

NIPUN SINGAL  
500069052  
R171218069

Application Containerization Lab

EXPERIMENT-1

```
Applications  Places  Terminal  Mon Jan 11 5:24 PM  root@anonymous: ~

root@anonymous: ~
root@anonymous: ~

root@anonymous:~# apt-get install virtualbox -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
cryptsetup-nuke-password cython dh-python docutils-common enchant finger libappindicator3-1 libbind9-161 libboost-atomic1.67.0 libboost-chrono1.67.0
libboost-date-time1.67.0 libboost-filesystem1.67.0 libboost-iostreams1.67.0 libboost-regex1.67.0 libbrlapi0.6 libcdio18 libclang1-6.0 libclang1-7 libcodec2-0.8.1
libcroco3 libcrystalhd3 libdc1394-22 libdley-na-core-1.0-3 libdns1104 libdns1110 libdouble-conversion1 libdvdread4 libebook-contacts-1.2-2 libecal-1.2-19
libedataserver-1.2-23 libenchant1c2a libevent-core-2.1-6 libevent-openssl-2.1-6 libevent-pthreads-2.1-6 libexiv2-14 libfluidsynth1 libgeos-3.7.1 libgfbapi0 libgfrpc0
libgfxdr0 libglusterfs0 libgspell-1-1 libgssdp-1.0-3 libgtkmm-2.4-1v5 libgtksourceview2.0-0 libgtksourceview2.0-common libgupnp-1.0-4 libhwloc-3.15 libhavege1
libhttp-parser2.8 libhwloc5 libigmp5 libimlbase23 libindicator3-7 libirs161 libisc1100 libisc1105 libisccc161 libiscfg163 libisl19 libjim0.77 libkryotocabinet16v5
liblinear3 liblirc-client0 libllvm6.0 liblouis17 liblwres161 libmng1 libmozjs-60-0 libmpdec2 libmysofa0 libnfs12 libobjc-8-dev libomp-dev libopenexr23 libperl5.28
libpipewire-0.2-1 libpotrace0 libproj13 libprotobuf-lite17 libprotobuf17 libpython-all-dev libpython3.7 libpython3.7-dev libpython3.7-minimal libpython3.7-stdlib
libpython3.8-dev libqscintilla2-qt4-110n libqscintilla2-qt5-13 libqt5concurrent5 libradare2-3.2 libre2-5 libreadline7 libruby2.5 libsnmp30 libtss2-udev
libusbmuxd4 libvpx5 libwireless11 libwiretap8 libwscodec2 libwsutil9 libwxgtk3.0-0v5 libx264-155 libx265-165 libxdot4 llvm-6.0 llvm-6.0-dev llvm-6.0-runtime llvm-7
llvm-7-dev llvm-7-runtime python-all python-all-dev python-argcomplete python-autobahn python-backports-abc python-blinker python-bottle python-bson python-bson-ext
python-cbor python-certifi python-chameleon python-concurrent.futures python-configargparse python-configobj python-construct python-cssselect python-dateutil
python-dbus python-deprecation python-dicttoxml python-dns python-dnslib python-dnspython python-editor python-elixer python-enchant python-entrypoints
python-faraday python-feedparser python-filedepot python-flask python-flask-classful python-flask-login python-flask-mail python-flask-principal python-flask-restless
python-flask-session python-flask-sqlalchemy python-flaskext.wtf python-formencode python-gevent python-gpg python-greenlet python-gridfs python-gtksourceview2
python-gtkspellcheck python-h2 python-hpack python-html2text python-hupper python-hyperframe python-ipy python-itsdangerous python-jinja2 python-jsonrpc-lib
python-keyring python-keyrings.alt python-ldap3 python-ldapdomaindump python-libxslt1 python-lz4 python-magic python-markupsafe python-marshmallow
python-marshmallow-sqlalchemy python-mimeparse python-mimerender python-mockito python-nplusone python-openid python-packaging python-passlib python-paste
python-pefile python-pexpect python-plaster python-pytablewriter python-pyprocess python-pycryptodome python-pycurl python-pydot python-pyinotify python-pymongo
python-pymongo-ext python-pyparsing python-pypdf2 python-pyperclip python-pyquery python-qrcode python-repoze.lru python-roman python-scgi python-selenium
python-singledispatch python-sip python-slowaes python-slugify python-snappy python-socks python-speaklater python-sqlalchemy-schemadisplay python-sqlparse
python-talloc python-tempita python-tornado python-tqdm python-translationstring python-trie python-trollius python-txaio python-u-msgpack python-ubjson
python-unicodedecsv python-unidecode python-urllib3 python-urwid python-venusian python-waitress python-webob python-websocket python-werkzeug python-wheel
python-whoosh python-wsaccel python-wtforms python-xdg python-xlswriter python-xmlbuilder python-yaml python-zope.component python-zope.deprecation
python-zope.event python-zope.hookable python3-docutils python3-roman python3.7-minimal python3.8-dev qtcore4-l10n ruby-dataobjects ruby-dataobjects-mysql
ruby-dataobjects-postgres ruby-dataobjects-sqlite3 ruby-did-you-mean ruby-dm-core ruby-dm-do-adapter ruby-dm-migrations ruby-dm-sqlite-adapter ruby2.5-dev
ruby2.5-doc rhwo rhwod tpm2-abrmd tpm2-tools x11-apps xsltproc
Use 'apt autoremove' to remove them.
The following additional packages will be installed:
cython3 dkms libbrlapi0.8 libgnutls30 libgsoap-2.8.104 libldb2 liblzf1 libns2 libproj19 libpython3-dev libpython3-stdlib libpython3.9 libpython3.9-dev
libpython3.9-minimal libpython3.9-stdlib libqt5core5a libqt5dbus5 libqt5designer5 libqt5gui5 libqt5help5 libqt5multimedia5 libqt5multimedia5-plugins
libqt5multimedia5widgets5 libqt5network5 libqt5opengl5 libqt5positioning5 libqt5printsupport5 libqt5qml5 libqt5qmlmodels5 libqt5qmlworkerscript5 libqt5quick5
```

```
Applications  Places  Terminal  Tue Jan 12 2:25 PM  root@anonymous: ~/Downloads

root@anonymous: ~/Downloads
root@anonymous: ~/Downloads

root@anonymous:~/Downloads# dpkg -i vagrant_2.2.12_x86_64.deb
Selecting previously unselected package vagrant.
(Reading database ... 462506 files and directories currently installed.)
Preparing to unpack vagrant_2.2.12_x86_64.deb ...
Unpacking vagrant (1:2.2.12) ...
Setting up vagrant (1:2.2.12) ...
Processing triggers for kali-menu (2020.3.2) ...
root@anonymous:~/Downloads# dpkg --help
Usage: dpkg [<option>...] [<command>]

Commands:
-i|--install <.deb file name>... -R|--recursive <directory>...
--unpack <.deb file name>... -R|--recursive <directory>...
-A|--record-avail <.deb file name>... -R|--recursive <directory>...
--configure <package>... -a|--pending
--triggers-only <package>... -a|--pending
-r|--remove <package>... -a|--pending
-P|--purge <package>... -a|--pending
-V|--verify [<package>...] Verify the integrity of package(s).
--get-selections [<pattern>...] Get list of selections to stdout.
--set-selections Set package selections from stdin.
--clear-selections Deselect every non-essential package.
--update-avail [<Packages-file>] Replace available packages info.
--merge-avail [<Packages-file>] Merge with info from file.
--clear-avail Erase existing available info.
--forget-old-unavail Forget uninstalled unavailable pkgs.
-s|--status [<package>...] Display package status details.
-p|--print-avail [<package>...] Display available version details.
-L|--listfiles <package>... List files 'owned' by package(s).
-l|--list [<pattern>...] List packages concisely.
-S|--search [<pattern>...] Find package(s) owning file(s).
-C|--audit [<package>...] Check for broken package(s).
--yet-to-unpack Print packages selected for installation.
--predep-package ScreenPrint pre-dependencies to unpack.
--add-architecture <arch> Add <arch> to the list of architectures.
--remove-architecture <arch> Remove <arch> from the list of architectures.
--print-architecture Print doko architecture.
```

```
Applications  Places  Text Editor  Tue Jan 12 3:01 PM
Vagrantfile
~/app.containerization lab/vagrant1
Save

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # All Vagrant configuration is done below. The "2" in Vagrant.configure
5 # configures the configuration version (we support older styles for
6 # backwards compatibility). Please don't change it unless you know what
7 # you're doing.
8 Vagrant.configure("2") do |config|
9   # The most common configuration options are documented and commented below.
10  # For a complete reference, please see the online documentation at
11  # https://docs.vagrantup.com.
12
13  # Every Vagrant development environment requires a box. You can search for
14  # boxes at https://vagrantcloud.com/search.
15  config.vm.box = "ubuntu/xenial64"
16
17  # Disable automatic box update checking. If you disable this, then
18  # boxes will only be checked for updates when the user runs
19  # `vagrant box outdated`. This is not recommended.
20  # config.vm.box_check_update = false
21
22  # Create a forwarded port mapping which allows access to a specific port
23  # within the machine from a port on the host machine. In the example below,
24  # accessing "localhost:8080" will access port 80 on the guest machine.
25  # NOTE: This will enable public access to the opened port
26  # config.vm.network "forwarded_port", guest: 80, host: 8080
27
28  # Create a forwarded port mapping which allows access to a specific port
29  # within the machine from a port on the host machine and only allow access
30  # via 127.0.0.1 to disable public access
31  # config.vm.network "forwarded_port", guest: 80, host: 8080, host_ip: "127.0.0.1"
32
33  # Create a private network, which allows host-only access to the machine
34  # using a specific IP.
35  # config.vm.network "private_network", ip: "192.168.33.10"
36
37  # Create a public network, which generally matched to bridged network.
38  # Bridged networks make the machine appear as another physical device on
39
Saving file "/root/app.containerization lab/vagrant1/Vagrantfile" ... Ruby Tab Width: 8 Ln 70, Col 4 INS
```

Applications Places Terminal Tue Jan 12 3:01 PM

root@anonymous: ~/app.containerization lab/vagrant1

root@anonymous: ~

root@anonymous: ~/Downloads# cs

bash: cs: command not found

root@anonymous: ~/Downloads# cd

root@anonymous: ~# cd app.containerization\ lab/

root@anonymous: ~/app.containerization lab# cd vagrant1/

root@anonymous: ~/app.containerization lab/vagrant1# vagrant init

==> vagrant: A new version of Vagrant is available: 2.2.14 (installed version: 2.2.12)!

==> vagrant: To upgrade visit: https://www.vagrantup.com/downloads.html

A `Vagrantfile` has been placed in this directory. You are now ready to `vagrant up` your first virtual environment! Please read the comments in the Vagrantfile as well as documentation on `vagrantup.com` for more information on using Vagrant.

root@anonymous: ~/app.containerization lab/vagrant1#

ant box

How to use this box with Vagrant:

Vagrantfile New

Vagrant.configure("2") do |config|

config.vm.box = "ubuntu/xenial64"

end

v20210106.0.0 currently released version

This version was created 6 days ago.

There isn't a description.

```
Applications  Places  Terminal  Tue Jan 12 3:35 PM  1  73 %
root@anonymous: ~/app.containerization lab/vagrant1

root@anonymous: ~
root@anonymous: ~/app.containerization lab/vagrant1

root@anonymous:~/app.containerization lab/vagrant1# vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Box 'ubuntu/xenial64' could not be found. Attempting to find and install...
default: Box Provider: virtualbox
default: Box Version: >= 0
default: Loading metadata for box 'ubuntu/xenial64'
default: URL: https://vagrantcloud.com/ubuntu/xenial64
==> default: Adding box 'ubuntu/xenial64' (v20210106.0.0) for provider: virtualbox
default: Downloading: https://vagrantcloud.com/ubuntu/boxes/xenial64/versions/20210106.0.0/providers/virtualbox.box
==> default: Box download is resuming from prior download progress
Download redirected to host: cloud-images.ubuntu.com
==> default: Successfully added box 'ubuntu/xenial64' (v20210106.0.0) for 'virtualbox'!
==> default: Importing base box 'ubuntu/xenial64'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'ubuntu/xenial64' version '20210106.0.0' is up to date...
==> default: Setting the name of the VM: vagrant1_default_1610445751094_44036
Vagrant is currently configured to create VirtualBox synced folders with
the 'SharedFoldersEnableSymlinksCreate' option enabled. If the Vagrant
guest is not trusted, you may want to disable this option. For more
information on this option, please refer to the VirtualBox manual:

https://www.virtualbox.org/manual/ch04.html#sharedfolders

This option can be disabled globally with an environment variable:

VAGRANT_DISABLE_VBOXSYMLINKCREATE=1

or on a per folder basis within the Vagrantfile:

config.vm.synced_folder '/host/path', '/guest/path', SharedFoldersEnableSymlinksCreate: false
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
default: Adapter 1: nat
==> default: Forwarding ports...
default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
==> default: Booting VM...
```

```
Applications  Places  Terminal  Tue Jan 12 3:42 PM  1  71 %
root@anonymous: ~/app.containerization lab/vagrant1

root@anonymous:~/app.containerization lab/vagrant1# vagrant ssh
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-198-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

0 packages can be updated.
0 of these updates are security updates.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Tue Jan 12 10:10:11 2021 from 10.0.2.2
vagrant@ubuntu-xenial:~$ exit
logout
Connection to 127.0.0.1 closed.
root@anonymous:~/app.containerization lab/vagrant1# vagrant halt
==> default: Attempting graceful shutdown of VM...
root@anonymous:~/app.containerization lab/vagrant1#
```