Apache Web Server

Quick and Dirty
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for AfNOG 2011

(Originally by Joel Jaeggli for AfNOG 2007)

About Apache

- Apache http server project
- http://httpd.apache.org
- Apache foundation started to support the web server project, but now extends to a multitude of other projects.

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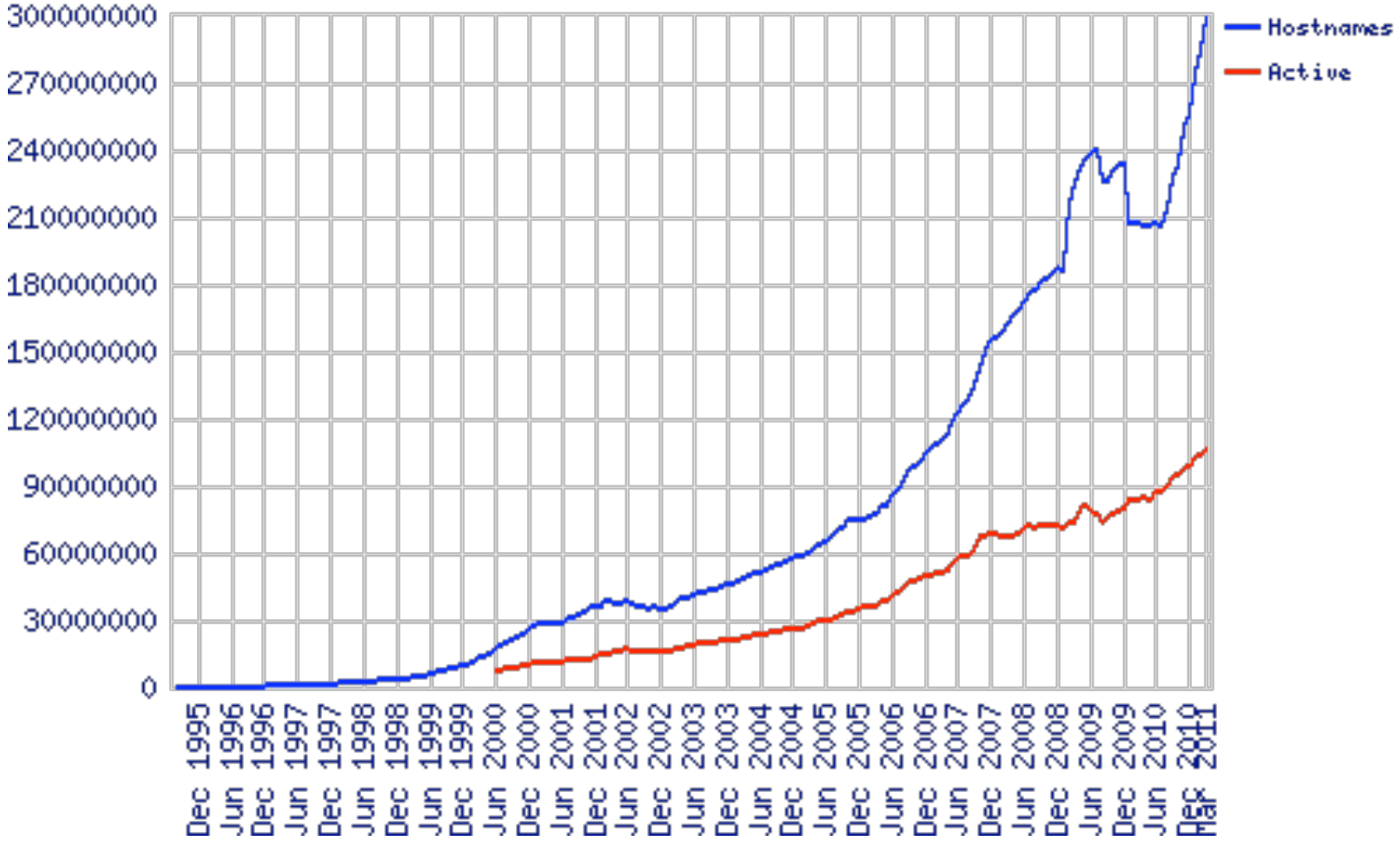
Stats of Web Server types



http://news.netcraft.com/archives/2011/03/09/march-2011-web-server-survey.html

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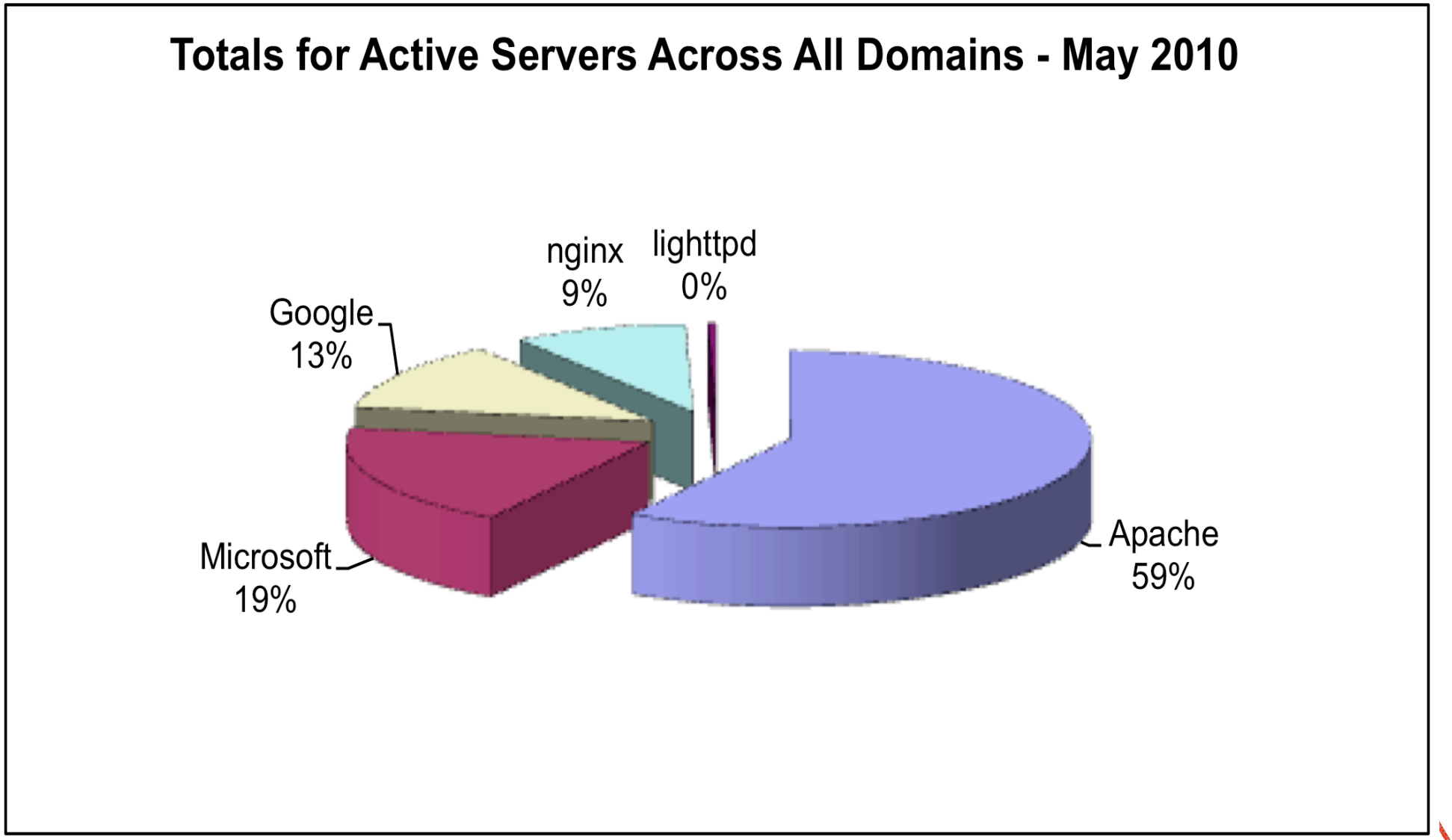
What the Busiest 1M Websites use

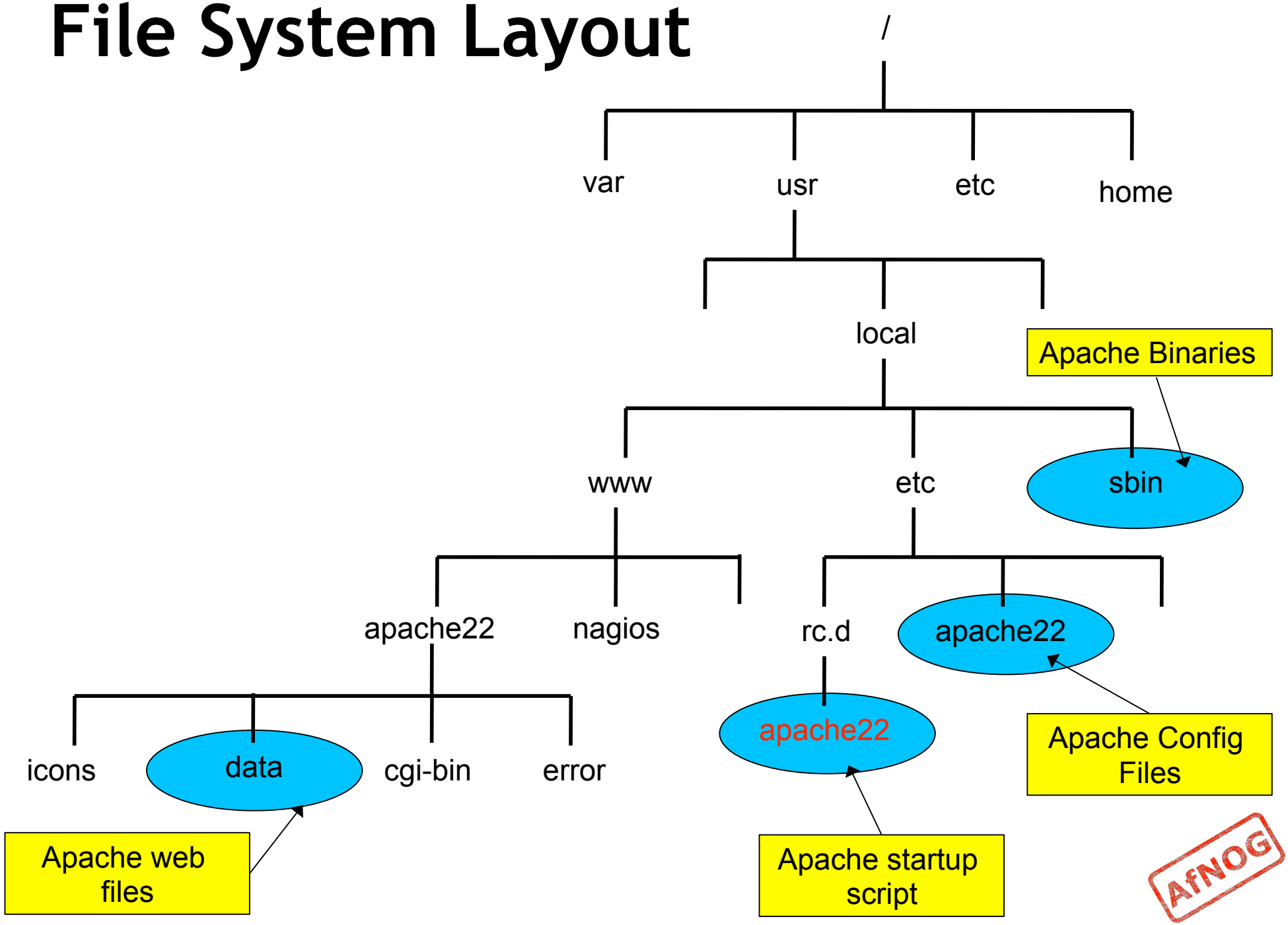


Apache Installation on FreeBSD

- Apache can be installed from Ports

  /usr/ports/www/apache22
- Can be installed from pkg_add
- Or from source if one requires a more recent version than what's on FreeBSD source ports tree

File System Layout



Starting Apache

- Startup script is `/usr/local/etc/rc.d/apache22`
- Take a look in startup script `/usr/local/etc/rc.d/apache22`
- Add `apache22_enable="YES"` to `/etc/rc.conf`
- Run `/usr/local/etc/rc.d/apache22 start`
- Restart

```
$ apachectl restart
```

Apache SSL

- Secure Socket Layer (SSL) port is 443
- SSL is important to protect communication between client browser and web-server
- Requires the creation of SSL certificates and Certificate Signing Requests (CSR)
- For integrity, SSL certificates are signed by a Certificate Authority's (CA) such as Verisign
- Self signed Certificates will also work but your browser will not trust it and will give a warning to users (which most don't read)
- *Refer to the Creating SSL Certificate Exercise Section*

How SSL Works

- Each SSL certificate has a Public and Private key
- The Public Key is used to encrypt the information
- The Public Key is accessible to everyone
- The private Key is used to decipher the information
- The private should be not be disclosed

Role of Certificate Authority

- There are a number of CA that certify certificates
- Most browsers have pre-included public Keys from the CA's
- A CA certified certificate will have validation information signed by the CA's private key
- The browser will decrypt the validation information using the public key and verify that the certificate is certified by the CA
- If this fails a warning is given

Virtual Hosting

- Apache Provides multiple options of virtual hosting and scales
  - Name Based virtual hosts
  - IP Based Virtual Hosts
  - Aliases
- Its recommended to use name based virtual hosting over IP based hosting in virtual hosting configuration
- *Refer to virtual hosting Exercise section*

Installing PHP & Mysql

- PhP and Mysql implementations have increased driven mainly by development requests
- LAMP and WAMP are the most common implementations
- FreeBSD = “FAMP” ? http://geekybits.blogspot.com/2007/09/creating-famp-server.html
- Installation via ports and relatively straight forward
- *See PHP & Mysql installation exercise section*

Apache and IPv6

- Apache supports IPv4 and IPv6 by default
- Set the listen option to port 80 will listen for both IPv4 and IPv6
- listen option with IPv4 and IPv6 specific addresses will invoke different sockets for each protocol

  Listen 196.200.219.xx:80

  Listen [2001:4348:0:219:196.200.219:xx]:80

- *Refer to IPv6 & php test exercise*

Start Apache!

- `/usr/local/etc/rc.d/apache22 start`
- Check that you can access `http://localhost` in your browser
- Check that you can access `https://localhost` in your browser, and that you get a certificate warning
- Click on the padlock icon in your browser and check that the certificate details are correct
- Profit!

Apache implementations

- Apache is widely used to serve many content applications
- Webmail, Blogs, Wiki's, CMS etc
- Attempt to install wordpress and configure it

Start Exercises