Building a Sandbox VM which can in turn build Open Contrail release 3.

Current branch is 3.0 May 2016

Initial notes taken from this link, <http://juniper.github.io/contrail-vnc/README.html>

And this one <http://juniper.github.io/contrail-vnc/README.html>

Then Changed based on what I found on route.

# Base build of an Ubuntu 14.04 VM using virt-manager (see other doc)

My Specs.. HD 70GB , single NIC on MGMT.

I’m running 8 cores, 21GB RAM, but see that the cores are not being used efficiently during the built. So just use what ever cores, memory you have available and wait a bit longer.

Follow these steps to build OpenContrail.

# Setup your git sandbox

sudo apt-get install git-core

sudo apt-get install phablet-tools

mkdir contrail; cd contrail

Before you can create a sandbox you will need a github account, and you will need to set up ssh access to github.

Create an account at https://github.com/

first start by setting up your own public/private key pair set. This can use either dsa or rsa, so basically any key you setup will work. On most systems you can use ssh-keygen.

cd into your .ssh directory. Open up the terminal and run:

sudo apt-get install xclip

cd ~/.ssh && ssh-keygen

•next you need to copy this to your clipboard.

cat id\_rsa.pub | xclip

Add your key to your account via the website.

finally setup your git config •git config --global user.name "bob"

git config --global user.name "simojohngreen"

git config --global user.email mr.simon.john.green@gmail.com

(don't forget to restart your command line to make sure the config is reloaded)

Thats it you should be good to clone and checkout.

Now create the sandbox

cd ~/contrail

This creates the .repo flles

repo init -u git@github.com:Juniper/contrail-vnc

This gets the contrail repo files, source code for the vrouter, contreoller, openstack etc. also the make file.

repo sync

now add a new add repo for some extra packages <https://launchpad.net/~opencontrail/+archive/ubuntu/ppa>

suodo apt-add-repository ppa:opencontrail/ppa

sudo apt-get update

sandbox file tools/packages/debian/contrail/debian/control, look for the Build-Depends: current list below.

sudo apt-get install -y autoconf automake bison debhelper flex libcurl4-openssl-dev libexpat-dev libgettextpo0 libprotobuf-dev libtool libxml2-utils make protobuf-compiler python-all python-dev python-lxml python-setuptools python-sphinx ruby-ronn scons unzip vim-common libsnmp-python libipfix librdkafka-dev librdkafka1

New packages in the cntrl file for May 2016, we need to get these directly.

wget http://downloads.datastax.com/cpp-driver/ubuntu/14.04/v2.2.0/cassandra-cpp-driver\_2.2.0-1\_amd64.deb

wget http://downloads.datastax.com/cpp-driver/ubuntu/14.04/v2.2.0/cassandra-cpp-driver-dev\_2.2.0-1\_amd64.deb

wget http://downloads.datastax.com/cpp-driver/ubuntu/14.04/dependencies/libuv/v1.7.5/libuv\_1.7.5-1\_amd64.deb

sudo dpkg -i libuv\_1.7.5-1\_amd64.deb cassandra-cpp-driver\_2.2.0-1\_amd64.deb cassandra-cpp-driver-dev\_2.2.0-1\_amd64.deb

sudo apt-get install libzookeeper-mt-dev

now take the next list from file tools/packages/debian/contrail/debian/builddep.trusty

sudo apt-get install -y libboost-dev libboost-chrono-dev libboost-date-time-dev libboost-filesystem-dev libboost-program-options-dev libboost-python-dev libboost-regex-dev libboost-system-dev libboost-thread-dev libcurl4-openssl-dev google-mock libgoogle-perftools-dev liblog4cplus-dev libtbb-dev libhttp-parser-dev libxml2-dev libicu-dev

This one was added after a build error nov 2015

**sudo apt-get install -y libipfix-dev**

this one was added due to make -f make.packages all dependancies

sudo apt-get install nodejs

this one fixes the following error when doing a make -f name.packages all

\*\*\* No rule to make target `prep-deb-files', needed by `kdist\_config'. Stop.

sudo apt-get install module-assistant

these fixed a javahelper build error later when you build the packages

sudo apt-get install default-jdk

sudo apt-get install libcommons-codec-java

sudo apt-get install libhttpcore-java

sudo apt-get install liblog4j1.2-java

sudo apt-get install ant

sudo apt-get install javahelper

**Customize the build to fix build bugs etc.**

These steps tend to be picked up after build failulres.. they should really be retested each new load.

So some packages are missing in the standard git sync, but do exist in the repo. So I used a local manifest to pick them up. Otherwise the build fails. These are changing a little over time, indicated by lines that are striked out (no longer required)

mkdir .repo/local\_manifests

in here add the file simon.xml

<manifest>

<remote name="github" fetch=".."/>

<default revision="refs/heads/master" remote="github"/>

<project name="contrail-ceilometer-plugin" remote="github" path="openstack/ceilometer\_plugin"/>

~~<project name="contrail-heat" remote="github" path="openstack/contrail-heat"/>~~

</manifest>

also remove contrail-vrouter-dpdk in packages.make "all" target

as dpdk is failing to build (we don’t need it yet)

repo sync

This one fixed an obscure rapidjson not found error, see bugs below.

cd ~/contrail

find . –name fetch\_packages.py

sudo python ./third\_party/fetch\_packages.py

sudo python ./contrail-webui-third-party/fetch\_packages.py

**Patch third party packages**

Downloads and patches a list of 3rd party products. See directory thirdparty

The cache is in /tmp/cache

Packages.xml lists the locations and what to grab.

Third-Party Source run this script and it will download other opensource libraries and patch libraries

sudo python /home/sgreen/contrail/third\_party/fetch\_packages.py

**~~Building all packages using scons~~**

~~Personally I prefer to build each package individually. See steps in procedure below for using make instead.~~

~~Still of you want to use scons here are the steps.~~

~~cd /home/sgreen/contrail/~~

~~Now build~~

~~sudo scons~~

**Building the packages for Ubuntu 14.04 using Make**

**This is how I do it.**

**Build bugs are listed at the end of the doc. Fixed in these procedures with updates.**

~~this scripts does one package at a time Run it from ~/contrail~~

~~sudo sh -c “grep '^source-package-.\*:' packages.make | cut -d : -f 1 | while read i; do~~

~~make -f packages.make $i~~

~~done”~~

I settle on this as its simpler to debug (it stops after a failure)

sudo make -f packages.make all 2>&1 | tee build.log

This builds in dir build/packages the following

drwxr-xr-x 6 root root 4096 May 30 19:20 ceilometer-plugin-contrail

-rw-r--r-- 1 root root 5942 May 30 19:20 ceilometer-plugin-contrail\_1.1master~121b815\_all.deb

-rw-r--r-- 1 root root 875 May 30 19:20 ceilometer-plugin-contrail\_1.1master~121b815\_amd64.changes

drwxr-xr-x 7 root root 4096 May 30 11:31 contrail

-rw-r--r-- 1 root root 8497 May 30 19:19 contrail\_1.1master~e24cc66\_amd64.changes

-rw-r--r-- 1 root root 2525494 May 30 19:04 contrail-analytics\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 35911210 May 30 19:06 contrail-analytics-dbg\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 5266220 May 30 19:06 contrail-config\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 105574 May 30 19:06 contrail-config-openstack\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 2862916 May 30 19:06 contrail-control\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 50846072 May 30 19:09 contrail-control-dbg\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 30450754 May 30 19:11 contrail-dns\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 90264 May 30 19:19 contrail-docs\_1.1master~e24cc66\_amd64.deb

drwxr-xr-x 7 root root 4096 May 30 19:20 contrail-heat

-rw-r--r-- 1 root root 32158 May 30 19:20 contrail-heat\_1.1master~1722d7e\_all.deb

-rw-r--r-- 1 root root 799 May 30 19:20 contrail-heat\_1.1master~1722d7e\_amd64.changes

-rw-r--r-- 1 root root 1576314 May 30 19:19 contrail-lib\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 81652 May 30 19:19 contrail-nodemgr\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 5726 May 30 19:19 contrail-nova-driver\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 43422 May 30 19:19 contrail-utils\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 1475374 May 30 19:19 contrail-vrouter-3.19.0-25-generic\_1.1master~e24cc66\_all.deb

-rw-r--r-- 1 root root 7876082 May 30 19:11 contrail-vrouter-agent\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 156857184 May 30 19:19 contrail-vrouter-agent-dbg\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 2308 May 30 19:19 contrail-vrouter-dbg\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 174382 May 30 19:19 contrail-vrouter-dkms\_1.1master~e24cc66\_amd64.deb

drwxr-xr-x 4 root root 4096 May 30 00:14 contrail-vrouter-dpdk

-rw-r--r-- 1 root root 229832 May 30 19:19 contrail-vrouter-source\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 576382 May 30 19:19 contrail-vrouter-utils\_1.1master~e24cc66\_amd64.deb

drwxr-xr-x 6 root root 4096 May 30 19:01 contrail-web-controller

-rw-r--r-- 1 root root 603888 May 30 19:01 contrail-web-controller\_1.1master~e24cc66\_all.deb

-rw-r--r-- 1 root root 840 May 30 19:01 contrail-web-controller\_1.1master~e24cc66\_amd64.changes

-rw-r--r-- 1 root root 10515972 May 30 19:01 contrail-web-controller\_1.1master~e24cc66.orig.tar.gz

drwxr-xr-x 8 root root 4096 May 30 19:01 contrail-web-core

-rw-r--r-- 1 root root 807 May 30 19:01 contrail-web-core\_1.1master~e24cc66\_amd64.changes

-rw-r--r-- 1 root root 6407902 May 30 19:01 contrail-web-core\_1.1master~e24cc66\_amd64.deb

drwxr-xr-x 8 root root 4096 May 30 19:00 ifmap-server

-rw-r--r-- 1 root root 321452 May 30 19:00 ifmap-server\_0.3.2-1contrail2\_all.deb

-rw-r--r-- 1 root root 854 May 30 19:00 ifmap-server\_0.3.2-1contrail2\_amd64.changes

-rw-r--r-- 1 root root 172877 May 30 19:00 ifmap-server\_0.3.2.orig.tar.gz

drwxr-xr-x 8 root root 4096 May 30 19:19 neutron-plugin-contrail

-rw-r--r-- 1 root root 67522 May 30 19:19 neutron-plugin-contrail\_1.1master~d6a1fe0\_all.deb

-rw-r--r-- 1 root root 862 May 30 19:19 neutron-plugin-contrail\_1.1master~d6a1fe0\_amd64.changes

-rw-r--r-- 1 root root 456180 May 30 19:19 python-contrail\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 12042 May 30 19:19 python-contrail-vrouter-api\_1.1master~e24cc66\_amd64.deb

-rw-r--r-- 1 root root 28746 May 30 19:19 python-opencontrail-vrouter-netns\_1.1master~e24cc66\_amd64.deb

**Run unit tests with scons**

apt-get install python-virtualenv python-libxml2 libxslt1-dev

make sure ping `hostname`

cd /home/sgreen/contrail/

scons test

**for debug install eclipse (IDE)**

**Pre-built examples for OpenContrail**

**This link has prebuild deb packages to download.**

**Bult by the tcp cloud team**

**https://launchpad.net/~tcpcloud**

If you want to contribute, use Opencontrail upstream Gerrit to submit patches for review:

<https://review.opencontrail.org/#/q/project:Juniper/contrail-packages,n,z>

**Build Bugs: These are logged here, fixed in the updated procedures above.**

Bug1) Build error

new error saying can't cd to openstack ceilometer\_plugin

fix is to run

python third\_party/fetch\_packages.py

check this file for ceilometer packages first

Bug 2)

a straight sudo make -f packages.make all failed initially

problem one is cured with the package update in the procedure.

Bug 3)

mkdir -p build/packages/ceilometer-plugin-contrail

cp -R tools/packages/debian/ceilometer-plugin-contrail/debian build/packages/ceilometer-plugin-contrail

chmod u+x build/packages/ceilometer-plugin-contrail/debian/rules

cp -R openstack/ceilometer\_plugin/\* build/packages/ceilometer-plugin-contrail

cp: cannot stat ‘openstack/ceilometer\_plugin/\*’: No such file or directory

make: \*\*\* [package-ceilometer-plugin-contrail] Error 1

this link seems to have a fix

<https://github.com/Juniper/contrail-vnc/pull/21>

two file changes are recommended,

./.repo/manifests/default.xml

./.repo/manifests/noauth.xml

great guide here <https://wiki.cyanogenmod.org/w/Doc:_Using_manifests>

these manifest files in .repo are updated whenever we do a repo sync, so editing these doesn't seem like a good idea. What about local manifests.

mkdir .repo/local\_manifests

in here add the file simon.xml

<manifest>

<remote name="github" fetch=".."/>

<default revision="refs/heads/master" remote="github"/>

<project name="contrail-ceilometer-plugin" remote="github" path="openstack/ceilometer\_plugin"/>

<project name="contrail-heat" remote="github" path="openstack/contrail-heat"/>

</manifest>

bug 4)

Build fails with dpdk errors (Jan 2016)

For now I don’t’ need the dpdk images. So..

remove contrail-vrouter-dpdk in packages.make "all" target

I # out the two check for precise and trusty that set dpdk

repo sync

bug5)

New build dependancies in the may build, solved by adding these steps above.

wget http://downloads.datastax.com/cpp-driver/ubuntu/14.04/v2.2.0/cassandra-cpp-driver\_2.2.0-1\_amd64.deb

wget http://downloads.datastax.com/cpp-driver/ubuntu/14.04/v2.2.0/cassandra-cpp-driver-dev\_2.2.0-1\_amd64.deb

wget http://downloads.datastax.com/cpp-driver/ubuntu/14.04/dependencies/libuv/v1.7.5/libuv\_1.7.5-1\_amd64.deb

sudo dpkg -i libuv\_1.7.5-1\_amd64.deb cassandra-cpp-driver\_2.2.0-1\_amd64.deb cassandra-cpp-driver-dev\_2.2.0-1\_amd64.deb

sudo apt-get install libzookeeper-mt-dev

bug6)

build error

(cd /home/sgreen/contrailv2; scons --opt=production --root=/home/sgreen/contrailv2/build/packages/contrail install)

scons: Reading SConscript files ...

/home/sgreen/contrailv2/third\_party/rapidjson not present

make[2]: \*\*\* [override\_dh\_auto\_build] Error 1

looking in the ppa repo

Package: librapidjson-dev

Source: rapidjson

apt-get install librapidjson-dev

nope still fails..

sudo scons --opt=production --root=/home/sgreen/contrailv2/build/packages/contrail install

scons: Reading SConscript files ...

/home/sgreen/contrailv2/third\_party/rapidjson not present

this gave me a hint <http://lists.opencontrail.org/pipermail/users_lists.opencontrail.org/2014-December/000531.html>

now this fixed it

cd ~/contrail

find . –name fetch\_packages.py

sudo python ./third\_party/fetch\_packages.py

sudo python ./contrail-webui-third-party/fetch\_packages.py