Curtin College | in association with Curtin University

CS2000 – Laboratory 02

Install and Configure DNS, FTP and Web Server on Linux Server

Activate network services On Ubuntu Server

Task1: Configuring FTP Server

File Transfer Protocol (FTP) is a protocol for transferring files. It facilitates these transfers with proper integrity, efficiency and security. A client computer connects to an FTP server, where they can supply logon credentials, and then be granted access to retrieve files on the server.

Access to an FTP server can be managed in two ways:

- Anonymous
- Authenticated

In the Anonymous mode, remote clients can access the FTP server by using the default user account. In the Authenticated mode a user must have an account and a password. User access to the FTP server directories and files is dependent on the permissions defined for the account used at login. As a general rule, the FTP daemon will hide the root directory of the FTP server and change it to the FTP Home directory. This hides the rest of the file system from remote sessions.

In this part of the lab you are required to activate FTP on your server, then from your client side connect to it and perform the file transfers.

1. **Download and install vsftpd**
2. **Configure the firewall to allow FTP and enable it**
3. **Create a user for FTP on your server**
    a. **Creating a user will automatically create a home directory /home/ftpuser**
4. **Edit the vsftpd configuration file to allow the new user to write (/etc/vsftpd.conf)**
5. **Create a test file on your server.**

6. **Go back to your guest machine (Windows 10) and use it as FTP client to connect to your Virtual FTP server.**
7. **Make a ftp connection from your client to your FTP server**
    a. **You can use command line or FTP client program**
    b. **Download and install FileZilla from: https://filezilla-project.org/index.php**
    c. **In Host window type *ftp://IPaddress of your virtual machine***
    Note: to check server IP address use *ifconfig* command.
    d. **Use your FTP user username and password that you created.**

Note: if there is a logging problem restart Ubuntu VM or the VSFTPD service

8. **Download the test file.**
9. **Upload a file from your client to your server.**
10. **Make your FTP server secure**
    a. **Limit users to their home directory**
11. **Example of step by step configuration (required steps: 1, 2, 3, 4.2, and 5): https://devanswers.co/installing-ftp-server-vsftpd-ubuntu-18-04/**
12. **Once reconnected, attempt to upload a test file to the root directory, and one to the files directory.**
    The root directory should fail, the upload to the files directory should succeed.

Task2- Web Server

A Web server delivers Internet Web pages to client computers. The client runs a Web browser, which makes a request for an HTML web page from the server. The server services that request, and sends the desired page to the client's Web browser, where it is displayed.

Set up a Web Service on Ubuntu server.

1. **Install apache2 web server**
2. **Following page is a good reference. Step 4 is optional and won't work as we don't have an online domain name. However, it is recommended for learning skills.** https://www.digitalocean.com/community/tutorials/how-to-install-the-apache-web-server-on-ubuntu-18-04-quickstart

3. **Find the path to the home page and change the home page**
    a. **Add at least one more page to your website and view it in your host machines browser**

Task3- DNS Server

A Domain Name Service (DNS) server keeps a database of tables that translate fully qualified Internet Domain names to their respective IP address. This enables you to refer to Internet servers by name, such as www.google.com rather than by IP address, such as 216.58.199.36.

Activate DNS server on your machine.

1. **What is the program maintaining a name server in linux?**
2. **Install DNS server on your machine**
3. **Write the steps for configuring DNS server (you are required to configure caching nameserver and Primary Master)**
    a. **Domain name: *yourcomputername*.com or example.com**
    b. **Server IP address: use ifconfig command to find this address**
    c. **Server hostname: ns. *yourcomputername*.com or example.com**
    d. **Webserver IP: same as Server IP**
4. **Test your DNS server**
        i. **Your server IP address xx.yy.zz.aa test your DNS configuration:**
            - **host IP address –** this should show your server IP backwards and the name
            - **dig IP address –** when run two times, you should see the second time a 0 second lookup time
            - **nslookup IP address –** you should see the server being used it the localhost (127.0.0.X) and it should resolve the name
            - **test all these with known website such as google.com or its IP address**

Note: host, dig, and nslookup do not show results as it is expected for DNS server because configured FQDN (www.example.com) is not online and just used for testing.

5. **The following link provides a step by step DNS configuration:** https://ubuntu.com/server/docs/service-domain-name-service-dns