LAMP STACK INSTALLATION

Setting up a LAMP stack (Linux, Apache, MySQL, PHP) allows you to run dynamic websites and web applications. Here's a step-by-step installation guide for a LAMP stack on a Linux-based system:

Note: For this guide, we'll assume you're using a Debian-based Linux distribution like Ubuntu.

Step 1: Update the Package List Open a terminal and update the package list to ensure you have the latest available packages:

sql

```
sudo apt update
```

Step 2: Install Apache Web Server Install the Apache web server using the following command:

```
sudo apt install apache2
```

After installation, Apache should start automatically. You can check its status using:

lua

```
sudo systemctl status apache2
```

Step 3: Install MySQL Database Install MySQL server and follow the prompts to set up the root password:

```
sudo apt install mysql-server
```

After installation, MySQL should start automatically. You can check its status using:

lua

```
sudo systemctl status mysql
```

During the installation, you may be prompted to secure the MySQL installation. Follow the on-screen instructions to set up the root password and remove anonymous users, etc.

Step 4: Install PHP Install PHP and some commonly used PHP modules:

lua

```
sudo apt install php libapache2-mod-php php-mysql
```

Step 5: Test PHP Create a PHP test file to check if PHP is working correctly:

php

```
echo "<?php phpinfo(); ?>" | sudo tee /var/www/html/info.php
```

Step 6: Configure Apache Edit the Apache configuration to prioritize index.php files:

bash

```
sudo nano /etc/apache2/mods-enabled/dir.conf
```

Move `index.php` to the beginning of the list, so it looks like this:

php

```
<IfModule mod_dir.c>
    DirectoryIndex index.php index.html index.cgi index.pl index.xhtml index.htm
</IfModule>
```

Save and close the file (Press `Ctrl + X`, then Y, then `Enter`).

Step 7: Enable Apache Rewrite Module Enable the Apache rewrite module, which is often used in web applications:

```
sudo a2enmod rewrite
```

Step 8: Restart Apache After making changes to the Apache configuration, restart the Apache web server:

```
sudo systemctl restart apache2
```

Step 9: Test the LAMP Stack Open a web browser and navigate to `http://localhost`. You should see an "Apache2 Ubuntu Default Page." To test PHP, go to `http://localhost/info.php`. If PHP is working correctly, you'll see the PHP info page displaying information about your PHP installation.

Step 10: Secure MySQL (Optional) If you want to further secure your MySQL installation, you can run the following command:

```
sudo mysql_secure_installation
```

This will guide you through various options to improve the security of your MySQL server.

Congratulations! You now have a LAMP stack installed on your Linux system, ready to host web applications and websites. Remember to keep your system and software up-to-date with regular maintenance. Additionally, always follow best security practices to protect your web server and applications.