

更新日 : 2019/12/1

本手順は Contrail Command から Contrail Contrail Controller(1912)、Contrail Insight(Appformix)、OpenStack(Queens)をインストールする手順となる。

最新 Version の Install は本手順を参考に以下を参照下さい

https://www.juniper.net/documentation/en_US/contrail20/information-products/pathway-pages/contrail-install-and-upgrade-guide.html

Contrail Version 毎に Supported SW Version は異なっているため、以下の通りインストールする必要がある

https://www.juniper.net/documentation/en_US/release-independent/contrail/topics/reference/contrail-supported-platforms.pdf

環境情報 :

Network:

Mgmt - 192.168.0.0/24

Data - 192.168.1.0/24

Server:

Contrail Command : 192.168.0.2

Contrail Controller/Service Node : 192.168.0.3 / 192.168.1.3

Appformix : 192.168.0.4 / 192.168.1.4

Appformix Flow : 192.168.0.5 / 192.168.1.5

OpenStack Controller : 192.168.0.6 / 192.168.1.6

OpenStack Compute1 : 192.168.0.7 / 192.168.1.7

OpenStack Compute2 : 192.168.0.8 / 192.168.1.8

HA 構成の場合、Contrail Controller、OpenStack Controller をそれぞれ 3 台用意

※Contrail Command は冗長不可

Step0: OS Install

上記 7 台のサーバに CentOS 7 をインストールし、IP Address 設定、SELINUX Permissive、Yum Update を実施。

本手順では割愛する

Step1: Contrail Command Install

Docker Install

```
yum install -y yum-utils device-mapper-persistent-data lvm2
yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
yum install -y docker-ce-18.06.0.ce
systemctl enable docker
systemctl start docker
```

Contrail Image Download のため、hub.juniper.net に login

```
docker login hub.juniper.net --username xxxx --password xxxx
```

以下で使用可能な Tag を確認(今回は 1912.32 を使用)

```
curl https://xxxx:xxxx@hub.juniper.net/v2/contrail/contrail-command/tags/list
```

Contrail Image Download

```
docker pull hub.juniper.net/contrail/contrail-command-deployer:1912.32
```

Appformix 準備

```
mkdir /opt/software  
mkdir /opt/software/appformix  
mkdir /opt/software/xflow
```

/opt/software/xflow に以下の Image を保存

```
appformix-flows-ansible-1.0.6.tar.gz  
appformix-flows-1.0.6.tar.gz
```

/opt/software/appformix に以下の Image を保存

```
appformix-3.1.11.tar.gz  
appformix-dependencies-images-3.1.11.tar.gz  
appformix-kubernetes-images-3.1.11.tar.gz  
appformix-lxc-images-3.1.11.tar.gz  
appformix-network_device-images-3.1.11.tar.gz  
appformix-openstack-images-3.1.11.tar.gz  
appformix-platform-images-3.1.11.tar.gz
```

/opt/software/ppformix に License を保存

```
appformix-internal-kubernetes-3.1.sig
```

Appformix, AppformixFlow と Contrail の Version Compatibility は以下を参照

<https://ssd-git.juniper.net/appformix/AppFormix/wikis/AppFormix-installation-via-Contrail-Command>

<https://ssd-git.juniper.net/appformix/AppFormix/wikis/AppFormix-Flows>

command_servers.yml を作成

```
---  
user_command_volumes:  
- /opt/software/appformix:/opt/software/appformix  
- /opt/software/xflow:/opt/software/xflow  
  
command_servers:  
  server1:  
    ip: 192.168.0.2  
    connection: ssh  
    ssh_user: root  
    ssh_pass: contrail123  
    sudo_pass: contrail123
```

```

ntpserver: 210.173.160.27

registry_insecure: false
container_registry: hub.juniper.net/contrail
container_tag: 1912.32
container_registry_username: xxxx
container_registry_password: xxxx
config_dir: /etc/contrail

contrail_config:
  database:
    type: postgres
    dialect: postgres
    password: contrail123
  keystone:
    assignment:
      data:
        users:
          admin:
            password: contrail123
  insecure: true
  client:
    password: contrail123

```

Contrail Command Install

```
docker run -td --net host -v /root/command_servers.yml:/command_servers.yml --privileged --name contrail_command_deployer hub.juniper.net/contrail/contrail-command-deployer:1912.32
```

Install 状況を以下で確認

```
docker logs -f contrail_command_deployer
```

以下のように failed が 0 であれば Install 完了

```

PLAY RECAP *****
192.168.0.2      : ok=51  changed=29  unreachable=0  failed=0
localhost       : ok=4   changed=2   unreachable=0  failed=0

```

以下のように contrail_psql, contrail_command_deployer が Up していることを確認

```
[root@command ~]# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED
a060eab2baec	circleci/postgres:10.3-alpine	"docker-entrypoint.s..."	2 minutes ago
Up 2 minutes	contrail_psql		
beaae205299a	hub.juniper.net/contrail/contrail-command-deployer:1912.32	"/entrypoint.sh /bin..."	4 minutes ago
Up 4 minutes	contrail_command_deployer		

Step2. Contrail Fabric TopN 表示のための設定

Contrail Command に Login

```
docker exec -it contrail_command bash
```

以下を変更

```
/usr/share/contrail/public/feature-list.json
```

```
"xflow_top_n": true
```

Step2: Contrail Cluster, OpenStack Install

ここからは Contrail Command に GUI アクセスし、必要な設定を行う

<https://192.168.0.2:9091>

Error! Filename not specified.

Step2.1 Credential 登録

Credentials -> Add をクリック

Error! Filename not specified.

user/pass = root/contrail123 の Credential を作成

Error! Filename not specified.

Step2.2 インベントリ登録

Servers -> Add をクリック

Error! Filename not specified.

Contrail Controllerのインベントリを作成

☐Hostname: contrail , Credential: root, eth0: 192.168.0.3 , eth1: 192.168.1.3

Error! Filename not specified.

Error! Filename not specified.

上記同様に以下のインベントリを作成

Hostname: appformix , Credential: root, eth0: 192.168.0.4 , eth1: 192.168.1.4

Hostname: appformix-flow, Credential: root, eth0: 192.168.0.5 , eth1: 192.168.1.5

Hostname: os-ctl, Credential: root, eth0: 192.168.0.6 , eth1: 192.168.1.6

Hostname: os-cmp1, Credential: root, eth0: 192.168.0.7 , eth1: 192.168.1.7

Hostname: os-cmp2, Credential: root, eth0: 192.168.0.8 , eth1: 192.168.1.8

Error! Filename not specified.

Step2.3 Provisioning Option

Container Registry Username: xxxx

Container Registry Password: xxxx

NTP Server: 210.173.160.27

Contrail Version: 1912.32

CONTROL_NODES: 192.168.1.3

<--- Contrail Controller の DataPlaneInterface IP

PHYSICAL_INTERFACE: eth1

<--- Contrail Controller の DataPlaneInterface Name

CONTRAIL_CONTAINER_TAG: 1912.32

Error! Filename not specified.

Error! Filename not specified.

HA 構成の場合、CONTROL_NODES は以下のように設定
192.168.1.3,192.168.1.4,192.168.1.5

Step2.4 Control Node

Contrail Controller 用 Server を Assigned Control nodes へ移行

※Role は自動で付与される

Error! Filename not specified.

Error! Filename not specified.

HA 構成の場合、"High availability mode"にチェックをいれ、Contrail Controller を 3 台追加

Step2.5 Orchestrator Node

Orchestrator Type: OpenStack

Assigned OpenStack nodes に os-ctl を移行

Customize Configuration に以下を指定

```
nova.conf: |
    [libvirt]
    virt_type=qemu
    cpu_mode=none
```

Kolla Global に以下を指定

enable_haproxy: no

enable_ironic: no

enable_swift: yes

swift_disk_partition_size: 20GB

openstack_release: queens

Error! Filename not specified.

Error! Filename not specified.

Error! Filename not specified.

※上記キャプチャは VIP を設定しているが、設定不要

HA 構成の場合、Kolla Global に以下を追加し、OpenStack Controller 3 台を assigned openstack node に追加

kolla_internal_vip_address : 192.168.0.98

enable_haproxy: yes

※各 OpenStack Controller で HAProxy が稼働し、いずれか 1 台で VIP(192.168.0.98)が付与される

※Contrail 用も本 VIP が使用される

Step2.6 Compute Node

VRouter をインストールするサーバを Assigned Compute Node に移行

※今回は os-cmp1, os-cmp2 に vRouter をインストールする

Default vRouter Gateway は vRouter の Default Gateway(xmpp 接続用の DataPlane 側)

Error! Filename not specified.
Error! Filename not specified.

Step2.7 Service Node

Service Node は使用しないのでブランクのまま

Error! Filename not specified.

Step2.8 Appformix Node

Appformix で監視対象のサーバを全て Assigned Appformix Node に移行

Appformix License は Contrail Command の/opt/software/appformix に入れた LicenseFile 名

Role のアサインは以下の通り

Appformix Controller : appformix_platform_node

その他全て : appformix_bare_host_node

Error! Filename not specified.

Step2.9 Appformix Flow Node

Option1: Telemetry Interface に Out of Band(mgmt)を使用する場合

Virtual IP Address は未使用の IP を指定

Error! Filename not specified.

Option2: Telemetry Interface に In Band(DataNet)を使用する場合

Management Virtual IP Address は未使用の IP を指定

Virtual IP Address は未使用の IP を指定

VLANID: telemetry 用に Interface を分ける場合は VLAN 0 で OK, Data Interface と同じであれば VLAN を指定

Error! Filename not specified.

Error! Filename not specified.

Step2.10 Provisioning

Provisioning をクリックし、Install 開始

Error! Filename not specified.

Contrail Command に SSH 接続し、以下のコマンドにてインストール状況の確認

```
docker exec contrail_command tail -f /var/log/contrail/deploy.log
```

Error! Filename not specified.

Successfully になればインストール完了

Step3: Login

OpenStack GUI :

<http://192.168.0.6> admin/contrail123

※HA の場合、VIP(192.168.0.98)にアクセス

TungstenFabric GUI :

<http://192.168.0.3:8143> admin/contrail123
※HA の場合、VIP(192.168.0.98)にアクセス

Contrail Command GUI:
<https://192.168.0.2:9091> admin/contrail123

Contrail Insight GUI:
<http://192.168.0.4:9000> admin/contrail123

OpenStack CLI :
Openstack controller に ssh 接続後、以下にて kolla_toolbox Container に Login

```
docker exec -it kolla_toolbox bash
```

以下にて環境ファイルを読み込むことで openstack コマンドが実行可能

```
source /var/lib/kolla/config_files/admin-openrc.sh
```

Step4. Status Check

HA 構成の場合の Contrail Controller Contrail-Status

contrail1	contrail2	contrail3
== Contrail control == control: active nodemgr: active named: active dns: active	== Contrail control == control: active nodemgr: active named: active dns: active	== Contrail control == control: active nodemgr: active named: active dns: active
== Contrail analytics-alarm == nodemgr: active kafka: active alarm-gen: active	== Contrail analytics-alarm == nodemgr: active kafka: active alarm-gen: active	== Contrail analytics-alarm == nodemgr: active kafka: active alarm-gen: active
== Contrail database == nodemgr: active query-engine: active cassandra: active	== Contrail database == nodemgr: active query-engine: active cassandra: active	== Contrail database == nodemgr: active query-engine: active cassandra: active
== Contrail analytics == nodemgr: active api: active collector: active	== Contrail analytics == nodemgr: active api: active collector: active	== Contrail analytics == nodemgr: active api: active collector: active
== Contrail config-database == nodemgr: active zookeeper: active rabbitmq: active cassandra: active	== Contrail config-database == nodemgr: active zookeeper: active rabbitmq: active cassandra: active	== Contrail config-database == nodemgr: active zookeeper: active rabbitmq: active cassandra: active

== Contrail webui == web: active job: active	== Contrail webui == web: active job: active	== Contrail webui == web: active job: active
== Contrail analytics-snmp == snmp-collector: active nodemgr: active topology: active	== Contrail analytics-snmp == snmp-collector: active nodemgr: active topology: active	== Contrail analytics-snmp == snmp-collector: active nodemgr: active topology: active
== Contrail config == svc-monitor: backup nodemgr: active device-manager: backup api: active schema: active	== Contrail config == svc-monitor: backup nodemgr: active device-manager: backup api: active schema: backup	== Contrail config == svc-monitor: active nodemgr: active device-manager: active api: active schema: backup