

Installing Docker, Docker Compose, and Portainer on Debian

In this article, we will walk through a bash script that automates the process of installing Docker, Docker Compose, and Portainer on a Debian-based system. Docker is a popular platform for developing, shipping, and running applications using containerization. Docker Compose is a tool for defining and running multi-container Docker applications. Portainer is a lightweight management UI for Docker environments.

Let's dive into the script:

```
#!/bin/bash

# Function to uninstall old Docker version if found
uninstall_old_docker() {
    sudo apt-get purge -y docker-ce docker-ce-cli containerd.io
    sudo rm -rf /etc/apt/sources.list.d/docker.list
}

# Check if curl is installed
if ! [ -x "$(command -v curl)" ]; then
    echo "Installing curl..."
    sudo apt-get update
    sudo apt-get install -y curl
fi

# Check if Docker is already installed
if [ -x "$(command -v docker)" ]; then
    echo "Old Docker installation found. Uninstalling..."
    uninstall_old_docker
    echo "Old Docker installation removed."
fi
```

```
# Install Docker dependencies
sudo apt-get update
sudo apt-get install -y apt-transport-https ca-certificates gnupg-agent software-properties-common

# Add Docker's official GPG key
curl -fsSL https://download.docker.com/linux/debian/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-
archive-keyring.gpg

# Add Docker repository
echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg]
https://download.docker.com/linux/debian \
  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

# Install Docker Engine
sudo apt-get update
sudo apt-get install -y docker-ce docker-ce-cli containerd.io

# Install Docker Compose
if ! [ -x "$(command -v docker-compose)" ]; then
  echo "Installing Docker Compose..."
  sudo curl -L "https://github.com/docker/compose/releases/download/1.29.0/docker-compose-$(uname -s)-
$(uname -m)" -o /usr/local/bin/docker-compose
  sudo chmod +x /usr/local/bin/docker-compose
else
  echo "Docker Compose is already installed."
fi

# Install Portainer
docker volume create portainer_data
docker run -d -p 8000:8000 -p 9443:9443 --name portainer --restart=always -v
/var/run/docker.sock:/var/run/docker.sock -v portainer_data:/data portainer/portainer-ee:latest
```

Steps Explained:

1. **Uninstall Old Docker (if present):** This script first checks if an older version of Docker is installed. If found, it uninstalls it.

2. **Install curl:** It checks if `curl` is installed. If not, it installs it. `curl` is required for downloading files from the internet.
3. **Install Docker Dependencies:** Installs necessary dependencies for Docker.
4. **Add Docker GPG Key and Repository:** Adds Docker's official GPG key for package verification and adds the Docker repository to the system's package sources.
5. **Install Docker Engine:** Updates package lists and installs Docker Engine, Docker CLI, and Containerd.
6. **Install Docker Compose:** Checks if Docker Compose is installed. If not, it downloads the latest version and sets the necessary permissions.
7. **Install Portainer:** Creates a Docker volume for Portainer data, then runs Portainer as a Docker container with the necessary configurations.

Conclusion:

This script automates the installation process of Docker, Docker Compose, and Portainer on Debian-based systems, making it easier to set up a containerized environment for development or production use. Make sure to review and understand the script before executing it on your system.

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