Magento Open Source 2.4.8

Complete Installation Guide for Ubuntu (Apache + PHP 8.2 + MariaDB + OpenSearch)

Overview

This document provides a **clean, reliable, and from-scratch** procedure to install **Magento Open Source 2.4.8** on **Ubuntu**. It follows Magento best practices and avoids common pitfalls related to PHP version mismatches, permissions, search engine setup, and Composer authentication.

The guide is suitable for **learning environments, labs, interviews, and real-world server setups**. Production-specific notes are clearly marked.

System Requirements

- **Operating System:** Ubuntu 22.04 or later
- **Web Server:** Apache 2.4
- **PHP: 8.2 only** (CLI and FPM)
- **Database:** MariaDB 10.6+
- **Search Engine: OpenSearch (mandatory for Magento 2.4+)**
- **Composer:** 2.x
- **Domain/Subdomain:** DNS must point to the server IP

1. System Preparation

Update the system and install base utilities:

```
sudo apt update && sudo apt upgrade -y
sudo apt install -y unzip curl git software-properties-common
```

2. Install Apache Web Server

```
sudo apt install -y apache2
sudo a2enmod rewrite proxy_fcgi setenvif
sudo systemctl enable apache2
sudo systemctl start apache2
```

3. Install PHP 8.2 (Required Version)

Add the PHP repository and install required extensions:

```
sudo add-apt-repository ppa:ondrej/php -y
sudo apt update

sudo apt install -y
php8.2 php8.2-fpm php8.2-cli php8.2-common
php8.2-mysql php8.2-xml php8.2-curl php8.2-gd
php8.2-intl php8.2-bcmath php8.2-soap php8.2-zip
php8.2-mbstring php8.2-opcache
```

Enable PHP-FPM:

```
sudo systemctl enable php8.2-fpm
sudo systemctl start php8.2-fpm
```

Remove other PHP versions to avoid conflicts:

```
sudo apt purge -y php7.* php8.0 php8.1
```

Recommended PHP Configuration (Important)

Edit the following files: - `/etc/php/8.2/fpm/php.ini` - `/etc/php/8.2/cli/php.ini`

Recommended values:

```
memory_limit = 2G
max_execution_time = 1800
upload_max_filesize = 64M
post_max_size = 64M
opcache.enable = 1
```

Restart PHP-FPM:

```
sudo systemctl restart php8.2-fpm
```

4. Install and Configure MariaDB

```
sudo apt install -y mariadb-server
sudo systemctl enable mariadb
sudo systemctl start mariadb
```

Secure the installation:

```
sudo mysql_secure_installation
```

Create Magento Database and User

```
sudo mysql
```

```
CREATE DATABASE magento DEFAULT CHARACTER SET utf8mb4;
CREATE USER 'magento'@'localhost' IDENTIFIED BY 'StrongPass@123';
GRANT ALL PRIVILEGES ON magento.* TO 'magento'@'localhost';
FLUSH PRIVILEGES;
EXIT;
```

Verify access:

```
mysql -u magento -p magento
```

5. Install OpenSearch (Mandatory)

```
sudo apt install -y opensearch
```

Edit the configuration file:

```
sudo nano /etc/opensearch/opensearch.yml
```

Minimal working configuration:

```
cluster.name: magento-opensearch
node.name: node-1
network.host: 127.0.0.1
http.port: 9200
```

```
discovery.type: single-node
plugins.security.disabled: true
```

Disable demo security installation:

```
sudo mkdir -p /etc/opensearch/opensearch.env.d
echo "DISABLE_INSTALL_DEMO_CONFIG=true" | sudo tee /etc/opensearch/
opensearch.env.d/no-demo-security.env
```

Start OpenSearch:

```
sudo systemctl enable opensearch
sudo systemctl start opensearch
```

Verify service:

```
curl http://127.0.0.1:9200
```

Security Note: Do not expose port 9200 publicly.

6. Install Composer

```
sudo apt install -y composer
php8.2 /usr/bin/composer --version
```

7. Configure Magento Repository Authentication (auth.json)

Magento packages require authentication via Composer.

```
mkdir -p ~/.config/composer
nano ~/.config/composer/auth.json
```

```
{
  "http-basic": {
    "repo.magento.com": {
      "username": "YOUR_PUBLIC_KEY",
      "password": "YOUR_PRIVATE_KEY"
    }
```

```
    }
}
```

Secure the file:

```
chmod 600 ~/.config/composer/auth.json
```

8. Apache Virtual Host Configuration

```
sudo nano /etc/apache2/sites-available/magento.conf
```

```
<VirtualHost *:80>
    ServerName magento.example.com
    DocumentRoot /var/www/magento/pub

    <Directory /var/www/magento/pub>
        AllowOverride All
        Require all granted
    </Directory>

    <FilesMatch \.php$>
        SetHandler "proxy:unix:/run/php/php8.2-fpm.sock|fcgi://localhost/"
    </FilesMatch>

    ErrorLog ${APACHE_LOG_DIR}/magento_error.log
    CustomLog ${APACHE_LOG_DIR}/magento_access.log combined
</VirtualHost>
```

Enable the site:

```
sudo a2ensite magento
sudo systemctl reload apache2
```

9. Download Magento Source Code

```
cd /var/www
sudo chown $USER:$USER /var/www

php8.2 /usr/bin/composer create-project
--repository-url=https://repo.magento.com/
magento/project-community-edition magento
```

10. Set Correct File Ownership

```
sudo chown -R www-data:www-data /var/www/magento
```

11. Install Magento via CLI

```
cd /var/www/magento

sudo -u www-data php8.2 bin/magento setup:install
--base-url=http://magento.example.com
--db-host=localhost
--db-name=magento
--db-user=magento
--db-password=StrongPass@123
--admin-firstname=Admin
--admin-lastname=User
--admin-email=admin@example.com
--admin-user=admin
--admin-password=Admin@12345
--backend-frontname=admin
--language=en_US
--currency=USD
--timezone=Asia/Kolkata
--use-rewrites=1
--search-engine=opensearch
--opensearch-host=127.0.0.1
--opensearch-port=9200
```

After installation, confirm the admin URL:

```
php8.2 bin/magento info:adminuri
```

12. Deploy Static Content

```
sudo -u www-data php8.2 bin/magento deploy:mode:set developer
sudo -u www-data php8.2 bin/magento setup:static-content:deploy en_US -f
sudo -u www-data php8.2 bin/magento cache:flush
```

13. Configure Magento Cron Jobs (Mandatory)

```
sudo -u www-data php8.2 bin/magento cron:install
crontab -u www-data -l
```

14. Disable Two-Factor Authentication (Development Only)

```
sudo -u www-data php8.2 bin/magento module:disable
Magento_TwoFactorAuth
Magento_AdminAdobeImsTwoFactorAuth

sudo -u www-data php8.2 bin/magento setup:upgrade
sudo -u www-data php8.2 bin/magento cache:flush
```

Warning: Do not disable 2FA in production environments.

15. Final File Permissions

```
sudo chown -R www-data:www-data var pub/static generated
sudo find var pub/static generated -type d -exec chmod 755 {} +
sudo find var pub/static generated -type f -exec chmod 644 {} +
```

16. Access URLs

- **Frontend:** `http://magento.example.com`
- **Admin Panel:** `http://magento.example.com/admin`

Important Rules and Best Practices

- Never rerun `setup:install`
- Always use `pub` as the Apache `DocumentRoot`
- Never mix PHP versions
- Never use `chmod 777`
- OpenSearch is mandatory for Magento 2.4+
- Do not commit `auth.json` to version control

Magento Open Source 2.4.8 is now fully installed and operational.