

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:/xampp
 - 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/extra
- /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>

- **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 and 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; 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 vhosts**
- **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