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**4. Web Server Administration**

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Web Application Deployment

2nd C-VET Web Application Development

Index

[Apache exercises 3](#1Apache exercisesC|toxmark)

# Apache exercises

**Step 1: Install the Apache2 Server**

Verify that Apache2 is installed and running by opening a browser and navigating to http://localhost. Attach screenshots.

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**Step 2: Check the Version**

Use the command apache2 -v to check the installed version. Attach a screenshot.



**Step 3: Create a Welcome Page**

Replace the default welcome page with a custom one:

* Navigate to /var/www/html/.
* Rename the existing index.html file.
* Create a new index.html file with the following content:

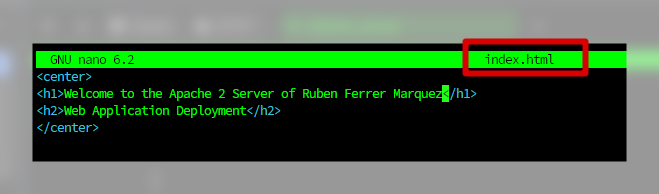
**<center>**

**<h1>**Welcome to the Apache 2 Server of [Your Name]**</h1>**

**<h2>**Web Application Deployment**</h2>**

**</center>**

Replace [Your Name] with your own name. Refresh the browser, and the new page should appear. Attach screenshots.



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**Step 4: Update Apache2 Configuration File**

* Make a backup of /etc/apache2/apache2.conf.
* Add the following lines to the configuration file:

*# Basic Configuration File (/etc/apache2/apache2.conf)*

ServerRoot "/etc/apache2"

DocumentRoot "/var/www/html"

PidFile /var/run/apache2/apache2.pid

User www-data

Group www-data

ErrorLog /var/log/apache2/error.log

IncludeOptional mods-enabled/\*.load

IncludeOptional mods-enabled/\*.conf

Include ports.conf

IncludeOptional sites-enabled/\*.conf

Restart Apache2 and verify its functionality. Attach screenshots.

Texto

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Interfaz de usuario gráfica, Texto

Descripción generada automáticamente

Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico

Descripción generada automáticamente

**Step 5: Change the Server's Access Name**

Change the access name of the server to www.eihsa.es using either DNS configuration or by editing the /etc/hosts file. Test that the server responds to the new name. Attach screenshots.

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**Step 6: Enable User Web Spaces**

Enable Apache’s module that allows users to host their web pages in personal directories:

* Run: $ sudo a2enmod userdir

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* Each user can create a public\_html folder in their home directory (e.g., /home/username/public\_html).

Texto

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Set appropriate permissions:

* Directory: chmod 755
* Files: chmod 644

Users can access their pages via URLs like http://server\_address/~username. Restart Apache2 and test. Attach screenshots.

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**Step 7: Define Virtual Hosts by Name**

* Create a new configuration file in /etc/apache2/sites-available/ for the new host.

Interfaz de usuario gráfica

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* Set up the directory and create a web page for the host.

Texto

Descripción generada automáticamente

* Enable the site using sudo a2ensite.

Una captura de pantalla de un celular con texto e imagen

Descripción generada automáticamente con confianza media

* Restart Apache2 and verify functionality. Attach screenshots.



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**Step 8: Define Virtual Hosts by IP**

Configure a virtual host accessible via IP address. Test and attach screenshots.

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**Step 9: Define Virtual Hosts by IP and Port**

Set up a virtual host accessible via a specific IP and port. Test and attach screenshots.

**Step 10: Basic HTTP Authentication and Protected Directories**

Add authentication to a directory on the virtual server using mod\_auth\_basic.

Steps to Implement:

1. Create a User

Use the htpasswd command to create a .htpasswd file:

sudo su

htpasswd -c /etc/apache2/passwd/.htpasswd username

Set permissions on .htpasswd to chmod 644.

1. Restrict Access to a Private Directory

Create the directory /var/www/html/virtual/private\_directory and add an index.html file. Add the following configuration to the relevant site file:

**<Directory "/var/www/html/virtual/private\_directory">**

AuthType Basic

AuthName "Private Directory"

AuthUserFile /etc/apache2/passwd/.htpasswd

Require valid-user

**</Directory>**

Restart Apache2 and test access via a browser.

1. Using .htaccess for Authentication

Create a .htaccess file in the directory:

AuthType Basic

AuthName "Private Directory"

AuthUserFile /etc/apache2/passwd/.htpasswd

Require user username

Enable .htaccess in the site configuration by adding:

**<Directory "/var/www/html/virtual/private\_directory">**

AllowOverride AuthConfig

**</Directory>**

Test functionality without restarting Apache2.

1. Digest Authentication

Enable the mod\_auth\_digest module for encrypted authentication. Configure using the htdigest tool to add users and allow access to the protected directory.

**Step 11: Create a Secure Virtual Server with OpenSSL**

Set up a secure virtual server using OpenSSL. Test and attach screenshots.