Cisco | Networking Academy®

Mind Wide Open™

CCNA Exploration 4.0

Network Fundamentals
Student Lab Manual

Activity 1.1.1: Using Google Earth™ to View the World

Learning Objectives

Upon completion of this activity, you will be able to:

- Explain the purpose of Google Earth.
- Explain the different versions of Google Earth.
- Explain the hardware and software requirements needed to use Google Earth (free edition).
- Experiment with Google Earth features such as Help | Tutorial.
- Experiment with Google Earth to explore continents, countries, and places of interest.

Background

Google Earth is a popular application that executes on the desktop of most operating systems. It requires a broadband connection to the Internet and displays Earth as a manipulated 2D, or 3D image. The popular world news channel, CNN, regularly uses Google Earth to emphasize where a news story has occurred.

At the time of writing this activity, there are three versions of Google Earth. The version that fits most needs is Google's free version, Google Earth. A Google Earth Plus version includes GPS support, a spreadsheet importer, and other support features. The Google Earth Pro version is for professional and commercial use. The URL http://earth.google.com/product_comparison.html contains a description of the versions. Use this link to answer the following questions:

Which versions support Tilt and 3D rotation? _____

Which Google Earth version supports the highest resolution? _____

To use Google Earth, version 4, minimum computer hardware requirements must be met:

Operating System	Microsoft Windows 2000 or Windows XP
CPU	Pentium 3 with 500 MHz
System Memory (RAM)	128 MB
Hard Disk	400 MB of free space
Network Speed	128 kbps
Graphics Card	3D-capable with 16 MB of VRAM
Screen	1024x768 pixels, 16-bit High Color screen

Scenario

This activity is to be performed on a computer that has Internet access and on which you can install software.

Estimated completion time, depending on network speed, is 30 minutes.

Task 1: Install Google Earth.

If Google Earth is not installed on the computer, the free application can be downloaded directly from http://earth.google.com/download-earth.html. Follow the installation instructions, and the Google Earth download should start automatically. Remember, you may have to disable any popup blockers on your browser.
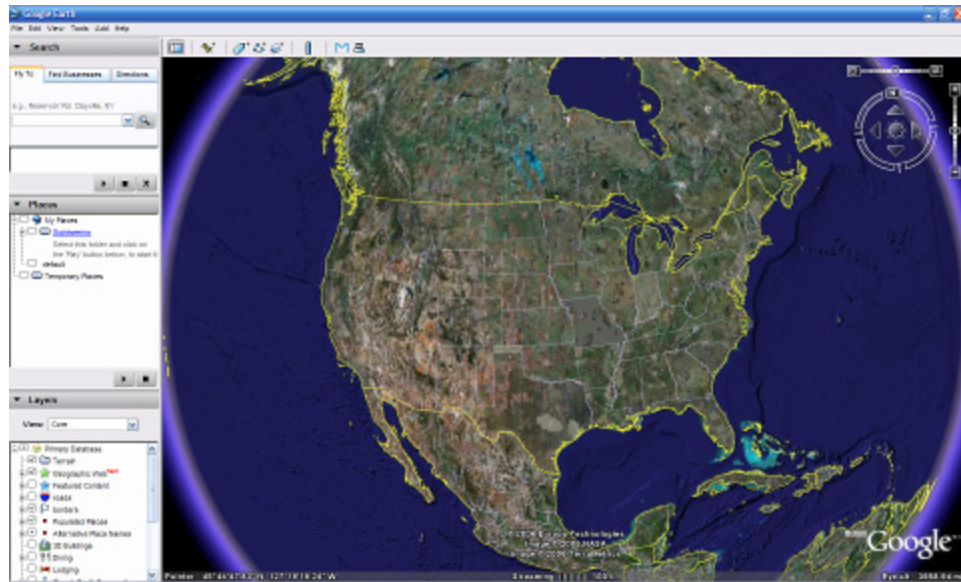

Figure 1. Google Earth Opening Screen

Task 2: Run Google Earth.

Step 1: Refer to Figure 1, the opening screen. The Menu bar is located in the upper left corner of the screen. On the **Help** menu, choose **User Guide** to launch a default web browser and bring up the Google Earth User's Guide. http://earth.google.com/userguide/v4/. Take a few minutes to browse the User's Guide. Before leaving the User's Guide web site, answer the following questions:

List the three ways to move the image.

_____
_____
_____

Which mouse control will zoom in or zoom out?

_____

What is the purpose of the left mouse button?

_____

Task 3: Navigatie the Google Earth Interface.

Step 1: Use the Overview Map feature.

On the **View** menu, choose **Overview Map**. This handy feature provides a relative global position of the magnified image.

Step 2: Review the navigation controls.

Navigation controls are located in the upper right quadrant and control the image magnification and position. The mouse pointer must be moved close to the controls, otherwise only a compass is displayed. Refer to Figure 2 for a description of the navigation controls.
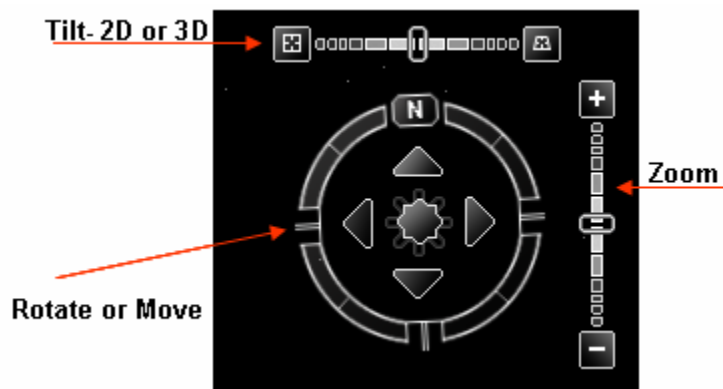
Figure 2. Google Earth Screen Navigation Tools

Step 3: Use the Sightseeing feature.

On the left navigation bar, experiment with the **Places > Sightseeing** folder. Expand Sightseeing, choose a location that you would like to see, and double-click that location. The image will take you to that site. When the location has been reached, an image streaming indicator reports when the image resolution is complete.

Step 4: Experiment with the Search > Fly To folder.

Enter 95134, a U.S. Zip Code.

What U.S. State and City are displayed? _____

What if you would like to "Fly To" London, UK? What data would you need to enter?

_____

_____

Step 5: Use the Fly To feature.

Some locations have better resolution than others, and some location images are older than others. For example, one user commented that he found his home, but the new home next door had not yet been built. Try to find your home using the **Search > Fly To** folder.

Is the resolution for your home the same quality as the Sightseeing location in Step 3? _____

If the resolution for your neighborhood is sufficient, browse the surrounding area to see if you can determine approximately how old the image is.

Figure 3. World Map with Latitude and Longitude Lines

Step 6: View geographic coordinates.

Geographic coordinates are displayed in the lower left quadrant of the image. The first number is called the latitude, and is the angle between a point and the equator. For example, the equator is an imaginary line dividing the globe into the Northern or Southern Hemisphere. The equator has a 0° latitude. The second number is called the longitude, and is the angle east or west of an arbitrary earth point. The Royal Observatory, United Kingdom, is the international zero-longitude point. The combined longitude and latitude is called the common graticule. The coordinate measurements are in degrees°, minutes', seconds, and tenths". For latitude, the reference is North (N) or South (S) of the equator. For longitude, the reference is East (E) or West (W) of the Royal Observatory. Refer to Figure 3. For a layman's definition of geographic coordinates, go to URL
http://en.wikipedia.org/wiki/Geographic_coordinate_system. On the **View** menu, choose **Grid** to display Google Earth Gridlines.

Using the pointer and coordinates shown in the lower left quadrant of the image, what are the coordinates of your home? _____

Task 4: Reflection

Google Earth can bring the world into the home or office. While enjoying the images, consider what digital communication resources were used. For example, satellite communication with an earth station transmitted the image of your home to a ground location. Some type of database was used to store the image. A Local Area Network (LAN) sent your image request across the Internet, probably through several Wide Area Networks (WANs) and then to another LAN with a computer that returned the image to you. The delay in retrieving the image may have been short or long, depending on the slowest speed of all network connections in the path between the database repository and your computer.

Could the image be displayed faster if data compression techniques were used?

Consider network security. Could someone eavesdrop on your network connection?

Task 5: Challenge

Google Earth displays image coordinates in the lower left quadrant of the image. Use the following URL to learn about different coordinate systems:
http://www.colorado.edu/geography/gcraft/notes/coordsys/coordsys.html. Wikipedia contains a useful definition of common geographical terms.

Use the geographic coordinate system to describe your home with as much accuracy and detail as possible.

Task 6: Clean Up

You may be required to remove Google Earth from the computer. If so, perform these steps:

1. Click **Start** > **Settings** > **Control Panel**.

2. Double-click **Add or Remove Programs**.

3. Locate and click **Google Earth**.

4. Click **Remove** and follow the prompts.

Additional removal information is available from URL
http://earth.google.com/support/bin/answer.py?answer=20738&ctx=sibling.

Unless instructed otherwise, turn off the computer.

Activity 1.4.5: Identifying Top Security Vulnerabilities

Learning Objectives

Upon completion of this activity, you will be able to:

- Use the SANS site to quickly identify Internet security threats.
- Explain how threats are organized.
- List several recent security vulnerabilities.
- Use the SANS links to access other security-related information.

Background

One of the most popular and trusted sites related to defending against computer and network security threats is SANS. SANS stands for SysAdmin, Audit, Network, Security. SANS contains several components, each a major contributor to information security. For additional information about the SANS site, go to http://www.sans.org/, and select items from the Resources menu.

How can a corporate security administrator quickly identify security threats? SANS and the FBI have compiled their list of the top 20 Internet Security Attack Targets at http://www.sans.org/top20/. The list is regularly updated with information formatted by:

- Operating Systems—Windows, Unix/Linux, MAC
- Applications—Cross-platform, including web, database, Peer-to-Peer, instant messaging, media players, DNS servers, backup software, and management servers
- Network Devices—Network infrastructure devices (routers, switches, etc.), VoIP devices
- Human Elements—Security policies, human behavior, personnel issues
- Special Section—Security issues not related to any of the above categories

Scenario

This lab will introduce students to computer security issues vulnerabilities. The SANS web site will be used as a tool for threat vulnerability identification, understanding, and defense.

This lab must be completed outside of the Cisco lab from a computer with Internet access.

Estimated completion time is one hour.

Task 1: Locate the SANS Resources.

Step 1: Open the SANS Top 20 List.

Using a web browser, go to URL http://www.sans.org. On the **resources** menu, choose **top 20 list**, shown in Figure 1.

Figure 1. SANS Menu

The SANS Top-20 Internet Security Attack Targets list is organized by category. An identifying letter indicates the category type, and numbers separate category topics. These topics change annually due in part to rapid changes in technology. For the purpose of this activity, navigate to http://www.sans.org/top20/2006/?portal=8cd2978e94c0c1ae18da87e90a085409.

Router and switch topics fall under the Network Devices category, **N**. There are two major hyperlink topics:

N1. VoIP Servers and Phones
N2. Network and Other Devices Common Configuration Weaknesses

Step 2: Click hyperlink N2. Network and Other Devices Common Configuration Weaknesses to jump to this topic.

Task 2: Review the SANS Resources.

Step 1: Review the contents of N2.2 Common Default Configuration Issues.

For example, N.2.2.2 (in January 2007) contains information about threats associated with default accounts and values. A Google search on "wireless router passwords" returns links to multiple sites that publish a list of wireless router default administrator account names and passwords. Failure to change the default password on these devices can lead to compromise and vulnerability by attackers.

Step 2: Note the CVE references.

The last line under several topics references Common Vulnerability Exposure (CVE). The CVE name is linked to the National Institute of Standards and Technology (NIST) National Vulnerability Database (NVD), sponsored by the Department of Homeland Security (DHS) National Cyber Security Division and US-CERT, which contains information about the vulnerability.

Task 3: Collect Data.

The remainder of this lab walks you through a vulnerability investigation and solution.

Step 1: Choose a topic to investigate, and click on an example CVE hyperlink.

Note: Because the CVE list changes, the current list may not contain the same vulnerabilities as those in January 2007.

The link should open a new web browser connected to http://nvd.nist.gov/ and the vulnerability summary page for the CVE.

Step 2: Fill in information about the vulnerability:

Original release date: _____

Last revised: _____

Source: _____

Overview:

_____

_____

_____

_____

_____

Under Impact, there are several values. The Common Vulnerability Scoring System (CVSS) severity is displayed and contains a value between 1 and 10.

Step 3: Fill in information about the vulnerability impact:

CVSS Severity: _____

Range: _____

Authentication: _____

Impact Type: _____

The next heading contains links with information about the vulnerability and possible solutions.

Step 4: Using the hyperlinks, write a brief description of the solution as found on those pages.

_____

_____

_____

_____

_____

_____

_____

_____

Task 4: Reflection

The number of vulnerabilities to computers, networks, and data continues to increase. The governments have dedicated significant resources to coordinating and disseminating information about the vulnerability and possible solutions. It remains the responsibility of the end user to implement the solution. Think of ways that users can help strengthen security. Think about user habits that create security risks.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Task 5: Challenge

Try to identify an organization that will meet with us to explain how vulnerabilities are tracked and solutions applied. Finding an organization willing to do this may be difficult, for security reasons, but will benefits students, who will learn how vulnerability mitigation is accomplished in the world. It will also give representatives of the organization an opportunity to meet the class and conduct informal intern interviews.

Lab 1.6.1: Using Collaboration Tools— IRC and IM

Topology Diagram

Learning Objectives

Upon completion of this lab, you will be able to:

- Define Internet Relay Chat (IRC) and Instant Messaging (IM).
- List several collaborative uses of IM.
- List several misuses and data security issues involving IM.
- Use IRC to demonstrate collaboration.

Background

E-mail permits multiple users to collaborate, share ideas, and transfer files. However, unless the user constantly monitors the e-mail account, unread e-mail may go unnoticed for a long period of time. When people have wanted immediate contact, the telephone has been the technology of choice. Unfortunately, the telephone cannot be used to transfer files. What collaborators need for communication in the human network is a tool that has the flexibility of e-mail with the responsiveness of the telephone. Internet Relay Chat (IRC) and Instant Messaging (IM) fit nicely into these requirements. Using the Internet or a private corporate network, users can easily exchange ideas and files. IMing and Chatting are both methods of real-time communication; however, they are implemented differently.

Instant Messaging provides one-on-one communication with "accepted" individuals. To initiate an Instant Message, one person needs to "invite" another. The recipient of the invitation needs to know—and accept—the IM session based on the other user's screen name. IM clients allows you to have an approved list of users, often called a Buddy List. If you want to communicate with more than one person at a time, you can open additional IM windows. Each of these windows represents a two-person communication.

Internet Relay Chat, on the other hand, allows multiple people to interact. Chat also provides a degree of anonymity. To start chatting, you establish a connection to a chat server and join a discussion on a particular topic. When you join, you are said to "join a room." In the chat room, you typically create your own identity and can give as little information about yourself as you choose.

While the following discussion focuses primarily on IM, a brief hands-on lab with our "model Internet cloud" will demonstrate the ease of IRC.

IM requires a device providing services that allows users to communicate. This device is referred to as the *Instant Messenger Server*. The users on the end devices, such as a computer, use a piece of software called the *Instant Messenger Client*. This arrangement is called a client/server relationship. IM

clients connect to an IM server, and the server joins clients. This relationship is called an IM network. There are many different IM networks available, each with a dedicated following of users. Popular IM networks include America On Line (AOL) Instant Messenger (AIM), Windows Live Messenger (MSN), Yahoo! Messenger, and ICQ (I Seek You). Figure 1 shows the AIM client application connected to the AIM network.
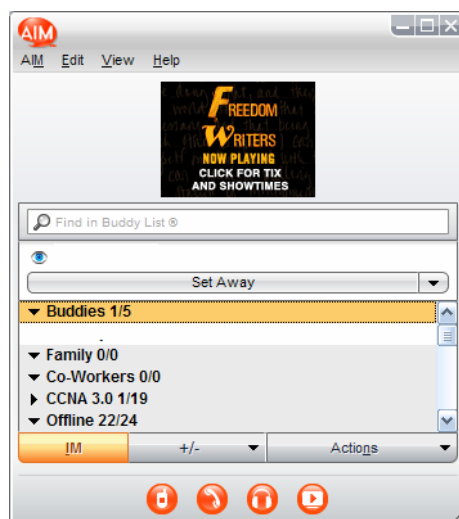

Figure 1. AIM Client

Features

IM services have several common features:

- When an IM client connects to the IM network, any existing connections can be alerted through a contact list, a list of other people that you communicate with through the IM Client.
- File sharing between IM clients enables work collaboration.
- Text messaging between clients is possible, and can be logged.
- Some IM networks offer audio services.
- Newer services that some IM networks are beginning to provide include video conferencing, Voice over IP (VoIP), web conferencing, desktop sharing, and even IP radio and IPTV.

Protocols

Each IM network uses an agreed-upon method of communication, called a protocol. Many of the IM networks use proprietary protocols. AIM and ICQ (purchased by AOL) use the proprietary Open System for Communication in Realtime (OSCAR) protocol. Both Microsoft and Yahoo! have proprietary protocols but have partnered services for joint connectivity.

Throughout this course we will learn about many different protocols. The Internet Engineering Task Force (IETF) has attempted to standardize IM protocols, notably with the Session Initialization Protocol (SIP). SIPv2 was originally defined in RFC 2543, and made obsolete by RFC 3261. As with proprietary IM protocols, there are numerous open source protocols.

Some IM client applications, such as Gaim and Trillian, can differentiate between the various IM network protocols; IM servers can also incorporate this support. The IETF formalized an open standard, Jabber, based on the Extensible Messaging and Presence Protocol (EMPP). Applicable IETF references are RFC 3290 and RFC 3291. Encrypted communication is supported.

Social misuse of IM has been a concern for parents, and many IM networks encourage parental control. Child restrictions include limiting IM contacts and providing supervision while online. AIM and Yahoo! Messenger provide free supervision software tools. Some parental supervision tools include background logging, online time limits, chat room blocking, blocking specific users, and disabling certain functions of the client.

Security

Multiple security issues have been identified with IM. As a result, many organizations either limit or completely block IM from entering the corporate network. Computer worms, viruses, and Trojan horses, categorized as malware, have been transferred to IM client computers. Without strong security methods, information exchanged between users can be captured and disclosed. IM clients and IM servers have experienced application vulnerabilities, which have resulted in vulnerable computers. Even legitimate users can congest network throughput by transferring large files.

How does a system administrator protect his or her network from IM vulnerabilities and misuse? The SysAdmin, Audit, Network, Security (SANS) Institute recommends several countermeasures. The following list is from the SANS web site, `http://www.sans.org/top20/#c4`:

C4.4 How to Protect against IM Vulnerabilities and Unauthorized IM Usage

- Establish policies for acceptable use of IM. Ensure that all users are aware of those policies and clearly understand the potential risks.
- Standard users should not be permitted to install software. Restrict Administrative and Power User level privileges to support personnel acting in their support capacity. If a user must have Administrative or Power User privileges, create a separate account to be used for his or her daily office functions, Internet surfing, and online communication.
- Ensure that vendor patches are promptly applied to IM software, interrelated applications, and the underlying operating system.
- Employ antivirus and antispyware products.
- Do not rely on external IM servers for internal use of IM; provide a commercial grade IM proxy or internal IM server.
- Create secure communication paths when using IM with trusted business partners.
- Appropriately configure intrusion detection and prevention systems. Understand that many IM applications are capable of enabling associated communications to masquerade as otherwise legitimate traffic (for example, http).
- Consider deploying products specifically designed for IM security.
- Filter all http traffic through an authenticating proxy server to provide additional capabilities of filtering and monitoring IM traffic.
- Block access to known public IM servers that have not been explicitly authorized. (Note: This offers only partial protection due to the number of potential external servers.)
- Block popular IM ports. (Note: This offers only partial protection, due to the number of potential protocols and associated ports, and the ability of applications to bypass port restrictions.)
- Monitor using an Intrusion Detection/Prevention system for users creating tunnels for IM or bypassing proxies.

The Future of IM

The future of IM is promising, enabling users to adapt new technologies for collaboration. For example, mobile IM supports mobile users, providing IM services to hand-held cellular phones. Most popular cellular phone manufacturers have their own form of mobile IM. Another popular hand-held appliance is the Blackberry. The Blackberry supports common IM tools, such as text messaging, as well as push e-mail, telephony, and web browsing.

Scenario

The topology diagram shows two computers connected to a "cloud." In networking, a cloud is often used to symbolize a more complex network, such as the Internet, which is not the current focus of this discussion. In this lab, you will use two computers that must first obtain communication software from the network cloud. After installing the software, the cloud will still be necessary to provide communication services. In subsequent chapters you will study in great detail the devices and protocols that are inside the cloud. Inside the cloud is a server called *eagle-server* as well as other networking devices. This lab uses eagle-server as the IRC server, and Gaim as the IRC client. Gaim is used for this lab, but any IRC client may be used if available. An IRC client is available for download from eagle-server, URL http://eagle-server.example.com/pub.

Estimated completion time is 45 minutes.

Task 1: Configuring the Chat Client

The IRC protocol is an open standard, originally described in RFC 1459, communicating across plain text links.

Step 1: Verify that there is an IRC client on the lab computer.

If not, download and install gaim-1.5.0.exe (windows executable) from URL `ftp://eagle-server.example.com/pub/eagle_labs/eagle1/chapter1`. Accept the default settings during the installation. After verifying that the Gaim chat client is installed, use the following steps to configure Gaim:

Step 2: Open Accounts window.

1. Open Gaim and select the Login window, icon **Accounts**. The Accounts window is shown in Figure 2.
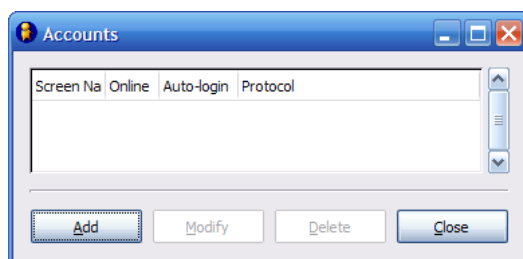

Figure 2. Gaim Accounts Window

2. On the Accounts window, click **Add.**

Step 2: Add a new account.

1. See Figure 3. On the Add Account window, expand the "`Show more options`" option. Fill in required information:

> Protocol: `IRC`
> Screen Name: `(how others will know you)`
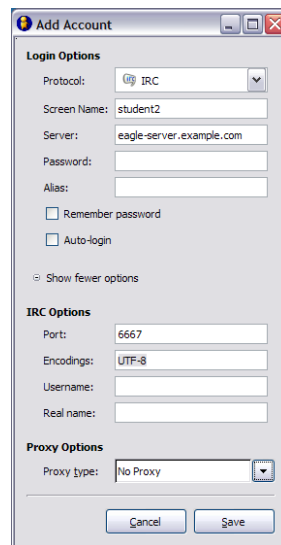> Server: `eagle-server.example.com`
> Proxy Type: `No Proxy`

Figure 3. Gaim Add Account Window

2.   When finished, click **Save**.

3.   Close the Accounts window.

Task 2: Connection to Chat Server

Step 1: Sign On.

Return to the Login window, where the new account to eagle-server should be visible. Click **Sign-on**. Two windows should open. Figure 4 shows the IRC connect status window. Figure 5 shows the main Gaim IM client window, used for chatting or IM.
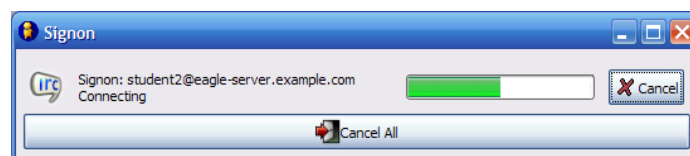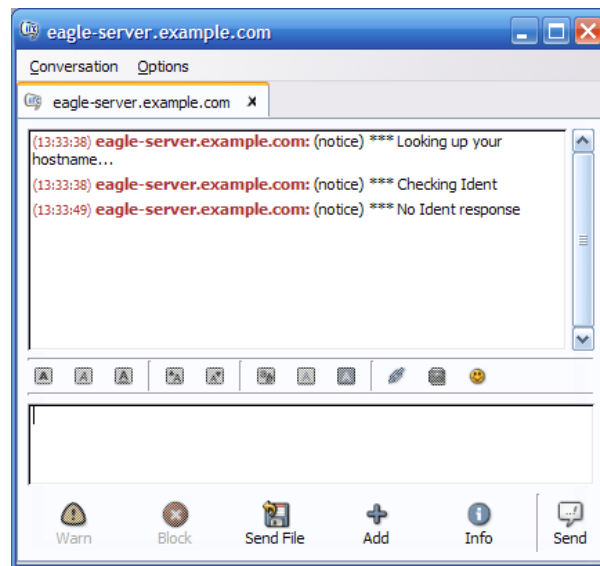

Figure 4. IRC Connect Status Window

Figure 5. Gaim IRC Client Window

Step 2: Join the Chat.

When the IRC client connects to the IRC server, the status window closes and a Buddy List window displays. Click **Chat**, as shown in Figure 6.

Note: To join a chat channel, the Channel name *must* start with #. If the Channel name is incorrect, you will be in a chat room alone (unless other students made a similar error).
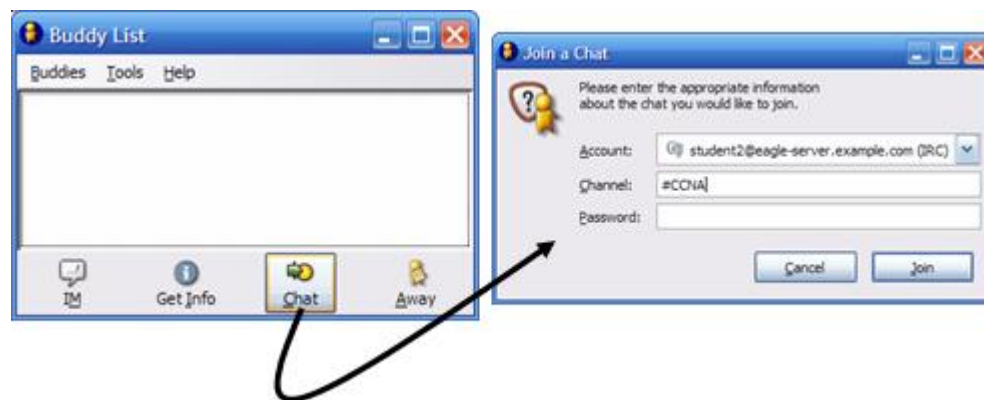

Figure 6. Joining a Chat

Task 3: The Chat Session

Figure 7 shows a brief chat between users *Root* and *student2*. Multiple students can join and interact with each other.
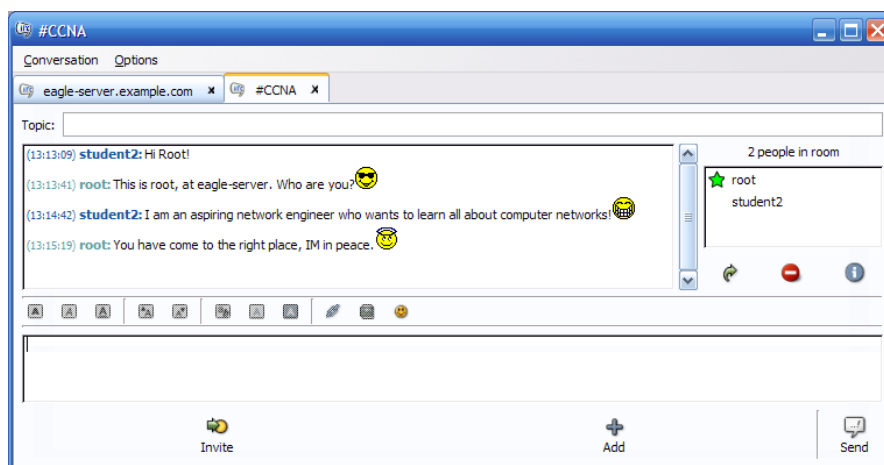
Figure 7. Participating in Chat

During the chat, consider how you—as a parent or network administrator—would manage this type of connection.

Task 4: Reflection

On a network with an Internet connection, the Gaim IM client can be used to connect to several different IM providers. Most teenagers and young adults today are familiar with IMing between friends and sharing files, but the communication between the client and server may not be understood. As a future network engineer, you should understand the social and security issues with IM and IRC.

Task 5: Challenge

While you are connected in chat, transfer files between partners. Use a continuous ping from the host to the eagle server to monitor network throughput. Observe the response time before and during the file transfer. Write a brief description of the network response time—during file transfers and without file transfers.

_____

_____

_____

_____

_____

Task 6: Clean Up

Check with your instructor before removing Gaim and shutting down the computer.

Lab 1.6.2: Using Collaboration Tools—Wikis and Web Logs

Topology Diagram

Learning Objectives

Upon completion of this lab, you will be able to:

- Define the terms *wiki* and *blog*.
- Explore wiki features.

Background

The lab topology should be configured and ready for use. If there are connectivity issues with the lab computer connecting to Eagle Server, ask the instructor for assistance.

The topology diagram shows two computers connected to a "cloud." In networking, a cloud is often used to symbolize a more complex network that is not the current focus of discussion. In this lab, you will use a host computer that connects across the cloud to access a Twiki. In subsequent chapters you will study in great detail the devices and protocols that are inside the cloud.

Scenario

In this lab, you will have the opportunity to learn about the different parts of a wiki. If you ever used *Wikipedia*, you are probably already familiar with the look and feel of a wiki. After using *Wikipedia*, with its rich content and flexible links, moving back to flat files may feel constricting and unsatisfying.

To gain experience with a wiki, the TWiki wiki server installed on Eagle Server will be explored.

Task 1: Define the Terms Wiki and Blog.

Wikis
"Wiki" is a Hawaiian-language word that means *fast*. In networking terms, a wiki is a web-based collaboration tool that permits almost anyone to immediately post information, files, or graphics to a common site for other users to read and modify. A wiki enables a person to access a home page (first page) that provides a search tool to assist you in locating the articles that interest you. A wiki can be installed for the internet community or behind a corporate firewall for employee use. The user not only reads wiki contents but also participates by creating content within a web browser.

Although many different wiki servers are available, the following common features that have been formalized into every wiki:

- Any web browser can be used to edit pages or create new content.
- Edit and auto links are available to edit a page and automatically link pages. Text formatting is similar to creating an e-mail.
- A search engine is used for quick content location.
- Access control can be set by the topic creator, defining who is permitted to edit content.
- A wiki web is a grouping of pages with different collaboration groups.

For more information on Wiki, visit the following URLs outside of class:

http://www.wiki.org/wiki.cgi?WhatsWiki
http://www.wikispaces.com/

Blogs

A web log, called a blog, is similar to a wiki in that users create and post content for others to read. Blogs are normally the creation of a single person and the blog owner controls blog content. Some blogs permit users to leave comments and provide feedback to the author while others are more restrictive. Free internet blog hosting is available, similar to a free web site or e-mail account, such as www.blogger.com.

Task 2: Explore Wiki Features with Twiki Tutorial.

The Twiki tutorial consists of exploring some of the more common features of a wiki. Listed below are the major topics covered in the tutorial:

20-Minute TWiki Tutorial
1. Get set...
2. Take a quick tour...
3. Open a private account…
4. Check out TWiki users, groups.
5. Test the page controls...
6. Change a page, and create a new one...
7. Use your browser to upload files as page attachments...
8. Get e-mail alerts whenever pages are changed...

As each topic in the tutorial is investigated, complete the questions in this task. The exception is "3. Open a private account…". Twiki requires email verification for new accounts, and email has not been configured on the lab host computers. Instead, users have already been created for steps that require login privileges.

The power of a wiki is in the rich hyperlink content. Following hyperlinks can present continuity problems. It is recommended to open two browsers. Point one browser at the Twiki URL, and use the other browser for 'working' pages. Adjust the browser window sizes so that instructions can be viewed in one browser while actions can be performed in the other. Any external links that are selected will result in an error.

Step 1: Establish a web client connection to Eagle Server wiki.

Open a web browser and connect to the TWiki Sandbox, URL http://eagle-server.example.com/twiki/bin/view/Sandbox/WebHome. The URL name is case sensitive, and must be typed exactly as shown. The Sandbox is a web topic designed to test wiki features. Refer to Figure 1.
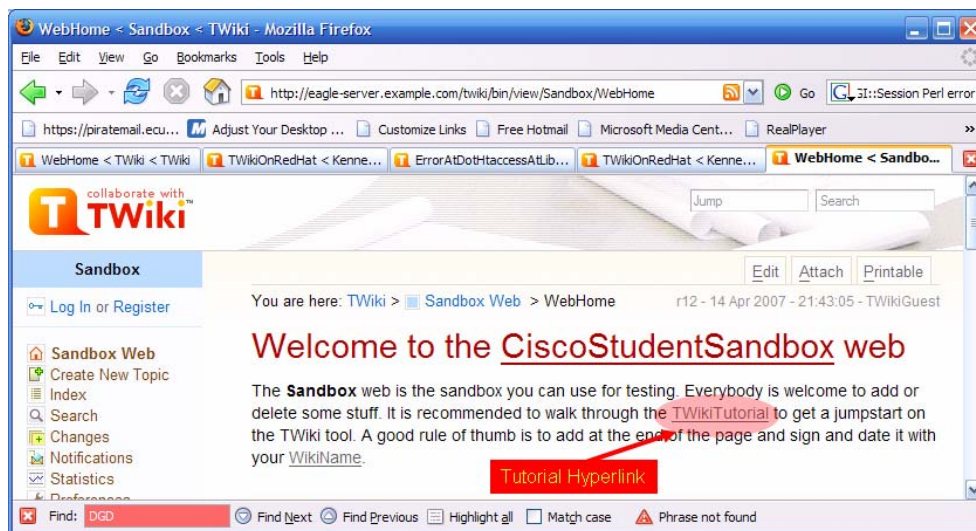
Figure 1. TWiki Sandbox Web.

Step 2: Open the TWiki Tutorial.

Click the TWiki Tutorial link, highlighted in the red oval in Figure 1, to open the wiki tutorial page.

Step 3: Complete the TWiki tutorial.

Refer to the tutorial, step 1, "Get set... ", and step 2, "Take a quick tour...". After completing the first two tutorial sections, answer the following questions:

What is a WikiWord?

_____
_____
_____

How many results are returned from a search of WebSearch? _____

Refer to the tutorial, step 3, "Open a private account…". Email is not possible at this time, therefore you will not be able to register. Instead, userids have been created for you to use later in this lab.

The key point to understand about this step is that registration is a two-part process. First, users fill in registration information and submit the form to TWiki.

List the mandatory information required for registration:

_____
_____
_____
_____
_____
_____
_____
_____

TWiki responds to a registration request by sending an email to the user that contains a unique activation code.

The second part of the registration process is when the user (1) enters the code in the activation window, or (2) responds with email by clicking on the TWiki response link. At this time, the user account is added to the TWiki datbase.

Refer to the tutorial, step 4, "`Check out TWiki users, groups.`". A list of TWiki users and groups is displayed. After completing this tutorial section, answer the following questions related to user and group issues:

How is a user's password reset?
_____
_____
_____

How can inappropriate changes be fixed in a wiki topic?
_____

Tutorial step 5, "`Test the page controls...`", will familiarize you with page editing commands. After completing this tutorial section, answer the following questions:

What is the latest revision number?
_____

Place the correct action link next to the description for page controls:

Attach   Backlinks   Edit   History   More   Printable
r3 > r2 > r1   Raw View

Description	Action Link
add to or edit the topic	
show the source text without editing the topic	
attach files to a topic	
find out what other topics link to this topic (reverse link)	
additional controls, such as rename / move, version control and setting the topic's parent.	
topics are under revision control- shows the complete change history of the topic. For example, who changed what and when.	
view a previous version of the topic or the difference between two versions	
goes to a stripped down version of the page, good for printing	

:

Tutorial step 6, "`Change a page, and create a new one...`", is an opportunity for you to add content to the wiki. Complete this tutorial, using the table below to login to the wiki server.

On Eagle Server a group with private accounts has been created to allow participation in a private TWiki topic. These accounts are **StudentCcna1** through **StudentCcna22.** All accounts have the same password**, cisco**. You should use the account that reflects your pod and host computer number. Refer to the following table:

Lab pod#host#	Account Login ID (case sensitive)
Pod1host1	`StudentCcna1`
Pod1host2	`StudentCcna2`
Pod2host1	`StudentCcna3`
Pod2host2	`StudentCcna4`
Pod3host1	`StudentCcna5`
Pod3host2	`StudentCcna6`
Pod4host1	`StudentCcna7`
Pod4host2	`StudentCcna8`
Pod5host1	`StudentCcna9`
Pod5host2	`StudentCcna10`
Pod6host1	`StudentCcna11`
Pod6host2	`StudentCcna12`
Pod7host1	`StudentCcna13`
Pod7host2	`StudentCcna14`
Pod8host1	`StudentCcna15`
Pod8host2	`StudentCcna16`
Pod9host1	`StudentCcna17`
Pod9host2	`StudentCcna18`
Pod10host1	`StudentCcna19`
Pod10host2	`StudentCcna20`
Pod11host1	`StudentCcna21`
Pod11host2	`StudentCcna22`

From the lab Wiki Welcome Screen, click the **Log In** link located in the upper left corner of the page. See Figure 2.

Figure 2. Log In Link.

A login box similar to that shown in Figure 3 should appear. Enter the applicable Twiki username, and password `cisco`. Both the username and password are case sensitive.

Figure 3. Login Box.

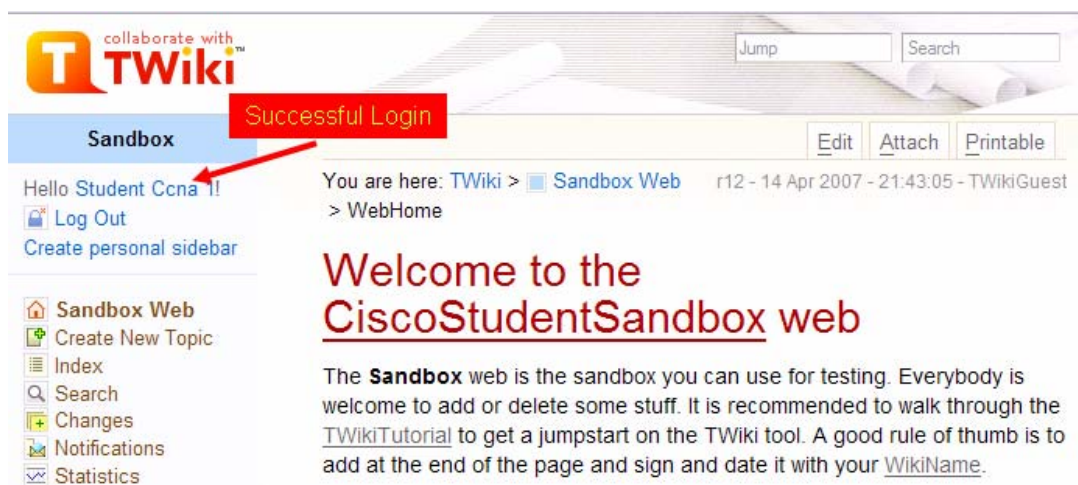This should bring up your wiki topic page, similar to the one shown in Figure 4.

Figure 4. wiki Topic Page.

Tutorial step 7, "Use your browser to upload files as page attachments...", describes the process for uploading files into the wiki. To complete this tutorial, create a document using notepad and upload it to the wiki server.

What is the default maximum file size that can be transferred?
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Tutorial step 8, "Get e-mail alerts whenever pages are changed...", details how to receive email alerts whenever a particular page has been updated. Sometimes it is not convenient to return regularly to a wiki simply to check for updates to postings. Because Email is not configured on the host computer, alerts will not be sent.

Describe how you could receive e-mail notifications whenever a topic changes?

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Task 3: Reflection

This lab presented the mechanics of a wiki. Usefulness and collaboration will not be realized until you actually join a wiki. Wikis of possible interest include:

- CCNA—http://en.wikibooks.org/wiki/CCNA_Certification
- Cisco systems history—http://en.wikipedia.org/wiki/Cisco_Systems
- Wiki web about Cisco equipment and technology—http://www.nyetwork.org/wiki/Cisco
- Network+ —http://en.wikibooks.org/wiki/Network_Plus_Certification/Study_Guide
- Network Dictionary—http://wiki.networkdictionary.com/index.php/Main_Page
- Wireshark network protocol analyzer—http://wiki.wireshark.org/

Task 4: Challenge

Depending on the type of Eagle Server installation, the class may be able use the TWiki wiki server to post interesting topics related to computer network theory and class progress.

Create a personal blog of your network education experience. Internet access will be required.

Task 5: Clean Up

Close all web browsers and shut down the computer unless instructed otherwise.