Using Scripts to Deliver Dynamic Content

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CGI Scripts

Dynamic content can be created for your site using scripts. This is provided by Common Gateway Interface with scripts created in languages such as PERL or even BASH.

```
Root Filesystem

    /dev/vda2 xfs 8.8G 1.1G 7.7G 13% /

Swap Filesystem

    /dev/vda1 partition 262140 0 -1
```

```
LoadModule alias_module modules/mod_alias.so

LoadModule cgid_module modules/mod_cgid.so
```

Adding Modules

Our Server configuration within the httpd.conf will require two additional modules. The CGI External Daemon Module allows script execution and the Alias Module to allow us to create directory aliases.

```
ScriptAlias "/cgi-bin/" "/srv/cgi-bin"

<Directory /srv/cgi-bin>
   AddHandler cgi-script .sh .pl
   Options +ExecCGI
   Require all granted
</Directory>
```

VHosts Settings

Adding a **ScriptAlias** allows us to have executable content in a central directory. Within the Directory block we allow the CGI module to be used with .pl and .sh files and ensure they can be executed.

```bash
#!/bin/bash
echo 'Content-type: text/html'
echo ''
echo "<h1>$(uname -n)</h1>"
echo "<h2>Root Filesystem</h2>"
echo "$(df -hT / | grep -v Filesystem ) "
echo "<h2>Swap Filesystem</h2>"
echo "$(swapon -s | grep -v File)"
```

A Simple Shell Script

The echo command is used to print text to the browser. The output from commands can be displayed using either back ticks or $( ). Within our example the file should be saved in the /srv/cgi-bin directory

Configuring BASH Scripts in Apache

.htaccess

A .htaccess file provides a way to make configuration changes on a per-directory basis without the need of restarting the server when configuration changes are made.

```
AddHandler cgi-script .sh .pl
Options +ExecCGI
Require all granted
```

.htaccess Settings

As an alternative to adding the settings within the virtual host we can create a .htaccess file. Add this file to the /srv/cgi-bin folder.

```
AllowOverride none # Used where .htaccess files are not
required. Use of these files slows the server down

AllowOverride all # Where tenants are allowed complete use
of .htaccess files

AllowOverride AuthConfig Options FileInfo # Where tenants
have a restricted set of options that are allowed from
.htaccess files
```

Configuring .htaccess Security

Implementing .htaccess Files

```
# pacman -S php php-apache
```

Install PHP

PHP is often used with Apache to create dynamic content. Many distributions now use PHP 7.

```
#LoadModule mpm_event_module modules/mod_mpm_event.so

LoadModule mpm_prefork_module modules/mod_mpm_prefork.so

Include conf/extra/php7_module.conf
```

httpd.conf

The PHP 7 module does not work in threaded MPM mode so we need to run Apache in pre-fork mode. The rest of the PHP configuration can be made using an include file.

```
LoadModule php7_module modules/libphp7.so

AddHandler php7-script .php
```

php7_module.conf

We can load the PHP module and associate .php files with it from the php7 configuration file

```php
<?php phpinfo(); ?>
```

Simple PHP Test Page

The phpinfo function is often used as a simple test. This can be saved in the DocumentRoot as test.php
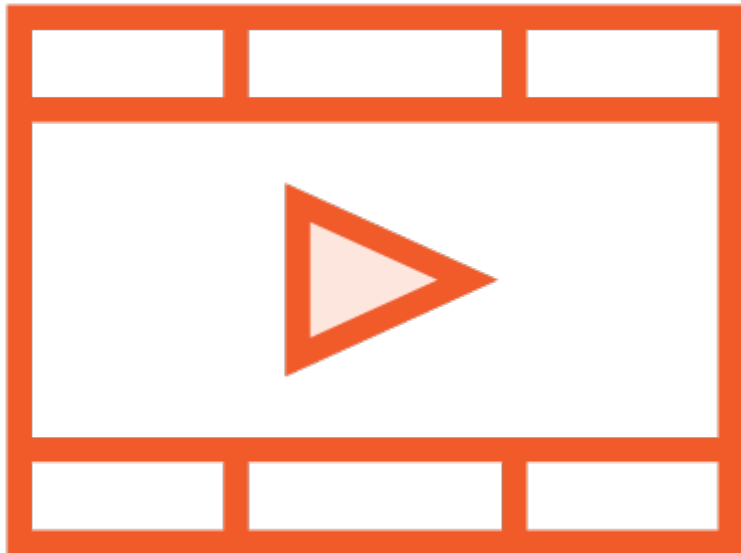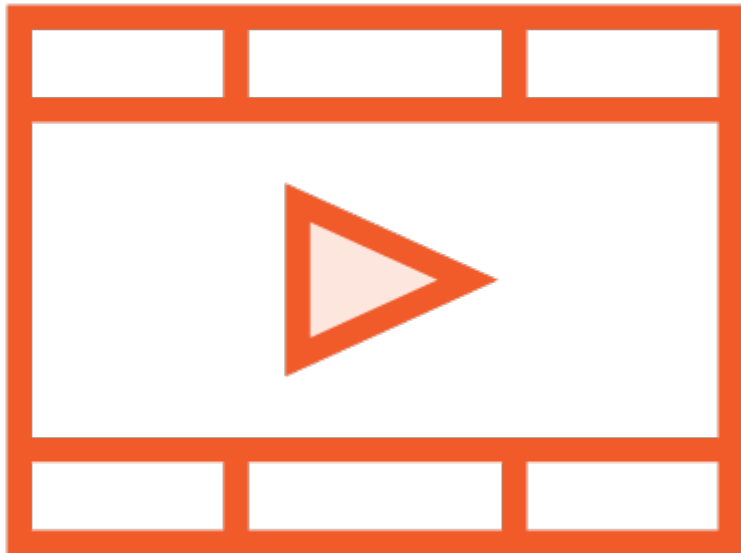
Configuring PHP

Configuring CGI

Running CGI Scripts we load the module:
cgid_module

To use aliases such as ScriptAliases we also need:
alias_module

A script alias allows for a central directory to be used for scripts:
ScriptAlias "/cgi-bin/" "/srv/cgi-bin/"

.htaccess

Using .htaccess files allows for tenants to manage elements of their own virtual host configuration:
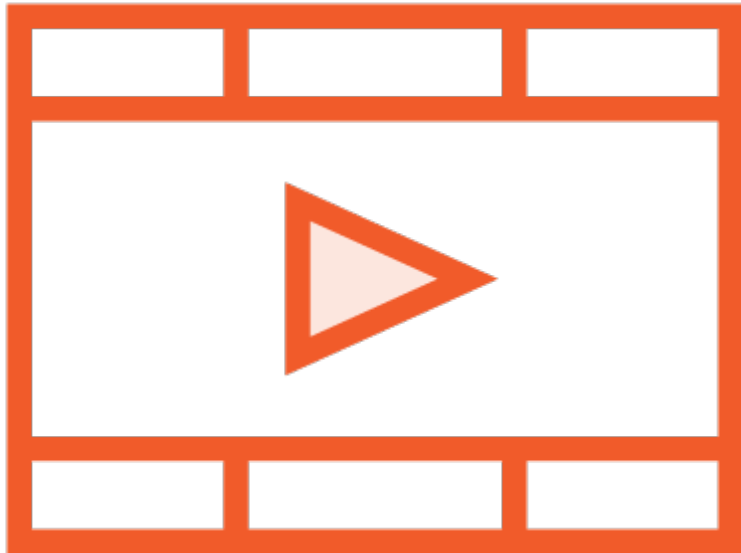AddHandler cgi-script .sh .pl
Options +ExecCGI
Require all granted

The Virtual Host needs to be configured to look for .htaccess settings:
AllowOverride AuthConfig Options FileInfo

Install PHP

Install PHP:
pacman -S php php-apache

Configure HTTPD:
LoadModule mpm_prefork_module ...
Include conf/extra/php7_module.conf

Configure PHP:
LoadModule php7_module ...
AddHandler php7-script .php

Next up: Securing Apache with HTTPS