



Web Servers and Application Servers



What is a Web Server?

- The Term “Web Server” is used to refer to Hardware and software
- For the purposes of this lecture I will be referring to the Software



What is a Web Server?

- The primary function of a web server is to deliver web pages to browsers

Anatomy of a URL

- A URL has three basic parts:
 - the protocol (how to get the resource)
 - the server id (who to get the resource from); and
 - the resource id (the name of the resource and how to find it on the target machine).
- In its most basic form, this looks like the following:
 - <http://www.asu.edu/index.html>
- The protocol tells the browser the kind of transmission it is dealing with, while the domain name is the name of the web site and page address identifies the real file that is displayed.

Anatomy of a URL

- Often the filename is omitted
 - <http://www.asu.edu/>
- The webserver looks for default names. Typically
 - index.html
 - index.htm

Anatomy of a URL

- In the previous case, the file was located in the “default” directory of the web server (this is the place the web server looks for documents if no particular location is specified).
- If the file is located somewhere other than the default directory, this needs to be specified via a path:
 - <http://cidse.engineering.asu.edu/about/our-vision/>



Web Servers

- Web Servers serve up more than just pages
 - They serve up all the page content
 - They handle redirects
 - Server Side Scripting (ASP, PHP, ...)
 - Virtual Hosting

Web Page Content

- A Web Page is not a single document like a printed page is
- A web page is comprised of
 - An HTML document
 - A collection of other source files
 - src="..." (images, video, other html documents)
 - JavaScript and CSS files
- Web Servers provide the Browsers with the content
 - 1st the HTML document
 - The JavaScript, CSS and other source files typically on four parallel threads
 - Top Down ordered



URL Redirection

- URL redirection, also called URL forwarding, is a World Wide Web technique for making a web page available under more than one URL address.



URL Redirection

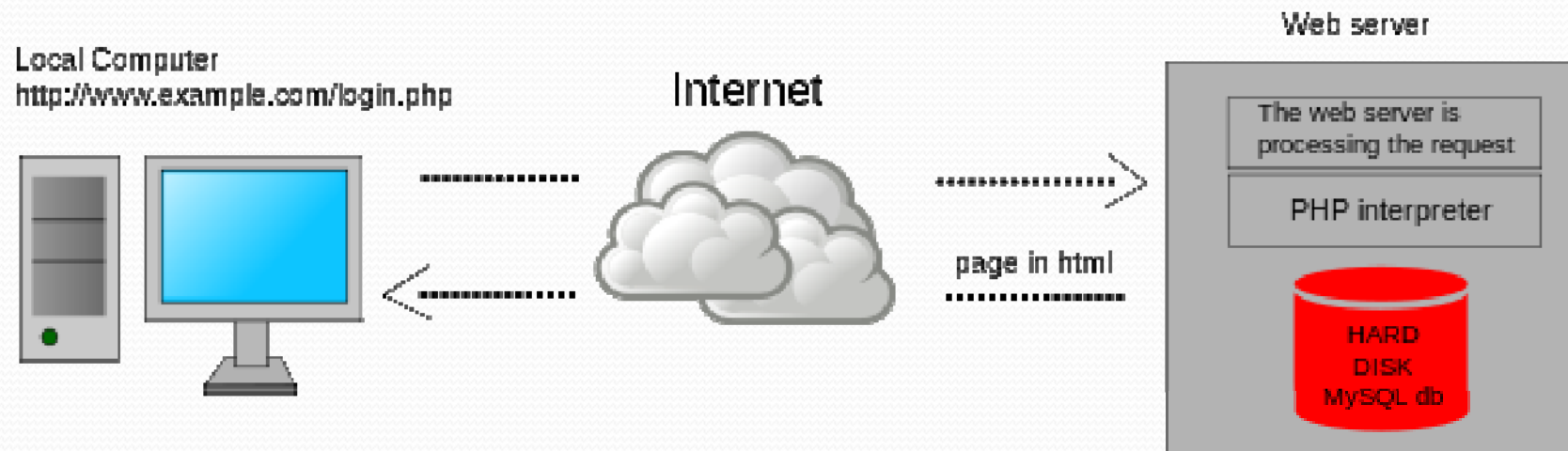
- URL redirection can be used for
 - URL shortening,
 - to prevent broken links when web pages are moved,
 - to allow multiple domain names belonging to the same owner to refer to a single web site,
 - to guide navigation into and out of a website,



Server Side Scripting

- Server-side scripting is a technique used in website design which involves embedding scripts in an HTML source code which results in a user's request to the server website being handled by a script running server-side before the server responds to the client's request.
- The scripts can be written in any of a number of server-side scripting languages available.
- Server-side scripting differs from client-side scripting where embedded scripts, such as JavaScript, are run client-side in the web browser.

Server Side Scripting





Virtual Hosting

- Virtual hosting is a method for hosting multiple domain names (with separate handling of each name) on a single server (or pool of servers).
- This allows one server to share its resources, such as memory and processor cycles, without requiring all services provided to use the same host name.

Some Popular Web Servers

- [Apache](#) (also known as HTTPD)
 - Comes free with Linux
 - Is the A in the LAMP stack
- [Tomcat](#)
 - Technically more than a WebServer
 - It is a Java Servlet Engine, where Servlets are user created software extension to the underlying Web Server

What is an Application Server?

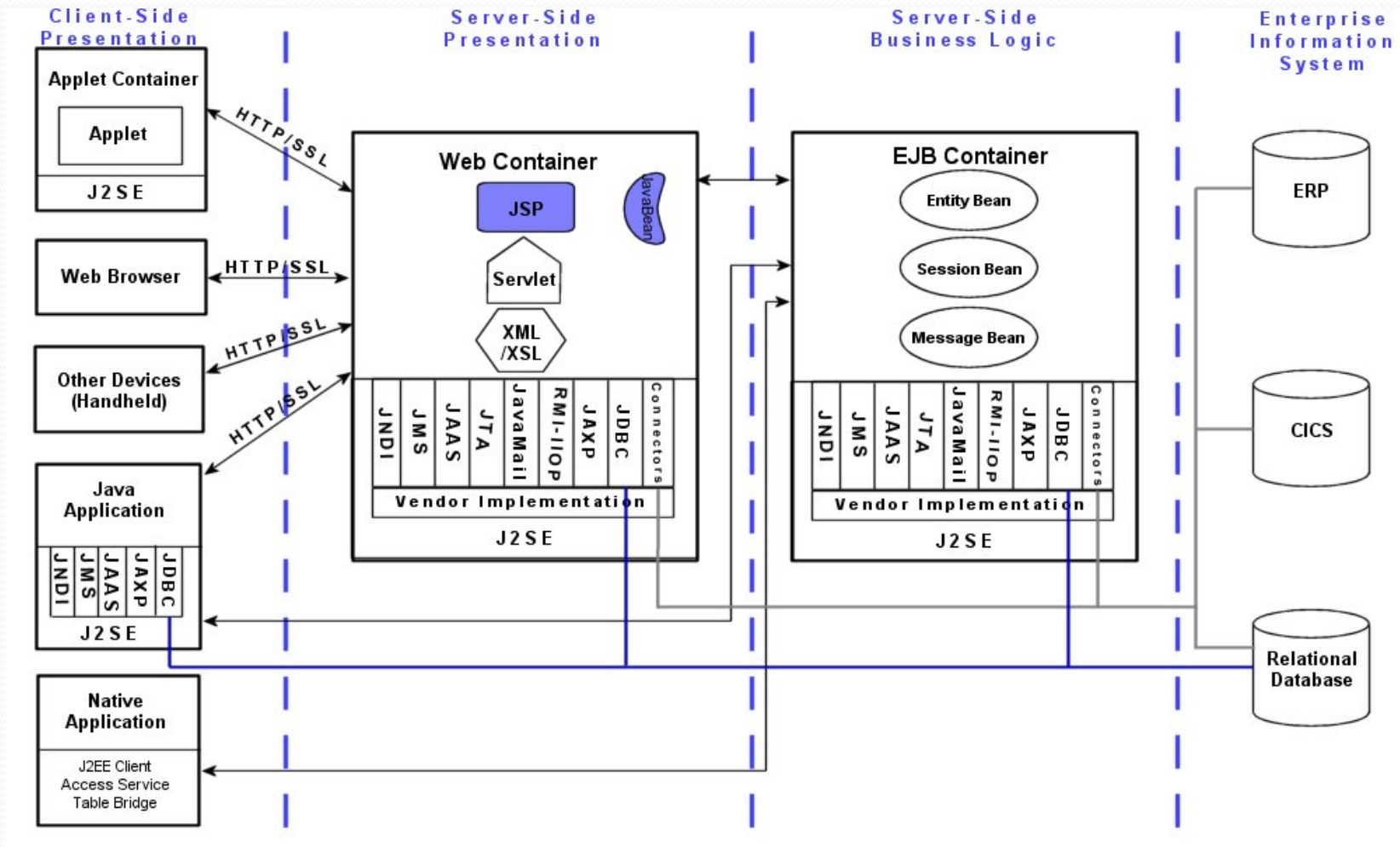
- An application server is a software platform for running one or more applications.
- The application server provides support for such things as
 - Database connections,
 - Threading
 - Message Queue
 - Application administration
 - Load Balancing



What is an Application Server?

- Most Application Servers contain a comprehensive service layer model.
- An application server acts as a set of components accessible to the software developer through an API defined by the platform itself.

Anatomy of a J2EE Application Server



J2EE Application Servers

- There are many J2EE Application servers of the Market
- Commercial
 - [WebLogic](#) (Oracle formerly BEA)
 - [WebSphere](#) (IBM)
- Free
 - [Glassfish](#) (Oracle)
 - [JBoss](#) (RedHat)