



# Lesson 4: Web Browsing



[www.NEARPOD.com](http://www.NEARPOD.com)

Session Code:



## Video

- Lesson 4: Web Browsing



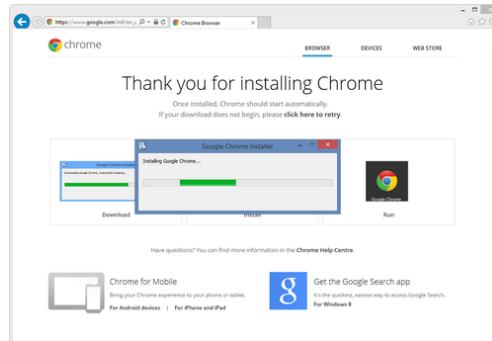
## Basic Functions of Web Browsers



- Provide a way for users to access and navigate Web pages
- Display Web pages properly
- Provide technology to enable multimedia features
- Provide access to Internet services (such as FTP and e-mail)
- Perform authentication and encryption functions

## Installing a Web Browser

- Windows Internet Explorer 9 (IE9) is packaged with Windows 7
- Most browser software is available on the Web or through a vendor CD-ROM
- ISPs provide browser software on installation CD-ROMs
- You should install the latest version of a browser because it will have the most recent security features
- Look for and install browser updates as they become available



## Web Addresses

- Every Web page has a unique address called a **Uniform Resource Locator (URL)**
- URLs typically include the protocol, the Internet resource (server or host name) and the domain name
  - [Http://www.CIWcertified.com](http://www.CIWcertified.com)
- You enter absolute URLs into your browser's Address or Location box
- **Relative URLs** can be used for coding Web sites



## Web Addresses-URLs

- **Home page** -the first Web page that displays when you access a domain.
  - Home pages are usually named home, default or index.
- **Deep URL** -A URL that goes deeper into a Web site than the home page.
  - [www.ciwcertified.com/certifications/index.php](http://www.ciwcertified.com/certifications/index.php)
  - <http://mshallsouthcreekms.weebly.com/introduction-to-it-8th.html>
- It includes a path that penetrates the folder structure of the Web site.
- **Relative URL** - gives a path to a resource using the current page as an origin.
  - A relative URL is also known as an **abbreviated URL**, and it is always referenced from within the page currently loaded into the Web browser.
  - The URL [/certifications/index.php](#) (without the preceding domain portion) is an example of a relative URL.
  - The system root is implied by the slash ( / ) that begins the URL.

## Web Addresses-URLs

- **Absolute URL**- includes the full path from the system root (or domain, which includes the server name) to a specific page or resource.
- Any URL that you type into your Web browser's Address bar will be an absolute URL.
  - Domain-level URLs (e.g. [www.CIWcertified.com](http://www.CIWcertified.com)) and deep URLs (e.g. [www.ciwcertified.com/certifications/index.php](http://www.ciwcertified.com/certifications/index.php)) are both absolute.

[www.ciwcertified.com/certifications/index.php](http://www.ciwcertified.com/certifications/index.php)  
 System root

## How Browsers Work

1. You enter a URL into the browser
2. Browser divides the URL into three parts: **protocol, server and domain name, and file name**
3. Browser contacts a domain name server to translate server name into an **IP address**
4. Browser uses IP address to connect to server
5. Browser uses **HTTP** to request a page from the server
6. Some level of authentication takes place
7. Server sends the requested page (coded in HTML) to the browser
8. Browser reads and interprets the HTML, and displays the Web page



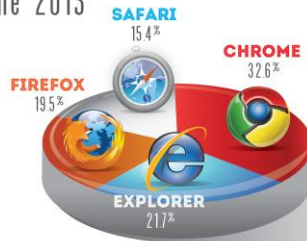
## Browser Choices

- Most popular browsers in use today are Windows Internet Explorer, Google Chrome and Mozilla Firefox
- Alternative browsers include:
  - Safari
  - RockMelt
  - Opera
  - Konqueror
  - Lynx

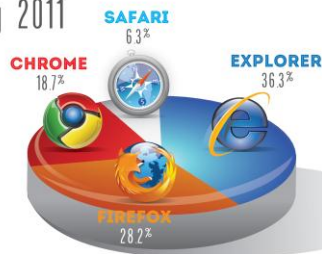


## WEB BROWSER USE

June 2013



July 2011



\*Statistics courtesy of W3Counter

## Google Chrome



- Google uses the greenfield approach to software and Web development
  - Greenfield – a project that lacks any constraints imposed by prior development
- Chrome features:
  - Clean interface
  - Automatic crash recovery
  - Multi-threading
  - Improved sandboxing
  - Isolated tabs
  - Privacy mode

## Video

- Lesson 4: Pick a Browser, any Browser



## Anonymous Browsing

- **Anonymous browsing** allows users to use the browser and leave no cached information, effectively leaving behind no evidence on the hard drive of the sites or content they have browsed.
- No cookies are downloaded to a user's computer during anonymous browsing.



## Browsing Techniques

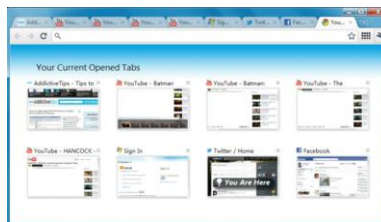
Techniques available to make your browsing sessions more efficient:

- Using Bookmarks and Favorites
- Using multiple windows and tabs
- Following links



## Browser Elements

- Rendering engine
- Interpreter
- Sandbox
- Thread
- Window
- Tab
- Cache
- Supplements
- Network programming
- Download controls
- Plug-in





# Browser Elements

Table 4-1: Elements of Web browser

Browser Element	Description
<b>Rendering engine</b>	The part of the browser responsible for reading the Web page and presenting it to an end user. Has the ability to read, parse and represent HTML, images and other tools. Also called the layout engine. Examples include Mozilla's Gecko, Opera Software's Presto and the KDE project's KHTML engine, which is used in Linux systems as well as Apple's Safari Web browser.
<b>Interpreter</b>	The part of the browser responsible for reading and processing programming languages. A browser often has several interpreters installed by default. Common browser interpreters include those for JavaScript and Java.
<b>Sandbox</b>	A programming method that isolates a particular application or process. A sandbox is vital in secure Web browsing because it helps the browser keep information from being exposed or misused. Sandboxing also helps ensure a stable browser; if one sandboxed process or plug-in malfunctions, the browser can still function properly, rather than experience a crash that results in loss of data.

# Browser Elements

<b>Thread</b>	An instruction from a running application that executes a particular task. When a single-threaded application starts a thread, that application must wait until that thread is finished working. Most Web browsers have traditionally been single-threaded, which can lead to slow performance or browser crashes if a particular thread experiences a problem. Newer browsers engage in a practice called asynchronous threading, which allows a browser to more easily recover from an error in an interpreter or browser supplement.
<b>Window</b>	The screen that contains the Web page you are viewing.
<b>Tab</b>	Another instance of a browser window within a browser.
<b>Cache</b>	Web page cookies and related data stored locally on the hard drive, unless the browser's privacy mode has been invoked.
<b>Supplements</b>	Often called plug-ins, add-ons or helper applications. Includes Adobe Flash, Microsoft Silverlight, and Firefox add-ons.
<b>Network programming</b>	Code that controls how the browser accesses a network. Web browsers usually default to allowing a direct connection to the Internet. However, you can specify proxy server settings that help your browser communicate with proxy-oriented corporate firewalls. Proxy servers will be discussed later in this lesson.

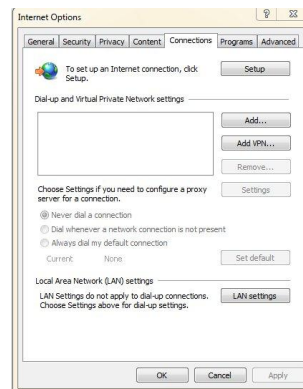
## Browser Elements

<b>Download controls</b>	Settings that determine how the Web browser will process downloads.
<b>Plug-in</b>	An application that adds extra capabilities to your Web browser, such as the ability to view movies or Flash animations. Plug-ins are easy to install and integrate seamlessly into the main HTML file that you are viewing in your browser window. You will learn more about plug-ins in the next lesson.

## Configuring Web Browser Preferences

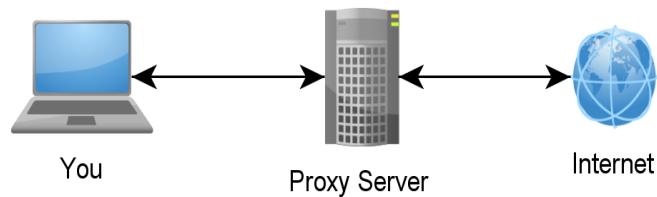
Browser preferences you can configure to suit your working style include:

- Browser fonts
- Home page
- History folder
- Blockers for pop-up and pop-under windows
- Browser cache settings



## Proxy Servers

- **Proxy servers** are placed between corporate networks and the Internet
- Proxy servers can provide the following services:
  - Web document caching
  - Corporate firewall access
- Browsers must be properly configured to work with proxy servers
- Mozilla Firefox can be manually configured to work with a proxy server, or can use a proxy server's URL to automatically configure itself
- Internet Explorer can use a configuration script, or automatically scan, for a proxy server



## Troubleshooting Internet Client Problems

By adjusting browser functions and settings, you can troubleshoot the following client problems:

- Poor rendering
- Slow connection
- No connection
- Slow browser and other system functions
- Authentication issues
- Disk space usage



## Troubleshooting Internet Client Problems

By adjusting browser functions and settings, you can troubleshoot the following client problems:

- **Poor rendering** — If the text on an older screen is unreadable, you can adjust the font setting to help compensate for lower-resolution monitors.
- **Slow connection** — To improve the performance of computers with slow connections, you can increase the size of the browser cache, change the frequency with which the browser compares cached pages to those on the Web, and disable image loading.



## Troubleshooting Internet Client Problems

- **No connection** — If your computer is unable to connect to any Web site and your company uses a proxy server, verify that the browser is correctly configured to use the proxy server.
- **Slow browser and other system functions**
  - Check the size of the browser cache to see whether it is too large. Empty the cache and reset the cache size if necessary to improve system performance.



## Troubleshooting Internet Client Problems

- **Authentication issues** — Browsers have the ability to store authentication information (e.g., user names and passwords). It is possible that you may need to delete this information or change passwords.
- **Disk space usage** — Temporary files that browsers generate can occupy large amounts of disk space. You may need to adjust the disk space settings or clear the browser cache at times.



## Web Feeds

- **Web feeds** – data formats for delivering Web content that is updated frequently:
  - RSS (Really Simple Syndication, RDF Site Summary or Rich Site Summary)
  - Atom



## Lesson 4 Summary

- ✓ Identify the basic functions of Web browsers
- ✓ Install a Web browser
- ✓ Identify the components of Web addresses
- ✓ Describe the functioning of a Web browser
- ✓ Identify considerations in selecting a browser
- ✓ Use various browsing techniques
- ✓ Define elements of a Web browser
- ✓ Configure Web browser preferences
- ✓ Identify the function of proxy servers
- ✓ Troubleshoot common Internet client problems