Web Lab Manual-1: Task 1

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Task 1: Installing and Configuring Apache2 Web Server

Task Objective

The objective of this task is to install, configure, and verify the Apache2 web server on an Ubuntu system. This includes:

- Installing Apache2 web server package
- Configuring the UFW (Uncomplicated Firewall) to allow HTTP and HTTPS traffic
- Verifying the Apache2 service is running and enabled
- Testing the web server functionality through browser access
- Confirming virtual host configurations

Implementation Steps

Step 1: Update System Packages

Before installing new software, it is best practice to update the system package lists and upgrade existing packages to their latest versions.

```
sudo apt update
```

Step 2: Install Apache2

Once the package lists are updated, install Apache2 along with related packages.

```
sudo apt install apache2
```

Step 3: Configure UFW Firewall

Configure the Ubuntu Firewall (UFW) to allow incoming HTTP and HTTPS traffic while maintaining security.

1. Install ufw
    - `sudo apt install ufw`

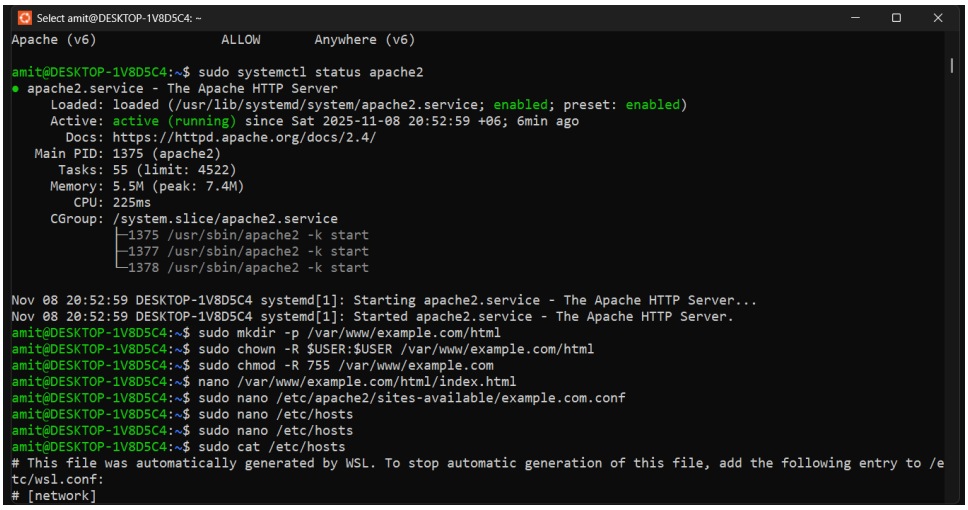
2. List available firewall applications:
    - `sudo ufw app list`
3. Allow Apache through the firewall:
    - `sudo ufw allow 'Apache'`
4. Verify firewall rules:
    - `sudo ufw status`

Step 4: Verify Apache2 Service Status

Check that Apache2 is running and properly configured.

```
sudo systemctl status apache2
```

Terminal Output:



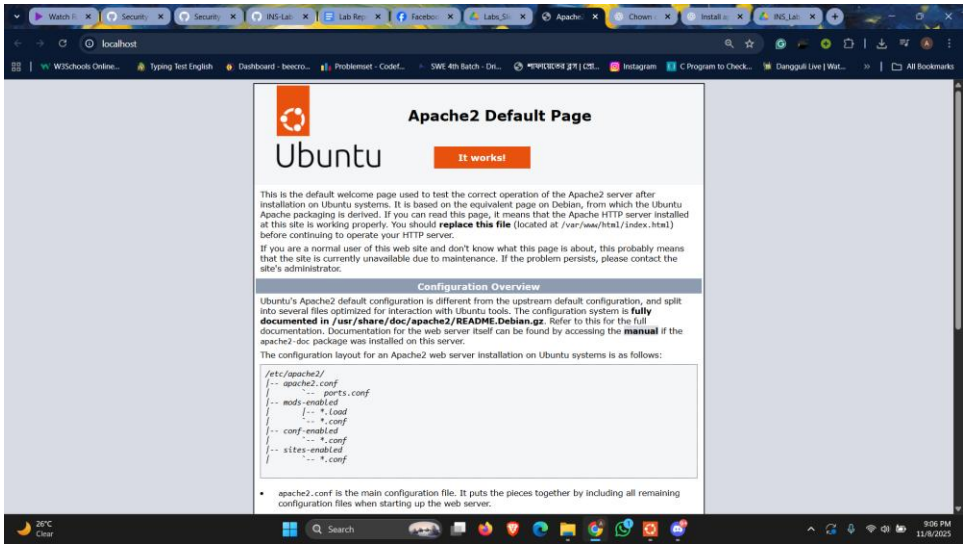
Key information from the status output:

- Service: apache2.service - The Apache HTTP Server
- Status: Loaded and active (running)
- Active state: active (running) since Sat 2025-11-08 08:01:31 UTC
- Main ID: 1375 (apache2)
- Memory usage: 5.5M (peak: 7.4M)

Testing and Verification

Browser Access Test - localhost

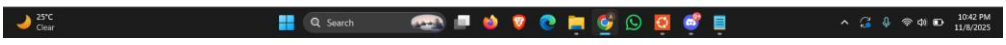
Accessing the Apache2 default page through localhost to verify the web server is serving content correctly.



Result: Apache2 Default Page displays successfully with "It works!" message

Browser Access Test - example.com

Testing access through example.com domain name.



Result: Server block for example.com is successfully working

Browser Access Test - webserverlab.com

Testing access through webserverlab.com domain name.

Result: Server block for webserverlab.com is successfully working

Configuration Details

Apache2 Directory Structure

Ubuntu's Apache2 default configuration is organized as follows:

```
/etc/apache2/
├── apache2.conf           (Main configuration file)
├── ports.conf             (Port configuration)
├── mods-enabled/          (Enabled modules)
│   └── *.load, *.conf
├── conf-enabled/          (Enabled configurations)
│   └── *.conf
└── sites-enabled/         (Enabled virtual host configurations)
    └── *.conf
```