Contrail ISSU for a TripleO provisioned cluster

This guide explains how to perform ISSU for a Contrail cluster from a 3.2.x version to a 4.y version.

# Requirements

1. Fully functional (and pre-existing) 3.2.x Contrail cluster deployed using TripleO/RedHat-Director
2. Access to Contrail’s 4.y packages
3. Additional 9 target-nodes for deploying the Contrail 4.y cluster in HA setting, or 3 additional target-nodes for a non-HA

# Steps

1. Import the target-nodes for the new Contrail cluster to Ironic
2. Introspect the new nodes
3. Change the ‘Count’ for Contrail-Control-plane nodes appropriately (set it to ‘2’ for non-HA and ‘6’ for HA setting)
4. Host the packages for the target version (Contrail 4.y) at this location on the undercloud: /var/www/html/contrail-new
5. Create a new rabbitmq-vhost on the OpenStack node
6. Modify the environments/contrail/node-specific-hieradata.yaml according to your topology (The file has a working sample and instructions on how to populate the file)
7. Redeploy the cluster. Include the node-specific-hieradata.yaml in the deploy command
   1. At the end of this step, you would have another parallel Contrail cluster in addition to the pre-existing one
8. Fetch the contrail-ISSU scripts from here: github.com/ankitchadha/issu-scripts
   1. The ISSU scripts would be run from one of the newly created Contrail controllers
   2. Set up passwordless SSH from this node to all other overcloud nodes
   3. add repo\_location in contrail-issu.conf (this file is copied from new controller to computes) repo\_location=/etc/yum.repos.d/contrail-new.repo
9. Create the contrail-issu.conf file (sample provided on the github repo)
10. Start ISSU
    1. ./migrate\_config
    2. ./migrate\_compute <<<< Do not use the int-api network here
    3. ./finalize\_issu

## Sample deploy command:

[stack@undercloud-newtonx ~]$ cat contrail-deploy.sh

time openstack overcloud deploy --templates tripleo-heat-templates/ \

--roles-file tripleo-heat-templates/environments/contrail/roles\_data.yaml \

-e tripleo-heat-templates/environments/contrail/node-specific-hieradata.yaml \

-e tripleo-heat-templates/environments/puppet-pacemaker.yaml \

-e tripleo-heat-templates/environments/contrail/contrail-services.yaml \

-e tripleo-heat-templates/environments/contrail/network-isolation.yaml \

-e tripleo-heat-templates/environments/contrail/contrail-net.yaml \

-e tripleo-heat-templates/environments/contrail/ips-from-pool-all.yaml \

-e tripleo-heat-templates/environments/network-management.yaml \

-e tripleo-heat-templates/environments/contrail/hostname-map.yaml \

-e tripleo-heat-templates/extraconfig/pre\_deploy/rhel-registration/environment-rhel-registration.yaml \

-e tripleo-heat-templates/extraconfig/pre\_deploy/rhel-registration/rhel-registration-resource-registry.yaml \

--libvirt-type qemu

## Sample Captures (from a non-HA cluster)

## ‘count’ variables within contrail-services.yaml when only one Contrail cluster was present (the pre-existing 3.2 cluster):

[stack@undercloud-newtonx ~]$ grep -Ri count tripleo-heat-templates/environments/contrail/contrail-services.yaml

ControllerCount: 1

ContrailControllerCount: 1

ContrailAnalyticsCount: 1

ContrailAnalyticsDatabaseCount: 1

ContrailTsnCount: 0

ComputeCount: 1

ContrailDpdkCount: 0

[stack@undercloud-newtonx ~]$

## Location of new 4.x Contrail packages on the Undercloud:

[stack@undercloud-newtonx ~]$ ls -lrt /var/www/html/

total 24

drwxr-xr-x. 3 33694 757 8192 Oct 11 03:06 contrail-new

drwxr-xr-x. 3 33694 757 8192 Oct 12 13:04 contrail

[stack@undercloud-newtonx ~]$ ls /var/www/html/contrail-new/

authbind-2.1.1-0.0contrail0.x86\_64.rpm contrail-openstack-vrouter-4.0.2.0-35.el7.noarch.rpm nodejs-0.10.35-1contrail.el7.x86\_64.rpm

bigtop-utils-0.6.0+243-1.cdh4.7.0.p0.17.0contrail0.el7.noarch.rpm contrail-openstack-webui-4.0.2.0-35.el7.noarch.rpm opscenter-5.2.4-1.noarch.rpm

cassandra20-2.0.17-1.noarch.rpm contrail-setup-4.0.2.0-35.el7.noarch.rpm protobuf-2.5.0-8.0contrail0.el7.x86\_64.rpm

cassandra21-2.1.9-1.noarch.rpm contrail-tripleo-heat-templates-4.0.2.0-35.el7.noarch.rpm puppet-contrail-4.0.2.0-35.el7.noarch.rpm

cassandra22-2.2.8-1.noarch.rpm contrail-tripleo-puppet-4.0.2.0-35.el7.noarch.rpm python-bitarray-0.8.0-0contrail.el7.x86\_64.rpm

cassandra-cpp-driver-2.2.0-1.el7.centos.x86\_64.rpm contrail-utils-4.0.2.0-35.el7.x86\_64.rpm python-bitstring-3.1.5-1.0contrail0.x86\_64.rpm

ceilometer-plugin-contrail-4.0.2.0-35.el7.noarch.rpm contrail-vrouter-4.0.2.0-35.el7.x86\_64.rpm python-boto-2.12.0-2contrail.el7.x86\_64.rpm

consistent\_hash-1.0-0contrail0.el7.noarch.rpm contrail-vrouter-agent-4.0.2.0-35.el7.x86\_64.rpm python-bottle-0.11.6-0contrail.el7.noarch.rpm

contrail-analytics-4.0.2.0-35.el7.x86\_64.rpm contrail-vrouter-common-4.0.2.0-35.el7.noarch.rpm python-cassandra-driver-3.0.0-0contrail2.el7.x86\_64.rpm

contrail-cni-4.0.2.0-35.el7.x86\_64.rpm contrail-vrouter-dpdk-4.0.2.0-35.el7.x86\_64.rpm python-contrail-4.0.2.0-35.el7.x86\_64.rpm

contrail-config-4.0.2.0-35.el7.noarch.rpm contrail-vrouter-dpdk-init-4.0.2.0-35.el7.x86\_64.rpm python-contrail-vrouter-api-4.0.2.0-35.el7.x86\_64.rpm

contrail-config-openstack-4.0.2.0-35.el7.x86\_64.rpm contrail-vrouter-init-4.0.2.0-35.el7.x86\_64.rpm python-Fabric-1.7.5-1.2contrail0.noarch.rpm

contrail-control-4.0.2.0-35.el7.x86\_64.rpm contrail-vrouter-source-4.0.2.0-35.el7.x86\_64.rpm python-gevent-1.1rc5-1contrail1.el7.x86\_64.rpm

contrail-database-4.0.2.0-35.el7.noarch.rpm contrail-vrouter-utils-4.0.2.0-35.el7.x86\_64.rpm python-geventhttpclient-1.0a-0contrail.el7.x86\_64.rpm

contrail-database-common-4.0.2.0-35.el7.noarch.rpm contrail-web-controller-4.0.2.0-35.x86\_64.rpm python-jsonpickle-0.3.1-2.1.el7.noarch.rpm

contrail-dns-4.0.2.0-35.el7.x86\_64.rpm contrail-web-core-4.0.2.0-35.x86\_64.rpm python-kafka-1.0.2-0contrail0.el7.noarch.rpm

contrail-docker-tools-4.0.2.0-35.el7.noarch.rpm datastax-agent-5.2.4-1.noarch.rpm python-kazoo-1.3.1-1.1contrail2.el7.noarch.rpm

contrail-docs-4.0.2.0-35.el7.x86\_64.rpm docker-engine-1.13.0-1.el7.centos.x86\_64.rpm python-meld3-0.6.10-1.0contrail0.el7.x86\_64.rpm

contrail-fabric-utils-4.0.2.0-35.noarch.rpm docker-engine-selinux-1.13.0-1.el7.centos.noarch.rpm python-neutronclient-6.0.0-2contrail1.el7.noarch.rpm

contrail-heat-4.0.2.0-35.el7.noarch.rpm euca2ools-1.0-2contrail.x86\_64.rpm python-opencontrail-vrouter-netns-4.0.2.0-35.el7.x86\_64.rpm

contrail-interface-name-4.0.2.0-35.el7.noarch.rpm hc-httpcore-4.1-1.jpp6.noarch.rpm python-pycassa-1.10.0-0contrail.el7.noarch.rpm

contrail-k8s-cni-4.0.2.0-35.el7.x86\_64.rpm kafka-2.11-0.9.0.1.0contrail0.el7.x86\_64.rpm python-requests-2.6.0-1.1contrail1.el7.noarch.rpm

contrail-kube-cni-4.0.2.0-35.el7.x86\_64.rpm librdkafka1-0.8.5-2.0contrail0.el7.centos.x86\_64.rpm python-sseclient-0.0.11-0contrail0.el7.noarch.rpm

contrail-kube-manager-4.0.2.0-35.el7.x86\_64.rpm librdkafka-devel-0.8.5-2.0contrail0.el7.centos.x86\_64.rpm python-thrift-0.9.1-0contrail.el7.x86\_64.rpm

contrail-lib-4.0.2.0-35.el7.x86\_64.rpm liburcu2-0.8.4-2.1.2contrail0.x86\_64.rpm redis-py-0.1-2contrail.el7.noarch.rpm

contrail-mesos-manager-4.0.2.0-35.el7.x86\_64.rpm liburcu-devel-0.8.4-2.1.2contrail0.x86\_64.rpm repodata

contrail-nodemgr-4.0.2.0-35.el7.x86\_64.rpm libuv-1.7.5-1.el7.centos.x86\_64.rpm supervisor-3.1.3-3.0contrail0.el7.noarch.rpm

contrail-nova-vif-4.0.2.0-35.el7.x86\_64.rpm libzookeeper-3.4.8-0contrail0.el7.x86\_64.rpm tunctl-1.5-3.0contrail0.el7.x86\_64.rpm

contrail-openstack-4.0.2.0-35.el7.noarch.rpm net-snmp-python-5.7.2-24.el7\_2.1.x86\_64.rpm xmltodict-0.7.0-0contrail.el7.noarch.rpm

contrail-openstack-analytics-4.0.2.0-35.el7.noarch.rpm net-snmp-python-5.7.2-24.el7\_3.2.x86\_64.rpm yum-plugin-priorities-1.1.31-34.0contrail0.el7.noarch.rpm

contrail-openstack-config-4.0.2.0-35.el7.noarch.rpm net-snmp-python-5.7.2-24.el7.x86\_64.rpm zookeeper-3.4.8-0contrail1.el7.x86\_64.rpm

contrail-openstack-control-4.0.2.0-35.el7.noarch.rpm net-snmp-python-5.7.2-28.el7.x86\_64.rpm

contrail-openstack-database-4.0.2.0-35.el7.noarch.rpm neutron-plugin-contrail-4.0.2.0-35.el7.noarch.rpm

## After creating the ‘new’ rabbitmq-vhost on the openstack node:

[root@os-0 ~]# rabbitmqctl list\_vhosts

Listing vhosts ...

/

new

[root@os-0 ~]#

## Node-specific-hieradata file for this cluster:

[stack@undercloud-newtonx ~]$ cat tripleo-heat-templates/environments/contrail/node-specific-hieradata.yaml

resource\_registry:

OS::TripleO::ContrailAnalyticsDatabaseExtraConfigPre: ../../puppet/extraconfig/pre\_deploy/per\_node.yaml

OS::TripleO::ContrailAnalyticsExtraConfigPre: ../../puppet/extraconfig/pre\_deploy/per\_node.yaml

OS::TripleO::ContrailControllerExtraConfigPre: ../../puppet/extraconfig/pre\_deploy/per\_node.yaml

OS::TripleO::ComputeExtraConfigPre: ../../puppet/extraconfig/pre\_deploy/per\_node.yaml

parameter\_defaults:

NodeDataLookup: |

{"003FEF0B-FC16-4C2E-B7EA-1B30008948A8": {"contrail::contrail\_version": 3, "contrail\_analytics\_database\_node\_ips": ["10.0.0.60"], "contrail\_database\_node\_ips": ["10.0.0.40"], "contrail\_analytics\_database\_short\_node\_names": ["cadb-0"]},

"99FD12A9-191C-41B3-BF6B-3CE30C63CC01": {"contrail::contrail\_version": 3},

"D4B82082-5D64-4674-93AB-7377B6311820": {"contrail::contrail\_version": 3, "contrail\_database\_node\_ips": ["10.0.0.40"]},

"8350F888-1BB8-4CE9-9F48-096CAD3F39A9": {"contrail::contrail\_version": 3, "contrail\_analytics\_database\_node\_ips": ["10.0.0.60"], "contrail\_database\_node\_ips": ["10.0.0.40"]},

"AB15DEA1-89B8-4621-9F79-5A6AE25BCF93": {"contrail::contrail\_version": 3},

"AC0ED5FE-4B6E-4ED5-8FB7-A960E53F03B1": {"contrail\_database\_node\_ips": ["10.0.0.41"], "contrail::rabbit\_vhost": "new", "contrail\_config\_node\_ips": ["10.0.0.41"], "contrail\_analytics\_node\_ips": ["10.0.0.51"], "contrail\_config\_vip": "10.0.0.41"},

"38354BE7-77BD-4A8A-8C7C-3BED64A05684": {"contrail\_analytics\_database\_node\_ips": ["10.0.0.61"], "contrail\_database\_node\_ips": ["10.0.0.41"], "contrail::rabbit\_vhost": "new", "contrail\_config\_node\_ips": ["10.0.0.41"], "contrail\_analytics\_node\_ips": ["10.0.0.51"], "contrail\_config\_vip": "10.0.0.41"},

"ED773F6E-AA03-41FD-A6CF-649205071D70": {"contrail\_analytics\_database\_node\_ips": ["10.0.0.61"], "contrail\_database\_node\_ips": ["10.0.0.41"], "contrail\_analytics\_database\_short\_node\_names": ["cadb-1"], "contrail::rabbit\_vhost": "new", "contrail\_analytics\_node\_ips": ["10.0.0.41"], "contrail\_config\_vip": "10.0.0.41"}}

## Contrail-services.yaml before re-deploying the cluster:

[stack@undercloud-newtonx ~]$ grep -Ri count tripleo-heat-templates/environments/contrail/contrail-services.yaml

ControllerCount: 1

ContrailControllerCount: 2

ContrailAnalyticsCount: 2

ContrailAnalyticsDatabaseCount: 2

ContrailTsnCount: 0

ComputeCount: 1

ContrailDpdkCount: 0

[stack@undercloud-newtonx ~]$

## After re-deploying the cluster:

[stack@undercloud-newtonx ~]$ heat stack-list

WARNING (shell) "heat stack-list" is deprecated, please use "openstack stack list" instead

+--------------------------------------+------------+-----------------+----------------------+----------------------+

| id | stack\_name | stack\_status | creation\_time | updated\_time |

+--------------------------------------+------------+-----------------+----------------------+----------------------+

| 2b942435-838a-4eca-9f30-f472c8b1c569 | overcloud | UPDATE\_COMPLETE | 2017-10-31T17:07:29Z | 2017-10-31T18:35:04Z |

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[stack@undercloud-newtonx ~]$ nova list

+--------------------------------------+-----------+--------+------------+-------------+---------------------+

| ID | Name | Status | Task State | Power State | Networks |

+--------------------------------------+-----------+--------+------------+-------------+---------------------+

| db4012e3-b704-423a-96e1-0c01b417aff5 | ca-0 | ACTIVE | - | Running | ctlplane=192.0.2.13 |

| 6359b08c-6ea3-4e7b-881f-22ae3e15e9f4 | ca-1 | ACTIVE | - | Running | ctlplane=192.0.2.10 |

| f59129d0-7d82-4ce1-a96f-f3726547466b | cadb-0 | ACTIVE | - | Running | ctlplane=192.0.2.9 |

| d9f850ad-788e-4997-ac5e-c5ec5d9c44aa | cadb-1 | ACTIVE | - | Running | ctlplane=192.0.2.18 |

| f819fd30-34cd-48d5-89bf-9c0f84c9330d | cc-0 | ACTIVE | - | Running | ctlplane=192.0.2.17 |

| a1b9d17d-4b3d-41aa-bbb0-d483b16224b3 | cc-1 | ACTIVE | - | Running | ctlplane=192.0.2.12 |

| 80948ce7-c2ff-4686-8bb4-69534f64d565 | compute-0 | ACTIVE | - | Running | ctlplane=192.0.2.16 |

| c40d3962-c6a9-4ffe-a11d-19ab44d6796a | os-0 | ACTIVE | - | Running | ctlplane=192.0.2.20 |

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[stack@undercloud-newtonx ~]$

## Info from the new Controller:

[root@cc-1 ~]# contrail-version

Repository Contrail is listed more than once in the configuration

Package Version Build-ID | Repo | RPM Name

-------------------------------------- ------------------------------ ----------------------------------

contrail-config 4.0.2.0-35.el7 @Contrail

contrail-config-openstack 4.0.2.0-35.el7 @Contrail

contrail-control 4.0.2.0-35.el7 @Contrail

contrail-database 4.0.2.0-35.el7 @Contrail

contrail-dns 4.0.2.0-35.el7 @Contrail

contrail-lib 4.0.2.0-35.el7 @Contrail

contrail-nodemgr 4.0.2.0-35.el7 @Contrail

contrail-openstack-config 4.0.2.0-35.el7 @Contrail

contrail-openstack-control 4.0.2.0-35.el7 @Contrail

contrail-openstack-webui 4.0.2.0-35.el7 @Contrail

contrail-setup 4.0.2.0-35.el7 @Contrail

contrail-utils 4.0.2.0-35.el7 @Contrail

contrail-web-controller 4.0.2.0-35 @Contrail

contrail-web-core 4.0.2.0-35 @Contrail

neutron-plugin-contrail 4.0.2.0-35.el7 @Contrail

puppet-contrail 1.0.0-2.c0f7cdegit.el7ost @rhos-10.0-signed

python-contrail 4.0.2.0-35.el7 @Contrail

[root@cc-1 ~]# contrail-status

== Contrail Control ==

supervisor-control: active

contrail-control active

contrail-control-nodemgr active

contrail-dns active

contrail-named active

== Contrail Config ==

supervisor-config: active

contrail-api:0 active

contrail-config-nodemgr active

contrail-device-manager active

contrail-schema active

contrail-svc-monitor active

== Contrail Web UI ==

supervisor-webui: active

contrail-webui active

contrail-webui-middleware active

== Contrail Database ==

contrail-database: active

[root@cc-1 ~]#

Now you have 2 Contrail clusters. The next steps are to start executing the ISSU scripts.