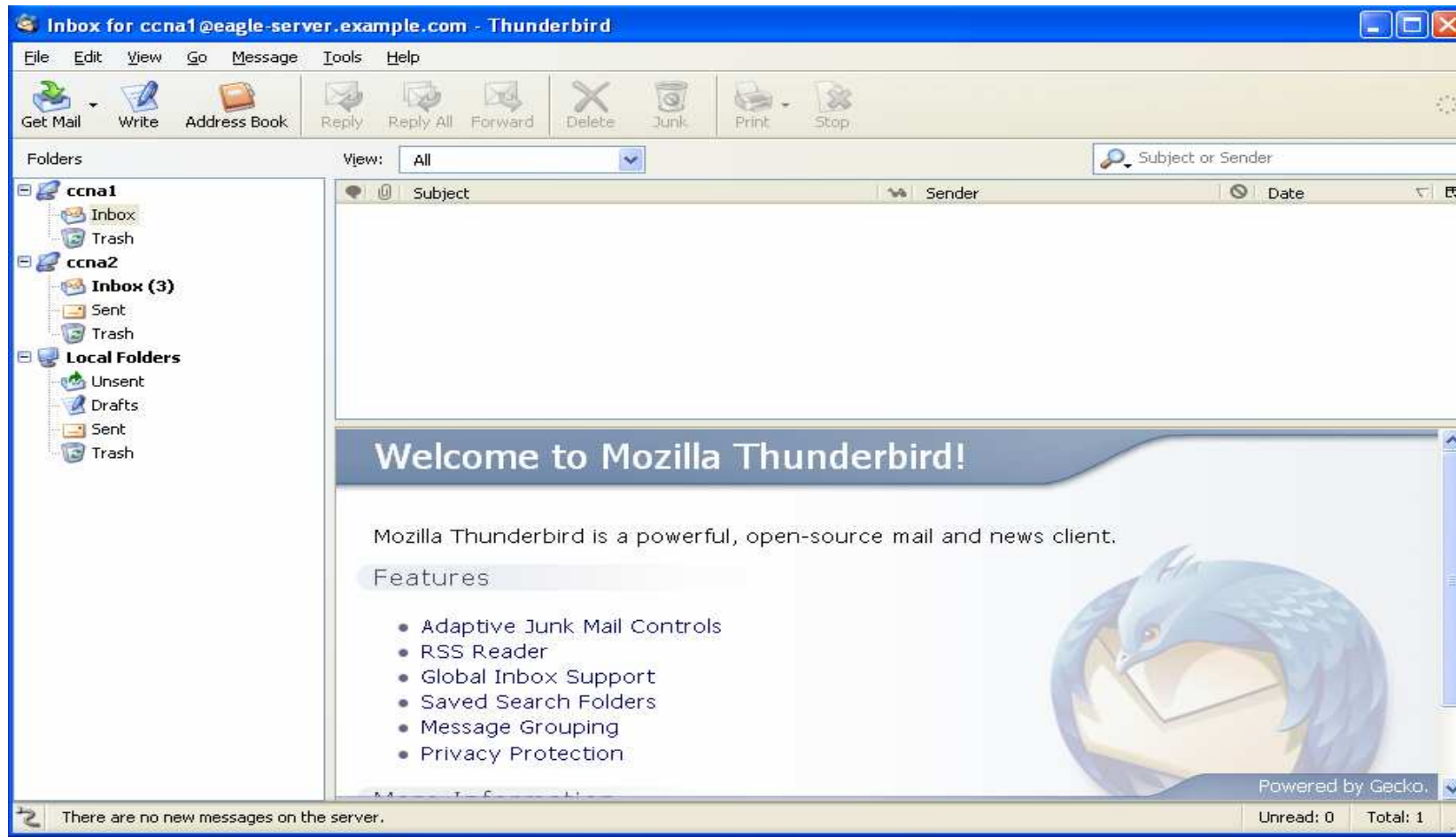
TeraTerm is an alternate terminal program to HyperTerminal.

# Solarwinds



## TFTP Server Software

# Mozilla Thunderbird



Mozilla Thunderbird is an email and news client used with Wireshark to analyze and understand the flow of traffic of the SMTP protocol.

# Thunderbird with Wireshark

No. ↓	Time	Source	Destination	Protocol	Info
1	0.000000	172.16.1.1	172.16.255.255	NBNS	Name query NB WORKGROUP<1b>
2	0.741371	172.16.1.1	172.16.255.255	NBNS	Name query NB WORKGROUP<1b>
3	1.492443	172.16.1.1	172.16.255.255	NBNS	Name query NB WORKGROUP<1b>
4	3.306445	172.16.1.1	192.168.254.254	TCP	1250 > smtp [SYN] Seq=0 Len=0 MSS=1460
5	3.306968	192.168.254.254	172.16.1.1	TCP	smtp > 1250 [SYN, ACK] Seq=0 Ack=1 win=5840 Len=0 MSS=1460
6	3.307012	172.16.1.1	192.168.254.254	TCP	1250 > smtp [ACK] Seq=1 Ack=1 win=64240 Len=0
7	3.313519	192.168.254.254	172.16.1.1	SMTP	Response: 220 localhost.localdomain ESMTP Sendmail 8.13.1/8.13.1; sun, 28 Jan 2007 18:39:18 +1000
8	3.353004	172.16.1.1	192.168.254.254	SMTP	Command: EHLO [172.16.1.1]
9	3.353436	192.168.254.254	172.16.1.1	TCP	smtp > 1250 [ACK] Seq=90 Ack=20 win=5840 Len=0
10	3.353657	192.168.254.254	172.16.1.1	SMTP	Response: 250-localhost.localdomain Hello host-1.example.com [172.16.1.1], pleased to meet you
11	3.356823	172.16.1.1	192.168.254.254	SMTP	Command: MAIL FROM:<ccna1@example.com> SIZE=398
12	3.359743	192.168.254.254	172.16.1.1	SMTP	Response: 250 2.1.0 <ccna1@example.com>... Sender ok
13	3.363127	172.16.1.1	192.168.254.254	SMTP	Command: RCPT TO:<ccna2@example.com>
14	3.365007	192.168.254.254	172.16.1.1	SMTP	Response: 250 2.1.5 <ccna2@example.com>... Recipient ok
15	3.367680	172.16.1.1	192.168.254.254	SMTP	Command: DATA
16	3.368230	192.168.254.254	172.16.1.1	SMTP	Response: 354 Enter mail, end with "." on a line by itself
17	3.376881	172.16.1.1	192.168.254.254	SMTP	Message Body
18	3.387830	192.168.254.254	172.16.1.1	SMTP	Response: 250 2.0.0 10s8dioY005299 Message accepted for delivery
19	3.395347	172.16.1.1	192.168.254.254	SMTP	Message Body
20	3.395855	192.168.254.254	172.16.1.1	SMTP	Response: 221 2.0.0 localhost.localdomain closing connection
21	3.395897	192.168.254.254	172.16.1.1	TCP	smtp > 1250 [FIN, ACK] Seq=564 Ack=502 win=6432 Len=0
22	3.395929	172.16.1.1	192.168.254.254	TCP	1250 > smtp [ACK] Seq=502 Ack=565 win=63677 Len=0
23	3.405772	172.16.1.1	192.168.254.254	TCP	1250 > smtp [FIN, ACK] Seq=502 Ack=565 win=63677 Len=0
24	3.406204	192.168.254.254	172.16.1.1	TCP	smtp > 1250 [ACK] Seq=565 Ack=503 win=6432 Len=0

# TWiki

The image shows a screenshot of the TWiki Sandbox web page. At the top left is the TWiki logo with the text "collaborate with TWiki". To the right are "Jump" and "Search" input fields. Below the logo is a "Sandbox" header. A red box labeled "Log in Hyperlink" points to a "Log In or Register" link. On the left is a sidebar with links: "Sandbox Web", "Create New Topic", "Index", "Search", "Changes", "Notifications", and "Statistics". The main content area says "You are here: TWiki > Sandbox Web > WebHome" and "r12 - 14 Apr 2007 - 21:43:05 - TWikiGuest". It features a "Welcome to the CiscoStudentSandbox web" message and a paragraph about the sandbox's purpose. Overlaid on the bottom is a login form titled "Please enter your username and password:". It has a "Username" section with a text input containing "StudentCcna1" and a "Password" section with a masked text input and a "Logon" button. A link "I forgot my password" is also present.

collaborate with  
**TWiki**

Jump Search

**Sandbox**

Log In or Register

You are here: TWiki > Sandbox Web > WebHome r12 - 14 Apr 2007 - 21:43:05 - TWikiGuest

**Welcome to the CiscoStudentSandbox web**

The **Sandbox** web is the sandbox you can use for testing. Everybody is welcome to add or delete some stuff. It is recommended to walk through the [TWikiTutorial](#) to get a jumpstart on the TWiki tool. A good rule of thumb is to add at the end of the page and sign and date it with your [WikiName](#).

**Please enter your username and password:**

**Username**

StudentCcna1

Enter your [LoginName](#). (Typically First name and last name, no space, no dots, capitalized, e.g. JohnSmith, unless you chose otherwise). Visit [TWikiRegistration](#) if you do not have one.

**Password**

\*\*\*\*\* [I forgot my password](#)

**Logon**

## Wiki creation



## Ejecting Eagle Server CD

- Place mouse over the “K” at bottom left of desktop.
- Click on logout
- Another box will appear with the following choices:

End current session.

Turn off computer.

Restart computer.

- Select turn off computer and CD will eject from PC.

# Documentation

On Academy Connection Tools:

- Eagle Server FAQ
- Eagle Server Info
- Orientation Lab



# Q and A



Hands-On Orientation Lab

Lab 3.4.3: E-mail Services and Protocols

Lab 9.8.1: Address Resolution Protocol (ARP)

