

# *Apache Configuration*

From Newb to 133t in Three Hours

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# "A PAtCHy server"

- ⇒ HTTP 1.1 Compliant
- ⇒ Customizable
- ⇒ Extensible
- ⇒ Database authentication
- ⇒ Customizable response pages
- ⇒ URL Rewriting and aliasing
- ⇒ Content negotiation
- ⇒ Virtual/Multi-homed servers
- ⇒ Configurable logging

# *History*

- ⇒ Stemmed from NCSA's public domain http server version 1.3
- ⇒ First public release in April 1995 (0.6.2)
- ⇒ Dec 1, 1995 marked version 1.0
- ⇒ Became the #1 web server on the Internet in April 1996
- ⇒ Apache Foundation founded 1999 to provide organizational support

# *MTV Celebrity Death Match*

## Apache 1.3.x

- ⇒ Dynamic Shared Objects to reduce memory footprint
- ⇒ Windows Support
- ⇒ Magic mime-typing
- ⇒ Speling corection module (very underutilized)
- ⇒ SHA1 encrypted passwords

## Apache 2.0.x

- ⇒ Unix Threading
- ⇒ Easier to build
- ⇒ Multiple Protocols
- ⇒ Improved API
- ⇒ Input and output filtering
- ⇒ Multilanguage error response pages
- ⇒ Perl 5 regular expressions
- ⇒ Many new modules

# *Caveats to using Apache 2.0*

- ⇒ Modules and extensions with poor thread-safeness can cause instability
  - But you can run apache in single process mode
    - Red Hat 8 and above run this way
- ⇒ Rumored poor mod\_perl support
- ⇒ Poor PHP support in early versions
  
- ⇒ Most remaining problems are due to thread-safe issues in third party modules.

# *Basic Apache Configuration*

```
ServerRoot          "/etc/httpd"  
ServerAdmin         "webmaster@example.com"  
ServerName          "www.example.com"  
DocumentRoot       "/var/www/html"  
<Directory "/var/www/html">  
    Options          Indexes NoFollowSymLinks  
    AllowOverride    None  
    Order            Allow,Deny  
    Allow            from all  
</Directory>  
  
Alias /manual       "/var/www/manual"  
Include conf.d/*.conf
```

# *What's up with /etc/httpd/conf.d?*

- ⇒ Application specific configuration
- ⇒ Allows Apache to be more modular
- ⇒ Keep httpd.conf small
- ⇒ Allows the shipping of conf files with packages
- ⇒ Examples:
  - ssl.conf
  - mailman.conf
  - php.conf
  - squirrelmail.conf

# *Setting up PHP*

```
#Contents of /etc/httpd/conf.d/php.conf
```

```
# Load the PHP module
```

```
LoadModule php4_module modules/libphp4.so
```

```
#Add the application handler
```

```
AddType application/x-httpd-php .php
```

```
#Optionally pretty the source for display
```

```
#AddType application/x-httpd-php-source .phps
```

```
#Turn on the use of index.php as the Index page
```

```
DirectoryIndex index.php
```

# *Symmetric Key Encryption*

- ⇒ One key shared between partners
  - The same key encrypts and decrypts
- ⇒ Must be shared through trusted and secure channels

# *Public Key (Asymmetric) Encryption Basics*

- ⇒ Relies on Trust
  - Trust is bestowed in many manners
    - Centralized Certificate Authorities (Verisign)
    - Distributed Trust networks (GPG)
- ⇒ Private Key
- ⇒ Public Key

These keys are usually used to share a symmetric key for all other transmissions

Asymmetric keys are processor intensive, and therefore are only used for “handshaking.”

# *Generating a Self Signed Certificate*

```
# openssl genrsa -des3 1024 > server.key
```

```
# openssl req -new -key server.key -out \
server.csr
```

At this point, you can send your csr to a CA for signing.

To sign it yourself:

```
# openssl req -new -key server.key -x509 \
-days 365 -out server.crt
```

To sign it with a previously generated CA certificate:

```
# openssl x509 -req -days 360 -in server.csr \
-signkey CA.key -out server.crt
```

# *Virtual Hosting*

- ⇒ Only one SSL certificate per IP address
  - SSL connections are handled before a host-name is sent with the request
- ⇒ Can virtualize on hostname or IP address

# *Basic Authentication*

- ➔ Used to protect content from casual web surfers
- ➔ Not a secure protection method
- ➔ Tie with SSL to provide adequate protection

# *Doing Per Directory Configuration*

- ➔ Use a `<Directory/>` entry in `/etc/httpd/conf/httpd.conf`
- ➔ Use a `<Directory/>` entry in `/etc/httpd/conf.d/foo.conf`
- ➔ Use a `<Directory/>` entry in some other file included into one of the above
- ➔ If all else fails, or if you do not have write access to the above configuration files, you can use a `.htaccess`
- ➔ **BUT DON'T UNLESS YOU HAVE TO**
  - Performance hits, security issues, etc.

# *.htaccess File Format*

- ⇒ Uses a limited set of configuration directives as allowed in .conf files.
- ⇒ Usage restricted by the “AllowOverride” directive.
- ⇒ Example, Basic Auth using .htaccess
  - Don't try this at home, use <Directory/> instead

# *Links and References*

- ⇒ Apache Directive Quick Reference:
  - <http://httpd.apache.org/docs-2.0/mod/quickreference.html>
- ⇒ PHP Website:
  - <http://php.net>
- ⇒ Web applications:
  - Drupal (CMS): <http://www.drupal.org>
  - Squirrelmail (Webmail): <http://squirrelmail.org>
  - S9y (Weblog): <http://s9y.org>
  - NetJuke (Juke Box, and streamer): <http://netjuke.org>
  - CVSweb

# *Some Cool Toys*

- ➔ S9Y
- ➔ Drupal
- ➔ NetJuke