

# GNU/Linux Administration - Support #967

## Linux Containers on Debian

02/02/2022 11:16 PM - Daniel Curtis

<b>Status:</b>	Closed	<b>Start date:</b>	02/02/2022
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Daniel Curtis	<b>% Done:</b>	100%
<b>Category:</b>	Jails / Container	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	Debian	<b>Spent time:</b>	1.50 hour

### Description

This is a simple guide for setting up and using Linux Containers on Debian.

## Prepare the Environment

- Make sure the system is up to date:

```
sudo apt update
```

## Install LXC

- Install LXC;

```
sudo apt install lxc
```

## Templates

### Arch Container

- Create the container:

```
lxc-create -n arch.example.com -t download -- --dist archlinux --release current --arch amd64
```

- **NOTE** : To display a list of available templates to download, use:

```
lxc-create -n arch.example.com -t download
```

- Start the Arch container:

```
lxc-start -n arch.example.com
```

- Open a console to the container:

```
lxc-attach -n arch.example.com
```

### Debian Container

- Create the container:

```
lxc-create -n debian.example.com -t download -- -d debian -r bullseye -a amd64
```

- (Optional) Add the Raspbian repository on top of stock Debian repos:

```
echo 'deb http://archive.raspbian.org/raspbian bullseye main contrib non-free rpi' >> /etc/apt/sources.list.d/raspbian.list
echo 'deb-src http://archive.raspbian.org/raspbian bullseye main contrib non-free rpi' >> /etc/apt/sources.list.d/raspbian.list
```

- And add the Raspbian public signing key:

```
wget https://archive.raspbian.org/raspbian.public.key -O - | sudo apt-key add -
```

- Update the apt repository cache and upgrade any necessary files:

```
apt update && apt upgrade
```

- (Optional) Add the Wolfram Alpha repository:

```
echo 'deb http://repository.wolfram.com/raspbian/ stable non-free' >> /etc/apt/sources.list.d/wolfram.list
```

- And add the Wolfram public signing key:

```
apt-key adv --keyserver http://repository.wolfram.com/raspbian/raspbian@wolfram.com.gpg.pub -key --recv-keys 574FA74E5CBB4222
```

- Update the apt repository cache and upgrade any necessary files:

```
apt update && apt upgrade
```

- Install wolfram:

```
apt-get install wolfram-engine mathelxc-create -n kali.example.com -t kali-arm -- --release sana --mirror=http://archive.kali.org/kali --security=http://security.kali.org/kali-security --packages=apt-utils,wget,debian-keyring,e2fsprogs,kali-defaults,kali-menu,parted,sudo,usbutils,matica-fonts
```

## Ubuntu Container

- Create the container:

```
lxc-create -n ubuntu.example.com -t download -- -d ubuntu -r focal -a amd64
```

## Fedora Container

- Create the container:

```
lxc-create -n fedora.example.com -t download -- -d fedora -r 34 -a amd64
```

## Autostarting Containers

- Enable container at boot:

```
sudo systemctl enable lxc@containername
```

## Exposing Network Services

- Install iptables

```
sudo apt install iptables iptables-persistent
```

- (Example) Forward port 2222 on host to 22 on container:

```
sudo iptables -t nat -A PREROUTING -p tcp --dport 2222 -j DNAT --to 10.0.3.3:22
```

- Save the current iptables rules:

```
sudo sh -c "iptables-save > /etc/iptables/rules.v4"
```

- Enable iptables to reload at boot:

```
sudo systemctl enable netfilter-persistent
```

## Issues & Workarounds

- Container fails to download with ERROR: Unable to fetch GPG key from keyserver. Resolve by using the DOWNLOAD\_KEYSERVER environment variable:

```
DOWNLOAD_KEYSERVER="pgp.mit.edu" lxc-create -n arch.example.com -t download -- --dist archlinux --release current --arch amd64
```

## Resources

- <https://gudok.xyz/lxcdeb/>
- <https://discuss.linuxcontainers.org/t/3-0-unable-to-fetch-gpg-key-from-keyserver/2015/10>

## History

### #1 - 02/02/2022 11:58 PM - Daniel Curtis

- % Done changed from 0 to 100

- Status changed from New to Resolved

- Description updated

### #2 - 02/02/2022 11:59 PM - Daniel Curtis

- Description updated

### #3 - 02/18/2022 08:10 PM - Daniel Curtis

- Status changed from Resolved to Closed

### #4 - 02/20/2022 01:53 PM - Daniel Curtis

- Description updated

#5 - 02/21/2022 12:25 AM - Daniel Curtis

- Description updated