

Enable CGI Scripts on Apache

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Learn how to enable CGI scripts to run on the Apache web server. This tutorial includes step-by-step instructions for adding the necessary Apache configurations to allow CGI scripts to run, and how to set the correct permissions on the directory and CGI files.

Requirements

- A Cloud Server with CentOS 7 or Ubuntu 16.04 and Apache installed and running.

Note: Apache is installed and running on a Standard Linux installation by default. If your server was created with a Minimal installation, you will need to install and configure Apache before you proceed.

Enable CGI Scripts in the Apache Configurations

Overview: Two things need to be set up, in order to run CGI scripts on a Linux server with Apache:

- Apache needs to be configured to allow CGI scripts to run.
- The script needs to be uploaded to the correct location, and given the correct permissions.

Apache Settings for CGI Scripts on CentOS 7

Open the `httpd.conf` file for editing:

```
sudo nano /etc/httpd/conf/httpd.conf
```

Find the section which reads:

```
#
# "/var/www/cgi-bin" should be changed to whatever your ScriptAliased
# CGI directory exists, if you have that configured.
#
<Directory "/var/www/cgi-bin">
    AllowOverride None
    Options None
    Require all granted
</Directory>
```

Add the following two lines to this section:

```
Options +ExecCGI
```

```
AddHandler cgi-script .cgi .pl .py
```

The first line tells Apache to execute CGI files which are uploaded to the `/var/www/cgi-bin` directory. The second line tells Apache that any file ending in `.cgi`, `.pl`, or `.py` is considered a CGI script.

The section now reads:

```
#
# "/var/www/cgi-bin" should be changed to whatever your ScriptAliased
# CGI directory exists, if you have that configured.
#
<Directory "/var/www/cgi-bin">
    AllowOverride None
    Options +ExecCGI
    AddHandler cgi-script .cgi .pl
    Require all granted
</Directory>
```

Save and exit the file. Then restart Apache so that the changes take effect:

```
sudo systemctl restart httpd
```

Apache Settings for CGI Scripts on Ubuntu 16.04

On Ubuntu 16.04, Apache is configured by default to allow the execution of CGI scripts in the designated `/usr/lib/cgi-bin` directory. You will not need to change any Apache configurations.

However, Apache's CGI module will need to be enabled before CGI scripts can run. To do this, you will need to create a symlink:

```
sudo ln -s /etc/apache2/mods-available/cgi.load /etc/apache2/mods-enabled/
```

Then restart Apache so that the changes take effect:

```
sudo systemctl restart apache2
```

Upload the CGI Script and Set Permissions

To verify the CGI script functionality on your server, we recommend starting with a test script. Create the file `test.cgi` in the server's designated `cgi-bin` and open it for editing:

- **CentOS 7:** `sudo nano /var/www/cgi-bin/test.cgi`
- **Ubuntu 16.04:** `sudo nano /usr/lib/cgi-bin/test.cgi`

Add the following content to this file:

```
#!/usr/bin/perl
print "Content-type: text/html\n\n";
print "<h1>Hello world</h1>";
```

Save and exit the file.

Next, give the file the correct executable permissions:

- **CentOS 7:** `sudo chmod 755 /var/www/cgi-bin/test.cgi`
- **Ubuntu 16.04:** `sudo chmod 755 /usr/lib/cgi-bin/test.cgi`

View the script in a browser, using either the domain name or IP address:

```
http://example.com/cgi-bin/test.cgi
http://192.168.0.1/cgi-bin/test.cgi
```

You will see "Hello world."

Troubleshooting CGI Script Errors

404 error: This means that the URL is not found. Check that the script has been added to the correct directory.

- **CentOS 7:** The default CGI directory is `var/www/cgi-bin/`
- **Ubuntu 16.04:** The default CGI directory is `/usr/lib/cgi-bin`

Server 500 error: This means that the script does not have the correct permissions. Check that the script has executable (`chmod 755`) permissions:

```
jdoe@localhost:/etc/apache2# ll /usr/lib/cgi-bin/test.cgi
-rwxr-xr-x 1 jdoe jdoe 85 Jul 22 16:53 /usr/lib/cgi-bin/test.cgi*
```

The correct permissions for the file are `rwxr-xr-x`.

This document is available online at the following address:

<https://www.ionos.com/community/server-cloud-infrastructure/apache/enable-cgi-scripts-on-apache/>

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