**CPET 499/ITC 250 Web Systems**

**Apache HTTP Configuration**

September 25, 2018

**References**

* Apache HTTP Server Project, <http://httpd.apache.org/>
* XAMPP Server, <https://www.apachefriends.org/index.html>
* Wamp Server, <http://www.wampserver.com/en/>
* IIS, <http://www.iis.net/>

**Topics on Web Server**

* Configuration
* Virtual Hosts
* Authentication
* Content Description and Modification
* Indexing
* Redirection
* Proxy
* Logging
* Security
* Running a Big Web Site
* Building Applications
* Server-Side Includes
* PHP
* CGI and Perl
* mod\_perl
* mod\_jserv and Tomcat
* The Apache API
* Writing Apache Modules

**Server Administration Knowledge/Skills**

* Building, Installation, Upgrading
* Configuration
  + Configuration Files
  + Configuration Sections
* Starting, Stopping, Restarting
* Adding common modules
* Logging
* Virtual Hosts
* Aliases, Redirecting, and Rewriting
* Security
* Installing SSL
* Dynamic Content
  + Enabling CGI scripts, PHP, Perl, Python
* Error Handling
* Proxies
* Performance
* Directory Listings

**Apache Web Server - XAMPP**

* C:/xamp
  + apache
  + cgi-bin
  + contrib
  + htdocs
  + licenses
  + local
  + mysql
  + perl
  + php
  + phpMyAdmin
  + sendmail
  + tmp
  + tomcat
  + webdav

**C:/xampp/apache**

* + /bin
  + /conf/httpd.conf …… **the configuration file**
    - Listening port 80 (default)
    - LoadModule
    - ServerName localhost:80
    - DocumentRoot “C:/xampp/htdocs”
    - <Directory “C:/xampp/htdocs”> … </Directory>
    - <Directory “C:/xampp/cgi-bin”> … </Directory>
  + /conf/exta
  + /conf/original
  + /conf/ssl.crt
  + /conf/ssl.csr
  + /conf/ssl.key
  + /error
  + /icons
  + /include
  + /lib
  + /logs
  + /manual
  + /modules
  + /scripts
* htdocs
  + /dashbpard
  + /img
  + /webalizer
  + /xampp
  + Index.php
* cgi-bin
  + cgi.cgi
  + perltest.cgi
  + printenv.cgi
* php
* perl
* phpMyAdmin

**Apache Directive Index**, <http://httpd.apache.org/docs/current/mod/directives.html>   
**Block Directives**

* + <Directory> … </Directory>
  + <DirectoryMatch> … <DirectoryMatch>
  + <Files> … </Files>
  + <FilesMatch> … </FilesMatch>
  + <IfDefine> … </IfDefine>
  + <IfModule> … <IfModule>
  + <IfVersion> …. <IfVersion
  + <Limit> … <LimitExcept>
  + <Location> … <Location>
  + <LocationMatch> … <LocationMatch>
  + <VirtualHost> … <VirtualHost>
* Configuration Directives

<Directory> .. </Directory>

<Files>

<VirtualHost>, <http://httpd.apache.org/docs/current/mod/core.html#virtualhost>

<VirtualHost host[:port]>

..

<VirtualHost>

<Directory “C:/xampp/htdocs”>

Options Indexes FollowsSymLinks Includes ExecCGI

AllowOverride All

Require all granted

</Directory>

**Window Commands**

* net start apache
* net stop apache

**Apache and Domain Name Servers**

* Multiple sites (Linux)
  + Utility ifconfig => binds IP addresses to physical interfaces
* Multiple sites: (Windows)

**Virtual Host and Examples,** [**https://httpd.apache.org/docs/current/vhosts/examples.html**](https://httpd.apache.org/docs/current/vhosts/examples.html)

* **Running several name-based web sites on a single IP address**
  + One IP address
  + Multiple aliases point to this machine in DNS
  + Example: run a web server for [www.example.com](http://www.example.com) and [www.example.org](http://www.example.org) on this machine
* **Name-based hosts on more than IP address**
  + Two IP address (any number of IP)
* **Serving the name content on different IP addresses** (such as an internal and external address)
* **Running different sites on different ports**
* **IP-based virtual hosting**
  + Listen to port 80
  + Two server names: [www.example.com](http://www.example.com); [www.example.org](http://www.example.org)
* **Mixed port-based and IP-based virtual hosts**
  + Two IP addresses
  + Run hosts on port 80 and 8080
* **Mixed name-based and IP-based vvhosts**
* **Using Virtual\_host and mod\_proxy together**
* **Using\_default\_vhosts**
* **Migrating a name-based vhosts to an IP-based vhost**
* **Using the ServerPath directive**

**Virtual Host Examples**, <https://httpd.apache.org/docs/current/vhosts/examples.html>

* VirtualHost Example, <http://httpd.apache.org/docs/2.2/mod/core.html#virtualhost>

<VirtualHost 10.1.2.3:80>  
ServerAdmin webmaster@host.example.com  
DocumentRoot /www/docs/host.example.com  
ServerName host.example.com  
ErrorLog logs/host.example.com-error\_log  
TransferLog logs/host.example.com-access\_log  
</VirtualHost>

* IPv6 Example

<VirtualHost [2001:db8::a00:20ff:fea7:ccea]:80>  
ServerAdmin webmaster@host.example.com  
DocumentRoot /www/docs/host.example.com  
ServerName host.example.com  
ErrorLog logs/host.example.com-error\_log  
TransferLog logs/host.example.com-access\_log  
</VirtualHost>

* + Running several name-based web sites on a single IP address

Server configuration:

# Ensure that Apache listens on port 80  
Listen 80  
  
# Listen for virtual host requests on all IP addresses  
NameVirtualHost \*:80  
  
<VirtualHost \*:80>  
DocumentRoot /www/example1  
ServerName www.example.com  
  
# Other directives here  
</VirtualHost>  
  
<VirtualHost \*:80>  
DocumentRoot /www/example2  
ServerName www.example.org  
  
# Other directives here  
  
</VirtualHost>

* + Name-based hosts on more than one IP address.

Two IP addresses: 172.20.30.40; 172.20.30.50

Server configuration:

Listen 80  
  
# This is the "main" server running on 172.20.30.40  
ServerName server.domain.com  
DocumentRoot /www/mainserver  
  
# This is the other address  
NameVirtualHost 172.20.30.50  
  
<VirtualHost 172.20.30.50>  
DocumentRoot /www/example1  
ServerName www.example.com  
  
# Other directives here ...  
  
</VirtualHost>  
  
<VirtualHost 172.20.30.50>  
DocumentRoot /www/example2  
ServerName www.example.org  
  
# Other directives here ...  
  
</VirtualHost>

**Apache or XAMPP Startup Problem**

**See what’s Using Port 80:  
1) start => command OR from XAMPP Control panel: Shell**

**2) netstat –ao**

* TCP 0.0.0.0:80 PID 4

**3) Task Manager**

Kill the process from Task Manager (but unsuccessful)

NT Kernel & System?

**4) from Windows Control Panel => Administrative Tools => Services**

**Problem (A) Web Development Agent Service is using port 80**

* Opening Up Port 80 for Apache to Use on Windows,

<http://www.devside.net/wamp-server/opening-up-port-80-for-apache-to-use-on-windows>

* Control Panel > System and Security > Administrative Tools => Service > Web Deployment Agent Service (STOP this service)
* Then restart the XAMPP

**Problem (B) NI System Web Server is using port 80**

* **Click on “Stop the Service”**
* **Then restart the XAMPP**

**Problem (C) SQL Server Reporting Services (SQLEXPRESS)**

* **Yet NOT ABLE to solve the problem:**

**Problem (D)**

* **Using NET STOP HTTP command to stop HTTP service**
* **C:\neT stop http/y**
* **C:\sc config http start=disabled**

**Problem (E)**

* **C:\net stop PeerDistSvc**