

# 目次

|                              |    |
|------------------------------|----|
| <b>LXCによる軽量仮想環境の導入</b> ..... | 3  |
| <b>セットアップ</b> .....          | 3  |
| <b>仮想環境の作成</b> .....         | 6  |
| Debian Wheezy 仮想環境の作成 .....  | 6  |
| 仮想環境の起動 .....                | 17 |



# LXCによる軽量仮想環境の導入

コンテナ型仮想環境を導入してみます。

## セットアップ

```
user1@plum:~$ sudo apt-get install lxc
[sudo] password for user1:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  apparmor cgmanager libapparmor-perl liblxc1 libseccomp2 python3-lxc rsync
Suggested packages:
  apparmor-profiles apparmor-docs apparmor-utils cgmanager-utils btrfs-tools
  lvm2 lxctl
Recommended packages:
  uidmap lxc-templates
The following NEW packages will be installed:
  apparmor cgmanager libapparmor-perl liblxc1 libseccomp2 lxc python3-lxc
  rsync
0 upgraded, 8 newly installed, 0 to remove and 2 not upgraded.
Need to get 982 kB of archives.
After this operation, 3058 kB of additional disk space will be used.
Do you want to continue? [Y/n]
Get:1 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main cgmanager
armhf 0.24-0ubuntu7 [45.7 kB]
Get:2 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main rsync armhf
3.1.0-2ubuntu0.1 [262 kB]
Get:3 http://ports.ubuntu.com/ubuntu-ports/ trusty/main libseccomp2 armhf
2.1.0+dfsg-1 [28.2 kB]
Get:4 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main liblxc1
armhf 1.0.4-0ubuntu0.1 [133 kB]
Get:5 http://ports.ubuntu.com/ubuntu-ports/ trusty/main libapparmor-perl
armhf 2.8.95~2430-0ubuntu5 [24.6 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports/ trusty/main apparmor armhf
2.8.95~2430-0ubuntu5 [279 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main python3-lxc
armhf 1.0.4-0ubuntu0.1 [17.7 kB]
Get:8 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main lxc armhf
1.0.4-0ubuntu0.1 [191 kB]
Fetched 982 kB in 5s (189 kB/s)
Preconfiguring packages ...
Selecting previously unselected package cgmanager.
(Reading database ... 25389 files and directories currently installed.)
Preparing to unpack ../cgmanager_0.24-0ubuntu7_armhf.deb ...
```

```
Unpacking cgmanager (0.24-0ubuntu7) ...
Selecting previously unselected package rsync.
Preparing to unpack ../rsync_3.1.0-2ubuntu0.1_armhf.deb ...
Unpacking rsync (3.1.0-2ubuntu0.1) ...
Selecting previously unselected package libseccomp2:armhf.
Preparing to unpack ../libseccomp2_2.1.0+dfsg-1_armhf.deb ...
Unpacking libseccomp2:armhf (2.1.0+dfsg-1) ...
Selecting previously unselected package liblxc1.
Preparing to unpack ../liblxc1_1.0.4-0ubuntu0.1_armhf.deb ...
Unpacking liblxc1 (1.0.4-0ubuntu0.1) ...
Selecting previously unselected package libapparmor-perl.
Preparing to unpack ../libapparmor-perl_2.8.95~2430-0ubuntu5_armhf.deb ...
Unpacking libapparmor-perl (2.8.95~2430-0ubuntu5) ...
Selecting previously unselected package apparmor.
Preparing to unpack ../apparmor_2.8.95~2430-0ubuntu5_armhf.deb ...
Unpacking apparmor (2.8.95~2430-0ubuntu5) ...
Selecting previously unselected package python3-lxc.
Preparing to unpack ../python3-lxc_1.0.4-0ubuntu0.1_armhf.deb ...
Unpacking python3-lxc (1.0.4-0ubuntu0.1) ...
Selecting previously unselected package lxc.
Preparing to unpack ../lxc_1.0.4-0ubuntu0.1_armhf.deb ...
Unpacking lxc (1.0.4-0ubuntu0.1) ...
Processing triggers for man-db (2.6.7.1-1) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up cgmanager (0.24-0ubuntu7) ...
cgmanager start/running, process 5716
cgproxy stop/pre-start, process 5754
Setting up rsync (3.1.0-2ubuntu0.1) ...
Removing any system startup links for /etc/init.d/rsync ...
update-rc.d: warning: default stop runlevel arguments (0 1 6) do not match
rsync Default-Stop values (none)
Adding system startup for /etc/init.d/rsync ...
/etc/rc0.d/K20rsync -> ../init.d/rsync
/etc/rc1.d/K20rsync -> ../init.d/rsync
/etc/rc6.d/K20rsync -> ../init.d/rsync
/etc/rc2.d/S20rsync -> ../init.d/rsync
/etc/rc3.d/S20rsync -> ../init.d/rsync
/etc/rc4.d/S20rsync -> ../init.d/rsync
/etc/rc5.d/S20rsync -> ../init.d/rsync
Setting up libseccomp2:armhf (2.1.0+dfsg-1) ...
Setting up libapparmor-perl (2.8.95~2430-0ubuntu5) ...
Setting up apparmor (2.8.95~2430-0ubuntu5) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up liblxc1 (1.0.4-0ubuntu0.1) ...
Setting up python3-lxc (1.0.4-0ubuntu0.1) ...
Setting up lxc (1.0.4-0ubuntu0.1) ...
lxc start/running
Setting up lxc dnsmasq configuration.
* Restarting DNS forwarder and DHCP server dnsmasq [
OK ]
Processing triggers for libc-bin (2.19-0ubuntu6) ...
```

```
Processing triggers for ureadahead (0.100.0-16) ...
localepurge: Disk space freed in /usr/share/locale: 0 KiB
localepurge: Disk space freed in /usr/share/man: 0 KiB
```

```
Total disk space freed by localepurge: 0 KiB
```

```
user1@plum:~$
```

```
user1@plum:~$ sudo apt-get install lxc-templates
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  qemu-user-static
Recommended packages:
  busybox-static cloud-image-utils cloud-utils debootstrap cdebootstrap
  uuid-runtime
The following NEW packages will be installed:
  lxc-templates
0 upgraded, 1 newly installed, 0 to remove and 2 not upgraded.
Need to get 61.4 kB of archives.
After this operation, 381 kB of additional disk space will be used.
Get:1 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main lxc-
templates armhf 1.0.4-0ubuntu0.1 [61.4 kB]
Fetched 61.4 kB in 1s (53.9 kB/s)
Selecting previously unselected package lxc-templates.
(Reading database ... 25737 files and directories currently installed.)
Preparing to unpack .../lxc-templates_1.0.4-0ubuntu0.1_armhf.deb ...
Unpacking lxc-templates (1.0.4-0ubuntu0.1) ...
Setting up lxc-templates (1.0.4-0ubuntu0.1) ...
localepurge: Disk space freed in /usr/share/locale: 0 KiB
localepurge: Disk space freed in /usr/share/man: 0 KiB
```

```
Total disk space freed by localepurge: 0 KiB
```

```
user1@plum:~$
```

```
user1@plum:~$ sudo apt-get install debootstrap
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  debootstrap
0 upgraded, 1 newly installed, 0 to remove and 2 not upgraded.
Need to get 30.0 kB of archives.
After this operation, 233 kB of additional disk space will be used.
Get:1 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main debootstrap
all 1.0.59ubuntu0.1 [30.0 kB]
Fetched 30.0 kB in 0s (35.8 kB/s)
Selecting previously unselected package debootstrap.
(Reading database ... 25759 files and directories currently installed.)
```

```
Preparing to unpack .../debootstrap_1.0.59ubuntu0.1_all.deb ...
Unpacking debootstrap (1.0.59ubuntu0.1) ...
Processing triggers for man-db (2.6.7.1-1) ...
Setting up debootstrap (1.0.59ubuntu0.1) ...
localepurge: Disk space freed in /usr/share/locale: 0 KiB
localepurge: Disk space freed in /usr/share/man: 0 KiB

Total disk space freed by localepurge: 0 KiB

user1@plum:~$
```

## 仮想環境の作成

### Debian Wheezy 仮想環境の作成

lxc-create コマンドにより、仮想環境を作成します。  
Debian “Wheezy” の環境を作成してみます。

```
user1@plum:~$ sudo lxc-create -t debian -n debian
debootstrap is /usr/sbin/debootstrap
Checking cache download in /var/cache/lxc/debian/rootfs-wheezy-armhf ...
Downloading debian minimal ...
W: Cannot check Release signature; keyring file not available
/usr/share/keyrings/debian-archive-keyring.gpg
I: Retrieving Release
I: Retrieving Packages
I: Validating Packages
I: Resolving dependencies of required packages...
I: Resolving dependencies of base packages...
I: Found additional required dependencies: insserv libbz2-1.0 libdb5.1
libsemanage-common libsemanage1 libslang2 libustr-1.0-1
I: Found additional base dependencies: adduser debian-archive-keyring gnupg
pgpv isc-dhcp-common libapt-pkg4.12 libbsd0 libclass-isa-perl libedit2
libgdbm3 libgssapi-krb5-2 libk5crypto3 libkeyutils1 libkrb5-3
libkrb5support0 libncursesw5 libprocps0 libreadline6 libssl1.0.0 libstdc++6
libswitch-perl libusb-0.1-4 libwrap0 openssh-client perl perl-modules procps
readline-common
I: Checking component main on http://cdn.debian.net/debian...
I: Retrieving libacl1 2.2.51-8
I: Validating libacl1 2.2.51-8
I: Retrieving adduser 3.113+nmu3
I: Validating adduser 3.113+nmu3
I: Retrieving apt 0.9.7.9+deb7u2
I: Validating apt 0.9.7.9+deb7u2
I: Retrieving libapt-pkg4.12 0.9.7.9+deb7u2
I: Validating libapt-pkg4.12 0.9.7.9+deb7u2
I: Retrieving libattr1 1:2.4.46-8
```

```
I: Validating libattr1 1%3a2.4.46-8
I: Retrieving base-files 7.1wheezy6
I: Validating base-files 7.1wheezy6
I: Retrieving base-passwd 3.5.26
I: Validating base-passwd 3.5.26
I: Retrieving bash 4.2+dfsg-0.1
I: Validating bash 4.2+dfsg-0.1
I: Retrieving libbz2-1.0 1.0.6-4
I: Validating libbz2-1.0 1.0.6-4
I: Retrieving coreutils 8.13-3.5
I: Validating coreutils 8.13-3.5
I: Retrieving dash 0.5.7-3
I: Validating dash 0.5.7-3
I: Retrieving libdb5.1 5.1.29-5
I: Validating libdb5.1 5.1.29-5
I: Retrieving debconf 1.5.49
I: Validating debconf 1.5.49
I: Retrieving debconf-i18n 1.5.49
I: Validating debconf-i18n 1.5.49
I: Retrieving debian-archive-keyring 2012.4
I: Validating debian-archive-keyring 2012.4
I: Retrieving debianutils 4.3.2
I: Validating debianutils 4.3.2
I: Retrieving dialog 1.1-20120215-2
I: Validating dialog 1.1-20120215-2
I: Retrieving diffutils 1%3a3.2-6
I: Validating diffutils 1%3a3.2-6
I: Retrieving dpkg 1.16.15
I: Validating dpkg 1.16.15
I: Retrieving e2fslibs 1.42.5-1.1
I: Validating e2fslibs 1.42.5-1.1
I: Retrieving e2fsprogs 1.42.5-1.1
I: Validating e2fsprogs 1.42.5-1.1
I: Retrieving libcomerr2 1.42.5-1.1
I: Validating libcomerr2 1.42.5-1.1
I: Retrieving libss2 1.42.5-1.1
I: Validating libss2 1.42.5-1.1
I: Retrieving libc-bin 2.13-38+deb7u2
I: Validating libc-bin 2.13-38+deb7u2
I: Retrieving libc6 2.13-38+deb7u2
I: Validating libc6 2.13-38+deb7u2
I: Retrieving locales 2.13-38+deb7u2
I: Validating locales 2.13-38+deb7u2
I: Retrieving multiarch-support 2.13-38+deb7u2
I: Validating multiarch-support 2.13-38+deb7u2
I: Retrieving findutils 4.4.2-4
I: Validating findutils 4.4.2-4
I: Retrieving gcc-4.7-base 4.7.2-5
I: Validating gcc-4.7-base 4.7.2-5
I: Retrieving libgcc1 1%3a4.7.2-5
I: Validating libgcc1 1%3a4.7.2-5
```

```
I: Retrieving libstdc++6 4.7.2-5
I: Validating libstdc++6 4.7.2-5
I: Retrieving libgdbm3 1.8.3-11
I: Validating libgdbm3 1.8.3-11
I: Retrieving gnupg 1.4.12-7+deb7u4
I: Validating gnupg 1.4.12-7+deb7u4
I: Retrieving gpgv 1.4.12-7+deb7u4
I: Validating gpgv 1.4.12-7+deb7u4
I: Retrieving grep 2.12-2
I: Validating grep 2.12-2
I: Retrieving gzip 1.5-1.1
I: Validating gzip 1.5-1.1
I: Retrieving hostname 3.11
I: Validating hostname 3.11
I: Retrieving ifupdown 0.7.8
I: Validating ifupdown 0.7.8
I: Retrieving insserv 1.14.0-5
I: Validating insserv 1.14.0-5
I: Retrieving iproute 20120521-3+b3
I: Validating iproute 20120521-3+b3
I: Retrieving isc-dhcp-client 4.2.2.dfsg.1-5+deb70u6
I: Validating isc-dhcp-client 4.2.2.dfsg.1-5+deb70u6
I: Retrieving isc-dhcp-common 4.2.2.dfsg.1-5+deb70u6
I: Validating isc-dhcp-common 4.2.2.dfsg.1-5+deb70u6
I: Retrieving libkeyutils1 1.5.5-3
I: Validating libkeyutils1 1.5.5-3
I: Retrieving libgssapi-krb5-2 1.10.1+dfsg-5+deb7u1
I: Validating libgssapi-krb5-2 1.10.1+dfsg-5+deb7u1
I: Retrieving libk5crypto3 1.10.1+dfsg-5+deb7u1
I: Validating libk5crypto3 1.10.1+dfsg-5+deb7u1
I: Retrieving libkrb5-3 1.10.1+dfsg-5+deb7u1
I: Validating libkrb5-3 1.10.1+dfsg-5+deb7u1
I: Retrieving libkrb5support0 1.10.1+dfsg-5+deb7u1
I: Validating libkrb5support0 1.10.1+dfsg-5+deb7u1
I: Retrieving libbsd0 0.4.2-1
I: Validating libbsd0 0.4.2-1
I: Retrieving libclass-isa-perl 0.36-3
I: Validating libclass-isa-perl 0.36-3
I: Retrieving libedit2 2.11-20080614-5
I: Validating libedit2 2.11-20080614-5
I: Retrieving liblocale-gettext-perl 1.05-7+b3
I: Validating liblocale-gettext-perl 1.05-7+b3
I: Retrieving libselinux1 2.1.9-5
I: Validating libselinux1 2.1.9-5
I: Retrieving libsemanage-common 2.1.6-6
I: Validating libsemanage-common 2.1.6-6
I: Retrieving libsemanage1 2.1.6-6
I: Validating libsemanage1 2.1.6-6
I: Retrieving libsepol1 2.1.4-3
I: Validating libsepol1 2.1.4-3
I: Retrieving libswitch-perl 2.16-2
```



```
I: Validating libswitch-perl 2.16-2
I: Retrieving libtext-charwidth-perl 0.04-7+b2
I: Validating libtext-charwidth-perl 0.04-7+b2
I: Retrieving libtext-iconv-perl 1.7-5
I: Validating libtext-iconv-perl 1.7-5
I: Retrieving libtext-wrapil8n-perl 0.06-7
I: Validating libtext-wrapil8n-perl 0.06-7
I: Retrieving libui-dialog-perl 1.08-1.1
I: Validating libui-dialog-perl 1.08-1.1
I: Retrieving libusb-0.1-4 2%3a0.1.12-20+nmu1
I: Validating libusb-0.1-4 2%3a0.1.12-20+nmu1
I: Retrieving lsb-base 4.1+Debian8+deb7u1
I: Validating lsb-base 4.1+Debian8+deb7u1
I: Retrieving mawk 1.3.3-17
I: Validating mawk 1.3.3-17
I: Retrieving libncurses5 5.9-10
I: Validating libncurses5 5.9-10
I: Retrieving libncursesw5 5.9-10
I: Validating libncursesw5 5.9-10
I: Retrieving libtinfo5 5.9-10
I: Validating libtinfo5 5.9-10
I: Retrieving ncurses-base 5.9-10
I: Validating ncurses-base 5.9-10
I: Retrieving ncurses-bin 5.9-10
I: Validating ncurses-bin 5.9-10
I: Retrieving net-tools 1.60-24.2
I: Validating net-tools 1.60-24.2
I: Retrieving netbase 5.0
I: Validating netbase 5.0
I: Retrieving openssh-client 1%3a6.0p1-4+deb7u2
I: Validating openssh-client 1%3a6.0p1-4+deb7u2
I: Retrieving openssh-server 1%3a6.0p1-4+deb7u2
I: Validating openssh-server 1%3a6.0p1-4+deb7u2
I: Retrieving libssl1.0.0 1.0.1e-2+deb7u11
I: Validating libssl1.0.0 1.0.1e-2+deb7u11
I: Retrieving libpam-modules 1.1.3-7.1
I: Validating libpam-modules 1.1.3-7.1
I: Retrieving libpam-modules-bin 1.1.3-7.1
I: Validating libpam-modules-bin 1.1.3-7.1
I: Retrieving libpam-runtime 1.1.3-7.1
I: Validating libpam-runtime 1.1.3-7.1
I: Retrieving libpam0g 1.1.3-7.1
I: Validating libpam0g 1.1.3-7.1
I: Retrieving perl 5.14.2-21+deb7u1
I: Validating perl 5.14.2-21+deb7u1
I: Retrieving perl-base 5.14.2-21+deb7u1
I: Validating perl-base 5.14.2-21+deb7u1
I: Retrieving perl-modules 5.14.2-21+deb7u1
I: Validating perl-modules 5.14.2-21+deb7u1
I: Retrieving libprocps0 1%3a3.3.3-3
I: Validating libprocps0 1%3a3.3.3-3
```

```
I: Retrieving procs 1%3a3.3.3-3
I: Validating procs 1%3a3.3.3-3
I: Retrieving libreadline6 6.2+dfsg-0.1
I: Validating libreadline6 6.2+dfsg-0.1
I: Retrieving readline-common 6.2+dfsg-0.1
I: Validating readline-common 6.2+dfsg-0.1
I: Retrieving sed 4.2.1-10
I: Validating sed 4.2.1-10
I: Retrieving sensible-utils 0.0.7
I: Validating sensible-utils 0.0.7
I: Retrieving login 1%3a4.1.5.1-1
I: Validating login 1%3a4.1.5.1-1
I: Retrieving passwd 1%3a4.1.5.1-1
I: Validating passwd 1%3a4.1.5.1-1
I: Retrieving libslang2 2.2.4-15
I: Validating libslang2 2.2.4-15
I: Retrieving initscripts 2.88dsf-41+deb7u1
I: Validating initscripts 2.88dsf-41+deb7u1
I: Retrieving sysv-rc 2.88dsf-41+deb7u1
I: Validating sysv-rc 2.88dsf-41+deb7u1
I: Retrieving sysvinit 2.88dsf-41+deb7u1
I: Validating sysvinit 2.88dsf-41+deb7u1
I: Retrieving sysvinit-utils 2.88dsf-41+deb7u1
I: Validating sysvinit-utils 2.88dsf-41+deb7u1
I: Retrieving tar 1.26+dfsg-0.1
I: Validating tar 1.26+dfsg-0.1
I: Retrieving libwrap0 7.6.q-24
I: Validating libwrap0 7.6.q-24
I: Retrieving tzdata 2014e-0wheezy1
I: Validating tzdata 2014e-0wheezy1
I: Retrieving libustr-1.0-1 1.0.4-3
I: Validating libustr-1.0-1 1.0.4-3
I: Retrieving bsduutils 1%3a2.20.1-5.3
I: Validating bsduutils 1%3a2.20.1-5.3
I: Retrieving libblkid1 2.20.1-5.3
I: Validating libblkid1 2.20.1-5.3
I: Retrieving libmount1 2.20.1-5.3
I: Validating libmount1 2.20.1-5.3
I: Retrieving libuuid1 2.20.1-5.3
I: Validating libuuid1 2.20.1-5.3
I: Retrieving mount 2.20.1-5.3
I: Validating mount 2.20.1-5.3
I: Retrieving util-linux 2.20.1-5.3
I: Validating util-linux 2.20.1-5.3
I: Retrieving liblzma5 5.1.1alpha+20120614-2
I: Validating liblzma5 5.1.1alpha+20120614-2
I: Retrieving xz-utils 5.1.1alpha+20120614-2
I: Validating xz-utils 5.1.1alpha+20120614-2
I: Retrieving zlib1g 1%3a1.2.7.dfsg-13
I: Validating zlib1g 1%3a1.2.7.dfsg-13
I: Chosen extractor for .deb packages: dpkg-deb
```

```
I: Extracting libacl1...
I: Extracting libattr1...
I: Extracting base-files...
I: Extracting base-passwd...
I: Extracting bash...
I: Extracting libbz2-1.0...
I: Extracting coreutils...
I: Extracting dash...
I: Extracting libdb5.1...
I: Extracting debconf...
I: Extracting debconf-i18n...
I: Extracting debianutils...
I: Extracting diffutils...
I: Extracting dpkg...
I: Extracting e2fslibs...
I: Extracting e2fsprogs...
I: Extracting libcomerr2...
I: Extracting libss2...
I: Extracting libc-bin...
I: Extracting libc6...
I: Extracting multiarch-support...
I: Extracting findutils...
I: Extracting gcc-4.7-base...
I: Extracting libgcc1...
I: Extracting grep...
I: Extracting gzip...
I: Extracting hostname...
I: Extracting insserv...
I: Extracting liblocale-gettext-perl...
I: Extracting libselinux1...
I: Extracting libsemanage-common...
I: Extracting libsemanage1...
I: Extracting libsepol1...
I: Extracting libtext-charwidth-perl...
I: Extracting libtext-iconv-perl...
I: Extracting libtext-wrapi18n-perl...
I: Extracting lsb-base...
I: Extracting mawk...
I: Extracting libncurses5...
I: Extracting libtinfo5...
I: Extracting ncurses-base...
I: Extracting ncurses-bin...
I: Extracting libpam-modules...
I: Extracting libpam-modules-bin...
I: Extracting libpam-runtime...
I: Extracting libpam0g...
I: Extracting perl-base...
I: Extracting sed...
I: Extracting sensible-utils...
I: Extracting login...
I: Extracting passwd...
```

```
I: Extracting libslang2...
I: Extracting initscripts...
I: Extracting sysv-rc...
I: Extracting sysvinit...
I: Extracting sysvinit-utils...
I: Extracting tar...
I: Extracting tzdata...
I: Extracting libustr-1.0-1...
I: Extracting bsdtails...
I: Extracting libblkid1...
I: Extracting libmount1...
I: Extracting libuuid1...
I: Extracting mount...
I: Extracting util-linux...
I: Extracting liblzma5...
I: Extracting xz-utils...
I: Extracting zlib1g...
I: Installing core packages...
I: Unpacking required packages...
I: Unpacking libacl1:armhf...
I: Unpacking libattr1:armhf...
I: Unpacking base-files...
I: Unpacking base-passwd...
I: Unpacking bash...
I: Unpacking libbz2-1.0:armhf...
I: Unpacking coreutils...
I: Unpacking dash...
I: Unpacking libdb5.1:armhf...
I: Unpacking debconf...
I: Unpacking debconf-i18n...
I: Unpacking debianutils...
I: Unpacking diffutils...
I: Unpacking dpkg...
I: Unpacking e2fslibs:armhf...
I: Unpacking e2fsprogs...
I: Unpacking libcomerr2:armhf...
I: Unpacking libss2:armhf...
I: Unpacking libc-bin...
I: Unpacking libc6:armhf...
I: Unpacking multiarch-support...
I: Unpacking findutils...
I: Unpacking gcc-4.7-base:armhf...
I: Unpacking libgcc1:armhf...
I: Unpacking grep...
I: Unpacking gzip...
I: Unpacking hostname...
I: Unpacking insserv...
I: Unpacking liblocale-gettext-perl...
I: Unpacking libselinux1:armhf...
I: Unpacking libsemanage-common...
I: Unpacking libsemanage1:armhf...
```

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I: Unpacking libsepol1:armhf...
I: Unpacking libtext-charwidth-perl...
I: Unpacking libtext-iconv-perl...
I: Unpacking libtext-wrap18n-perl...
I: Unpacking lsb-base...
I: Unpacking mawk...
I: Unpacking libncurses5:armhf...
I: Unpacking libtinfo5:armhf...
I: Unpacking ncurses-base...
I: Unpacking ncurses-bin...
I: Unpacking libpam-modules:armhf...
I: Unpacking libpam-modules-bin...
I: Unpacking libpam-runtime...
I: Unpacking libpam0g:armhf...
I: Unpacking perl-base...
I: Unpacking sed...
I: Unpacking sensible-utils...
I: Unpacking login...
I: Unpacking passwd...
I: Unpacking libslang2:armhf...
I: Unpacking initscripts...
I: Unpacking sysv-rc...
I: Unpacking sysvinit...
I: Unpacking sysvinit-utils...
I: Unpacking tar...
I: Unpacking tzdata...
I: Unpacking libustr-1.0-1:armhf...
I: Unpacking bsduutils...
I: Unpacking libblkid1:armhf...
I: Unpacking libmount1...
I: Unpacking libuuid1:armhf...
I: Unpacking mount...
I: Unpacking util-linux...
I: Unpacking liblzma5:armhf...
I: Unpacking xz-utils...
I: Unpacking zlib1g:armhf...
I: Configuring required packages...
I: Configuring lsb-base...
I: Configuring ncurses-base...
I: Configuring sensible-utils...
I: Configuring libsemanage-common...
I: Configuring gcc-4.7-base:armhf...
I: Configuring libc-bin...
I: Configuring libc6:armhf...
I: Configuring debianutils...
I: Configuring base-passwd...
I: Configuring mawk...
I: Configuring hostname...
I: Configuring insserv...
I: Configuring multiarch-support...
I: Configuring libselinux1:armhf...
```

```
I: Configuring libsepol1:armhf...
I: Configuring libgcc1:armhf...
I: Configuring base-files...
I: Configuring libattr1:armhf...
I: Configuring e2fslibs:armhf...
I: Configuring libcomerr2:armhf...
I: Configuring libacl1:armhf...
I: Configuring libslang2:armhf...
I: Configuring libss2:armhf...
I: Configuring liblzma5:armhf...
I: Configuring libdb5.1:armhf...
I: Configuring libbz2-1.0:armhf...
I: Configuring libtinfo5:armhf...
I: Configuring sysvinit-utils...
I: Configuring libustr-1.0-1:armhf...
I: Configuring bsdtls...
I: Configuring ncurses-bin...
I: Configuring libsemanage1:armhf...
I: Configuring tar...
I: Configuring zlib1g:armhf...
I: Configuring libncurses5:armhf...
I: Configuring xz-utils...
I: Configuring dpkg...
I: Configuring dash...
I: Configuring coreutils...
I: Configuring perl-base...
I: Configuring diffutils...
I: Configuring libtext-iconv-perl...
I: Configuring sed...
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I: Configuring findutils...
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I: Configuring liblocale-gettext-perl...
I: Configuring bash...
I: Configuring libtext-charwidth-perl...
I: Configuring libtext-wrap18n-perl...
I: Configuring debconf...
I: Configuring libpam0g:armhf...
I: Configuring sysv-rc...
I: Configuring tzdata...
I: Configuring debconf-i18n...
I: Configuring initscripts...
I: Configuring libpam-modules-bin...
I: Configuring libpam-modules:armhf...
I: Configuring passwd...
I: Configuring libpam-runtime...
I: Configuring sysvinit...
I: Configuring login...
I: Configuring libuuid1:armhf...
I: Configuring libblkid1:armhf...
I: Configuring util-linux...
```

```
I: Configuring libmount1...
I: Configuring mount...
I: Configuring e2fsprogs...
I: Unpacking the base system...
I: Unpacking adduser...
I: Unpacking apt...
I: Unpacking libapt-pkg4.12:armhf...
I: Unpacking debian-archive-keyring...
I: Unpacking dialog...
I: Unpacking locales...
I: Unpacking libstdc++6:armhf...
I: Unpacking libgdbm3:armhf...
I: Unpacking gnupg...
I: Unpacking gpgv...
I: Unpacking ifupdown...
I: Unpacking iproute...
I: Unpacking isc-dhcp-client...
I: Unpacking isc-dhcp-common...
I: Unpacking libkeyutils1:armhf...
I: Unpacking libgssapi-krb5-2:armhf...
I: Unpacking libk5crypto3:armhf...
I: Unpacking libkrb5-3:armhf...
I: Unpacking libkrb5support0:armhf...
I: Unpacking libbsd0:armhf...
I: Unpacking libclass-isa-perl...
I: Unpacking libedit2:armhf...
I: Unpacking libswitch-perl...
I: Unpacking libui-dialog-perl...
I: Unpacking libusb-0.1-4:armhf...
I: Unpacking libncursesw5:armhf...
I: Unpacking net-tools...
I: Unpacking netbase...
I: Unpacking openssh-client...
I: Unpacking openssh-server...
I: Unpacking libssl1.0.0:armhf...
I: Unpacking perl...
I: Unpacking perl-modules...
I: Unpacking libprocps0:armhf...
I: Unpacking procps...
I: Unpacking libreadline6:armhf...
I: Unpacking readline-common...
I: Unpacking libwrap0:armhf...
I: Configuring the base system...
I: Configuring gpgv...
I: Configuring libssl1.0.0:armhf...
I: Configuring libgdbm3:armhf...
I: Configuring isc-dhcp-common...
I: Configuring libusb-0.1-4:armhf...
I: Configuring libprocps0:armhf...
I: Configuring netbase...
I: Configuring libclass-isa-perl...
```

```
I: Configuring adduser...
I: Configuring locales...
I: Configuring libkeyutils1:armhf...
I: Configuring iproute...
I: Configuring libkrb5support0:armhf...
I: Configuring net-tools...
I: Configuring libbsd0:armhf...
I: Configuring debian-archive-keyring...
I: Configuring libncursesw5:armhf...
I: Configuring dialog...
I: Configuring libedit2:armhf...
I: Configuring libstdc++6:armhf...
I: Configuring isc-dhcp-client...
I: Configuring readline-common...
I: Configuring libwrap0:armhf...
I: Configuring procs...
I: Configuring libk5crypto3:armhf...
I: Configuring ifupdown...
I: Configuring libapt-pkg4.12:armhf...
I: Configuring libreadline6:armhf...
I: Configuring gnupg...
I: Configuring libkrb5-3:armhf...
I: Configuring libgssapi-krb5-2:armhf...
I: Configuring apt...
I: Configuring openssh-client...
I: Configuring openssh-server...
I: Configuring perl-modules...
I: Configuring libswitch-perl...
I: Configuring perl...
I: Configuring libui-dialog-perl...
I: Base system installed successfully.
Download complete.
Copying rootfs to /var/lib/lxc/debian/rootfs...Generating locales (this
might take a while)...
Generation complete.
update-rc.d: using dependency based boot sequencing
update-rc.d: using dependency based boot sequencing
update-rc.d: using dependency based boot sequencing
update-rc.d: using dependency based boot sequencing
Creating SSH2 RSA key; this may take some time ...
Creating SSH2 DSA key; this may take some time ...
Creating SSH2 ECDSA key; this may take some time ...
invoke-rc.d: policy-rc.d denied execution of restart.

Current default time zone: 'Asia/Tokyo'
Local time is now:      Fri Jul 25 17:42:59 JST 2014.
Universal Time is now:  Fri Jul 25 08:42:59 UTC 2014.

Root password is 'root', please change !
user1@plum:~$
```



作成されました。

## 仮想環境の起動

作成した仮想環境を起動するまえに、

- 一般ユーザの追加
- root パスワードの更新

を行っておきます。

```
user1@plum:~$ sudo chroot /var/lib/lxc/debian/rootfs
root@plum:/# passwd
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
root@plum:/# adduser user1
Adding user `user1' ...
Adding new group `user1' (1000) ...
Adding new user `user1' (1000) with group `user1' ...
Creating home directory `/home/user1' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for user1
Enter the new value, or press ENTER for the default
  Full Name []: User
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] y
root@plum:/# exit
```

仮想環境を起動します。

```
user1@plum:~$ sudo lxc-start -n debian
```

```
Debian GNU/Linux 7 debian console
```

```
debian login: user1
```

```
Password:
```

```
Linux debian 3.14.13+ #68 PREEMPT Wed Jul 23 11:52:23 JST 2014 armv7l
```

```
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
```

individual files in /usr/share/doc/\*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.

```
user1@debian:~$
```

ログインできました。

プロセス一覧を見てみると、コンテナ内のプロセスのみが見えています。

```
user1@debian:~$ ps ax
  PID TTY          STAT       TIME COMMAND
    1 ?            Ss         0:00 init [3]
 1015 ?            Ss         0:00 dhclient -v -pf /run/dhclient.eth0.pid -lf
/var/lib/dhcp/dhclient.eth0.leases eth0
 1105 ?            Ss         0:00 /usr/sbin/sshd
 1114 ?            Ss         0:00 /bin/login --
 1115 ?            Ss+        0:00 /sbin/getty 38400 tty1 linux
 1116 ?            Ss+        0:00 /sbin/getty 38400 tty2 linux
 1117 ?            Ss+        0:00 /sbin/getty 38400 tty3 linux
 1118 ?            Ss+        0:00 /sbin/getty 38400 tty4 linux
 1119 console    S          0:00 -bash
 1128 console    R+        0:00 ps ax
user1@debian:~$
```

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[https://ma-tech.centurysys.jp/doku.php?id=mae3xx\\_tips:setup\\_lxc:start](https://ma-tech.centurysys.jp/doku.php?id=mae3xx_tips:setup_lxc:start)

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