

Unix System Administration

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Apache Aliases

- Allows modification of the default web directory
 - Can make subsets of URLs point to different places on the local filesystem
- ```
Alias /ftp /var/ftp
<Directory /var/ftp>
 Order deny,allow
 Deny from all
 Allow from 128.138.202.8
</Directory>
```
- Remember to set permissions on the aliased directory (on the filesystem!)

# Apache Rewrites

- Requires a special module to be installed
  - Use `a2enmod` to enable modules
    - You'll use this command for both `ssl` and `rewrites`
- Use regular expressions for matching
  - Then specify new URL and return code
- Must enable rewrites with a directive
  - `RewriteEngine On`
- (Maybe) match some conditions before rewrite:
  - `RewriteCond %{HTTP_HOST} "^cs\.colorado\.edu" [NC]`
- Rewrite a URL:
  - `RewriteRule "(.*)$" "http://www.cs.colorado.edu$1" [L,R]`

# Apache Documentation

- Always useful (but can be cryptic)
- mod\_ssl
  - [http://httpd.apache.org/docs/2.0/mod/mod\\_ssl.html](http://httpd.apache.org/docs/2.0/mod/mod_ssl.html)
- mod\_rewrite
  - [http://httpd.apache.org/docs/2.0/mod/mod\\_rewrite.html](http://httpd.apache.org/docs/2.0/mod/mod_rewrite.html)
- General Apache config
  - <http://httpd.apache.org/docs/2.0/mod/directives.html>

# Apache Logs

- Under `/var/log/apache2`
- Access and error logs exist here
  - “access.log” for all standard queries
  - “error.log” for all errors (4xx, 5xx)
- Different log format than standard logs
  - IP addresses, date, and query
  - Return code (200 OK, 404 not found, etc)
  - User agent (browser type and version)
    - This is how browser-specific pages are served up

# Proxies

- Content management and filtering for layer 4
- Very similar to firewalls for layer 2,3 filtering
- Filtering done based on headers only
  - It's illegal to look at content of data without consent!
  - Federal level felony, equivalent to opening someone else's mail
- Usually used as gateways in a company for web access
  - Prevent people from wasting time!
  - There can be interesting ways around this though

# Open Proxies

- Badness! You get calls from the FBI...
- Gamedev.cs.colorado.edu Apache config:
  - ProxyRequests on
  - Allows webserver to handle remote requests
- Proxy scans occur constantly on web servers
  - Used as a means to hide origination machine
- Gamedev machine used to download websites
  - amazon.com, interscience.wiley.com, sciencedirect.com, springerlink.com

# Finding Open Proxies

- Simply query webserver for URL not hosted
- `GET http://www.scanproxy.com:80/px_judge.php?p=80 HTTP/1.0" 404 ...`
  - Notice the 404! This means file-not-found
  - Which is what we expect since we aren't hosting that site
- If that said 200OK, we are an open proxy!
  - And bad people start using us as such
- If you're going to run a proxy, use something like Squid Cache and lock it down carefully!

# PHP

- PHP: PHP Hypertext Processor
  - Recursive name geeks at work
- C-like syntax, no types on variables
- Don't have to include anything for functions
  - All functions are available by default
- Fantastic website with function lists and uses
  - <http://www.php.net/manual/en>
- Yet another tool for a sysadmin
  - Sometimes we gotta do some programming

# PHP Invocation

- PHP is built for the web by default
  - But can be used for command line scripts
- For web, libphp4.so or libphp5.so must be loaded in Apache
  - .so (shared object) is equivalent to .dll (dynamic link library) under windows
- For command line, an interpreter exists
  - `/usr/bin/php`
  - Works similar to `/bin/bash` for interpreting scripts
  - `#!/usr/bin/php -q`

# PHP Files

- By default, files are read as text
  - For presentation to a browser as HTML
- Code must be included in special tags
  - ```
#!/usr/bin/php -q  
<?php  
print "Hello world\n";  
?>
```
- If tags don't exist, text is printed verbatim
 - This is to allow easy typing of HTML without having to 'print' each and every line of HTML

PHP Syntax

- Again, C/C++ like syntax, without types
 - Also you can get away without use of parenthesis sometimes
- Squiggly brackets **must** be used
 - For if/for/while statements, even if they're one line
 - ```
if($bigSays == "Do work son.") {
 doWork();
}
```
- Variables do NOT have to be defined before use
  - ```
$command = "dig cs.colorado.edu mx";
```

PHP Examples

- They're friggin' everywhere
 - And a lot of them are bad too
 - No sense of good coding standards
 - Lots of insecure code
- Lab06 has PHP examples in part 4
 - Take a look, but they aren't the best either
 - I should know, I wrote 2/3 of them
- Writing secure code is important for us all
 - Sysadmins have to worry about bad code running on systems, lots of exploits are out there