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| **AIM:** | To implement Apache server on a Linux machine |
| **THEORY:** | **APACHE WEB SERVER**  Apache is the most commonly used Web server on Linux systems. Web servers are used to serve Web pages requested by client computers. Clients typically request and view Web pages using Web browser applications such as Firefox, Opera, Chromium, or Internet Explorer.  Users enter a Uniform Resource Locator (URL) to point to a Web server by means of its Fully Qualified Domain Name (FQDN) and a path to the required resource.  The most common protocol used to transfer Web pages is the Hyper Text Transfer Protocol (HTTP). Protocols such as Hyper Text Transfer Protocol over Secure Sockets Layer (HTTPS), and File Transfer Protocol (FTP), a protocol for uploading and downloading files, are also supported.  Apache Web Servers are often used in combination with the MySQL database engine, the HyperText Preprocessor (PHP) scripting language, and other popular scripting languages such as Python and Perl. This configuration is termed LAMP (Linux, Apache, MySQL and Perl/Python/PHP) and forms a powerful and robust platform for the development and deployment of Web-based applications.  **Installation**  The Apache2 web server is available in Ubuntu Linux. To install Apache2:  At a terminal prompt enter the following command:  sudo apt install apache2  **Configuration**  Apache2 is configured by placing directives in plain text configuration files. These directives are separated between the following files and directories:   * apache2.conf: the main Apache2 configuration file. Contains settings that are global to Apache2. * httpd.conf: historically the main Apache2 configuration file, named after the httpd daemon. In other distributions (or older versions of Ubuntu), the file might be present. In Ubuntu, all configuration options have been moved to apache2.conf and the below referenced directories, and this file no longer exists. * conf-available: this directory contains available configuration files. All files that were previously in /etc/apache2/conf.d should be moved to /etc/apache2/conf-available. * conf-enabled: holds symlinks to the files in /etc/apache2/conf-available. When a configuration file is symlinked, it will be enabled the next time apache2 is restarted. * envvars: file where Apache2 environment variables are set. * mods-available: this directory contains configuration files to both load modules and configure them. Not all modules will have specific configuration files, however. * mods-enabled: holds symlinks to the files in /etc/apache2/mods-available. When a module configuration file is symlinked it will be enabled the next time apache2 is restarted. * ports.conf: houses the directives that determine which TCP ports Apache2 is listening on. * sites-available: this directory has configuration files for Apache2 Virtual Hosts. Virtual Hosts allow Apache2 to be configured for multiple sites that have separate configurations. * sites-enabled: like mods-enabled, sites-enabled contains symlinks to the /etc/apache2/sites-available directory. Similarly when a configuration file in sites-available is symlinked, the site configured by it will be active once Apache2 is restarted. * magic: instructions for determining MIME type based on the first few bytes of a file. |
| **EXPERIMENT 1** | |
| **CODE:** | **Setting up a apache server**  1) At a terminal prompt enter the following command: sudo apt install apache2      2) Configure Apache2:  sudo gedit /etc/apache2/conf-enabled/security.conf    Change the ServerTokens from OS to Prod ServerTokens Prod    3) Enter the following command on the terminal:  sudo gedit /etc/apache2/mods-enabled/dir.conf    Add index.html or index.htm    4) Enter the following command on the terminal: root@www:~# sudo gedit /etc/apache2/apache2.conf    Add to specify server name ServerName [www.ccnlab.com](http://www.ccnlab.com)    5)Enter the following command on the terminal:  sudo gedit /etc/apache2/sites-enabled/000-default.conf    change to webmaster's email  ServerAdmin webmaster@ccnlab.com    6) Enter the following command on the terminal:  sudo systemctl restart apache2    7) Access to [http://(your server's hostname or IP address)/] with web browser.    8) Entering the ip address of the webpage(one can even enter the url):    9) The webpage gets loaded: |
| **Changing the index page:** | Navigate to the directories /var/www/html/    Type this command to open the index html file    Change the index.html    Restart the server and reload the website |
| **RESULT:** Learnt about the Apache Server and its functions. Learnt how to start a web server hosted on apache. Learnt how to change the default apache html into custom webpage | |