

Release Notes

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Contrail Cloud 16

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Introduction

Juniper® Contrail® Cloud is a fully managed telco cloud solution for running Network Functions Virtualization Infrastructure (NFVI) with always-on reliability and service assurance for virtualized network functions (VNFs).

These release notes accompany Release 16.3.1 of Juniper Networks Contrail Cloud. They describe new features, limitations and known behavior.

New and Changed Features

IN THIS SECTION

- [Product Components | 2](#)

The features listed in this section are new or changed for Contrail Cloud Release 16.3.1.

Product Components

- Contrail Networking Release 21.4.L2
 - Contrail Networking [R21.4.L2 Release Notes](#).
- Contrail Insights Release 3.3.10 (formerly AppFormix)
 - Contrail Insights Release Notes are available as part of the software download package.
- Red Hat OpenStack 16.2.5 – OpenStack Train (Red Hat CDN sync 30-Aug-2023)
 - [RHOSP 16.2.5 Release Notes](#).
- RHEL 8.4–Linux kernel 4.18.0-305.97.1.el8_4.x86_64 (Red Hat CDN sync 30-Aug-2023)
 - [RHEL 8.4 Release Notes](#).
- Red Hat Ceph Storage 4.3.1 (Red Hat CDN sync 30-Aug-2023)
 - [Ceph Storage 4 Release Notes](#).
- Red Hat Virtualization Release 4.4 (Red Hat CDN sync 30-Aug-2023)
 - [Red Hat Virtualization 4.4 Release Notes](#).
- RHEL 8.6–Linux kernel 4.18.0-372.70.1.el8_6.x86_64 for the RHV hosts (Red Hat CDN sync 30-Aug-2023)
 - [RHEL 8.6 Release Notes](#)
- Kubernetes Release 1.23.7
 - [Kubernetes 1.23 Release Notes](#)
 - [Kubernetes 1.23 Documentation](#)

Known Behavior

IN THIS SECTION

- [Known Behaviors for Contrail Cloud Release 16.3.1](#) | 3

Known Behaviors for Contrail Cloud Release 16.3.1

There is no change in this section. The issues listed for Contrail Cloud Release 16.3.0 still holds valid for Contrail Cloud Release 16.3.1.

- CC-914 - Contrail Cloud Release 16.3.1 does not provide support for IPv6 networks. Support for IPv6 networks is targeted for a future release of Contrail Cloud.
- CC-925 - SELinux enabled by default on k8s hosts. The default mode for SELinux was changed from permissive to enforced on K8s hosts. New variable was introduced `selinux_enabled` which can be used in `site.yml`. The default value is true:

```
k8s:
  selinux_enabled: true
```

- CC-1010 - Contrail Cloud only supports the legacy spine/leaf configuration model from rhosp13. RHOSP 13 style spine/leaf network configurations must be used in Contrail Cloud 16. This applies to a fresh install, and applies to the Contrail Cloud 13 to 16 upgrade. For more information, see: https://access.redhat.com/documentation/en-us/red_hat_openshift_platform/13/html/spine_leaf_networking/index.
- CC-1060/CEM-21860 - Contrail `tf-tripleo-heat-templates` do not pass the BarbicanPassword to the Contrail containers. This results in the Barbican user having the same password as the Keystone admin user. Additional configuration parameters can be added to the `config/site.yml` file as a workaround to this issue:

```
overcloud:
  extra_config:
    ComputeDpdkParameters:
      ContrailSettings:
        BARBICAN_PASSWORD: <barbican password (default equal to keystone admin password)>
    ComputeKernelParameters:
      ContrailSettings:
        BARBICAN_PASSWORD: <barbican password (default equal to keystone admin password)>
```

- CC-1127 - The `scripts/satellite6hosts.py` and `scripts/satellite6cleanup.py` fail when using capsule. Katello API listens on port 443 for the satellite, and is default for the scripts. The Katello API listens

on port 8443 when using capsule. A quick workaround is to add the "8443" port number as part of the satellite name:

```
/var/lib/contrail_cloud/scripts/satellite6hosts.py --user ak_<user>_ContrailCloudNFR --
password "c0ntrail123" --satellite contrail-cloud.juniper.net:8443
```

Run the following command to use the katello ping API to verify the URL:

```
REG_SAT_URL="https://contrail-cloud.juniper.net:8443
curl -L -k -s -D - -o /dev/null $REG_SAT_URL/katello/api/ping | grep HTTP
```

You will receive the following output if successful:

```
HTTP/1.1 200 OK
```

Security Advisories

Juniper publishes quarterly security advisories for Contrail Cloud. You can find all security advisories on the Juniper Support Portal. For more information, see [https://supportportal.juniper.net/s/global-search/%40uri?language=en_US#sort=relevancy&numberOfResults=100&f:ctype=\[Security%20Advisories\]&f:level3=\[Contrail%20Cloud\]](https://supportportal.juniper.net/s/global-search/%40uri?language=en_US#sort=relevancy&numberOfResults=100&f:ctype=[Security%20Advisories]&f:level3=[Contrail%20Cloud]).

Contrail Cloud 16.3.1 is released with a Red Hat content sync of 30-Aug-2023. For Red Hat security advisories and CVE database, see: <https://access.redhat.com/security/security-updates/#/security-advisories>.

You can also use the Red Hat REST API to query the CVE database. Adjust the before date in the API to match the Contrail Cloud content sync date:

NOTE: This will return all Red Hat products. Not all Red Hat products returned by the REST API query are distributed, or used by Contrail Cloud.

```
https://access.redhat.com/labs/securitydataapi/cve.json?  
after=2019-10-01&cvss3_score=7&before=2023-08-30&severity=important
```

```
https://access.redhat.com/labs/securitydataapi/cve.json?  
after=2019-10-01&cvss3_score=7&before=2023-08-30&severity=critical
```

Supported Hardware

For a list of validated solutions and network hardware, please refer to the [Contrail Networking Validated Solutions](#) page.

Contrail Cloud Release 16.3

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Introduction

Juniper® Contrail® Cloud is a fully managed telco cloud solution for running Network Functions Virtualization Infrastructure (NFVI) with always-on reliability and service assurance for virtualized network functions (VNFs).

These release notes accompany Release 16.3 of Juniper Networks Contrail Cloud. They describe new features, limitations and known behavior.

New and Changed Features

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The features listed in this section are new or changed for Contrail Cloud Release 16.3.

Product Components

- Contrail Networking Release 21.4.L2
 - Contrail Networking [R21.4.L2 Release Notes](#).
- Contrail Insights Release 3.3.10 (formerly AppFormix)
 - Contrail Insights Release Notes are available as part of the software download package.
- Red Hat OpenStack 16.2.5 – OpenStack Train (Red Hat CDN sync 10-May-2023)
 - [RHOSP 16.2.5 Release Notes](#).
- RHEL 8.4–Linux kernel 4.18.0-305.88.1.el8_4.x86_64 (Red Hat CDN sync 10-May-2023)

- [RHEL 8.4 Release Notes.](#)
- Red Hat Ceph Storage 4.3.1 (Red Hat CDN sync 10-May-2023)
 - [Ceph Storage 4 Release Notes.](#)
- Red Hat Virtualization Release 4.4 (Red Hat CDN sync 10-May-2023)
 - [Red Hat Virtualization 4.4 Release Notes.](#)
- RHEL 8.6–Linux kernel 4.18.0-372.52.1.el8_6.x86_64 for the RHV hosts (Red Hat CDN sync 10-May-2023)
 - [RHEL 8.6 Release Notes](#)
- Kubernetes Release 1.23.7
 - [Kubernetes 1.23 Release Notes](#)
 - [Kubernetes 1.23 Documentation](#)

Contrail Cloud Tuning

All feature and extra configuration samples can be found in your `/var/lib/contrail_cloud/samples/features` directory on the jump host.

NOTE: ControllerExtraConfig should no longer be passed as a value for `overcloud["extra_config"]`.

- Optional overcloud tuning in your `config/site.yml` configuration file with the `controller_extra_config` parameter. This new parameter is used to provide additional configuration under the ControllerExtraConfig THT section. You can also configure the `extra_config:` to modify any TripleO parameter documented by Red Hat.

For a sample of the overcloud `controller_extra_config` and overcloud `extra_config`, see the `/var/lib/contrail_cloud/samples/features/extra_config/site.yml` sample file on your jump host.

The `controller_extra_config` supports for additional Nova tuning of the overcloud to match specific settings and requirements. See below for a tuning example:

```
overcloud:
  controller_extra_config:
    nova::config::nova_config:
```

```

filter_scheduler/build_failure_weight_multiplier:
  value: 10000.0
extra_config:

```

Secured Registries

Secured registry is used as of Contrail Cloud Release 16.3. You must provide your container image registry credentials in your vault-data.yml file.

Always update your vault-data.yml file with your most recent credentials before performing any deployment, or update activities.

From the jump host, see /var/lib/contrail_cloud/samples/vault-data.yml for more information and vault data example. To access the file from the CLI, use `ansible-vault view /var/lib/contrail_cloud/samples/vault-data.yml` with the default password of `c0ntrail123`.

Cloud-init Network Configuration Syntax

Cloud-init network configuration Syntax replaces the previous os-net-config syntax in the following locations:

- When configuring `control_host_nodes_network_config` in your `control-host-nodes.yml` configuration file. For more information, see /var/lib/contrail_cloud/samples/control-host-nodes.yml.

```

control_host_nodes_network_config:
  version: 1
  config:
    - type: physical
      name: eno1
      subnets:
        - type: dhcp
          mtu: "{{ host.max_mtu }}"
          nm_controlled: true
    - type: physical
      name: eno2
      mtu: "{{ host.max_mtu }}"
      nm_controlled: true
    - type: physical

```

```

    name: ens7f0
    mtu: "{{ host.max_mtu }}"
    nm_controlled: true
  - type: physical
    name: ens7f1
    mtu: "{{ host.max_mtu }}"
    nm_controlled: true
  - type: bond
    name: bond0
    mtu: "{{ host.max_mtu }}"
    nm_controlled: true
    bond_interfaces:
      - ens7f0
      - ens7f1
    params:
      bond-mode: "802.3ad"
      xmit_hash_policy: layer3+4
      lacp_rate: fast
      miimon: "100"

```

- When configuring `k8s_host_nodes_network_config` in your `k8s-host-nodes.yml` configuration file. For more information, see `/var/lib/contrail_cloud/samples/k8s-host-nodes.yml`.

```

k8s_host_nodes_network_config:
  version: 1
  config:
    - type: physical
      name: enp1s0
      subnets:
        - type: static
          address: "{{ host.control_ip_netmask }}"
    - type: vlan
      name: "enp1s0.{{ overcloud.network.internal_api.vlan }}"
      vlan_link: enp1s0
      vlan_id: "{{ overcloud.network.internal_api.vlan }}"
      subnets:
        - type: static
          address: "{{ host.internalapi_ip_netmask }}"
      routes:
        - gateway: "{{ overcloud.network.internal_api.gateway }}"
          network: "{{ overcloud.network.internal_api.supernet | ipaddr('network') }}"
          netmask: "{{ overcloud.network.internal_api.supernet | ipaddr('netmask') }}"

```

```

- type: physical
  name: enp2s0
  subnets:
  - type: static
    address: "{{ host.external_ip_netmask }}"
    gateway: "{{ host.gw }}"
    dns_nameservers:
      - "{{ host.dns_server1 }}"
      - "{{ host.dns_server2 }}"
- type: physical
  name: enp3s0
- type: vlan
  name: "enp3s0.{{ overcloud.network.tenant.vlan }}"
  vlan_link: enp3s0
  vlan_id: "{{ overcloud.network.tenant.vlan }}"
  subnets:
  - type: static
    address: "{{ host.tenant_ip_netmask }}"
    routes:
      - gateway: "{{ overcloud.network.tenant.gateway }}"
        network: "{{ overcloud.network.tenant.supernet | ipaddr('network') }}"
        netmask: "{{ overcloud.network.tenant.supernet | ipaddr('netmask') }}"

```

Contrail Cloud supports both networking configuration version 1 format, and networking configuration version 2 format. For more information on Cloud-init's network configuration syntax, see:

- [Networking Config Version 1](#)
- [Networking Config Version 2](#)

Storage Configuration - Mount Point

Contrail Cloud 16 storage configuration has been changed to include the mount point of the storage drive. You can view this change in your `/var/lib/contrail_cloud/samples/site.yml` configuration file.

```

storage:
  # Define a set of disk groups that can be referenced for VM virtual disk allocations
  # These become virsh storage pools on the control host
  # Each pool has:
  #   mountpoint: "/absolute/path/where/lvm/will/get/mounted"

```

```

# type: Either "dir" or "logical".
#     "dir" does not create any new volumes
#     it is useful if one large hardware raid is used as /
#     "logical" is a LVM volume placed on the list of "disk".
# disk: List of disk devices to use for the pool
hdd_storage:
  mountpoint: "/srv/hdd_storage"
  type: logical
  disk:
    - "/dev/disk/by-alias/spinning-0"
    - "/dev/disk/by-alias/spinning-1"
    - "/dev/disk/by-alias/spinning-2"
    - "/dev/disk/by-alias/spinning-3"
ssd_storage:
  mountpoint: "/srv/ssd_storage"
  type: logical
  disk:
    - "/dev/disk/by-alias/ssd-0"
#srv:
# mountpoint: "/srv"
# type: dir

```

Supported Hardware

For a list of validated solutions and network hardware, please refer to the [Contrail Networking Validated Solutions page](#).

Security Advisories

Juniper publishes quarterly security advisories for Contrail Cloud. You can find all security advisories on the Juniper Support Portal. For more information, see [https://supportportal.juniper.net/s/global-search/?uri?language=en_US#sort=relevancy&numberOfResults=100&f:ctype=\[Security%20Advisories\]&f:level3=\[Contrail%20Cloud\]](https://supportportal.juniper.net/s/global-search/?uri?language=en_US#sort=relevancy&numberOfResults=100&f:ctype=[Security%20Advisories]&f:level3=[Contrail%20Cloud]).

Contrail Cloud 16.3 is released with a Red Hat content sync of 10-May-2023. For Red Hat security advisories and CVE database, see: <https://access.redhat.com/security/security-updates/#/security-advisories>.

You can also use the Red Hat REST API to query the CVE database. Adjust the before date in the API to match the Contrail Cloud content sync date:

NOTE: This will return all Red Hat products. Not all Red Hat products returned by the REST API query are distributed, or used by Contrail Cloud.

```
https://access.redhat.com/labs/securitydataapi/cve.json?
after=2019-10-01&cvss3_score=7&before=2023-05-10&severity=important
```

```
https://access.redhat.com/labs/securitydataapi/cve.json?
after=2019-10-01&cvss3_score=7&before=2023-05-10&severity=critical
```

Known Behavior

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Known Behaviors for Contrail Cloud Release 16.3

- CC-914 - Contrail Cloud Release 16.3 does not provide support for IPv6 networks. Support for IPv6 networks is targeted for a future release of Contrail Cloud.
- CC-925 - SELinux enabled by default on k8s hosts. The default mode for SELinux was changed from permissive to enforced on K8s hosts. New variable was introduced `selinux_enabled` which can be used in `site.yml`. The default value is `true`:

```
k8s:
  selinux_enabled: true
```

- CC-1010 - Contrail Cloud only supports the legacy spine/leaf configuration model from rhosp13. RHOSP 13 style spine/leaf network configurations must be used in Contrail Cloud 16. This applies to a fresh install, and applies to the Contrail Cloud 13 to 16 upgrade. For more information, see: https://access.redhat.com/documentation/en-us/red_hat_openshift_platform/13/html/spine_leaf_networking/index.
- CC-1060/CEM-21860 - Contrail `tf-tripleo-heat-templates` do not pass the `BarbicanPassword` to the Contrail containers. This results in the Barbican user having the same password as the Keystone admin user. Additional configuration parameters can be added to the `config/site.yml` file as a workaround to this issue:

```
overcloud:
  extra_config:
    ComputeDpdkParameters:
      ContrailSettings:
        BARBICAN_PASSWORD: <barbican password (default equal to keystone admin password)>
    ComputeKernelParameters:
      ContrailSettings:
        BARBICAN_PASSWORD: <barbican password (default equal to keystone admin password)>
```

- CC-1127 - The `scripts/satellite6hosts.py` and `scripts/satellite6cleanup.py` fail when using capsule. Katello API listens on port 443 for the satellite, and is default for the scripts. The Katello API listens on port 8443 when using capsule. A quick workaround is to add the "8443" port number as part of the satellite name:

```
/var/lib/contrail_cloud/scripts/satellite6hosts.py --user ak_<user>_ContrailCloudNFR --
password "c0ntrail123" --satellite contrail-cloud.juniper.net:8443
```

Run the following to use the katello ping API to verify the URL:

```
REG_SAT_URL="https://contrail-cloud.juniper.net:8443
curl -L -k -s -D - -o /dev/null $REG_SAT_URL/katello/api/ping | grep HTTP
```

You will receive the following if successful:

```
HTTP/1.1 200 OK
```


Contrail Cloud Release 16.2

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Introduction

Juniper® Contrail® Cloud is a fully managed telco cloud solution for running Network Functions Virtualization Infrastructure (NFVI) with always-on reliability and service assurance for virtualized network functions (VNFs).

These release notes accompany Release 16.2 of Juniper Networks Contrail Cloud. They describe new features, limitations and known behavior.

New and Changed Features

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- [Product Components | 15](#)
- [Contrail Cloud Version 13 to 16 Upgrade | 15](#)

The features listed in this section are new or changed for Contrail Cloud Release 16.2.

Product Components

- Contrail Networking Release 2011.L3
 - Contrail Networking [R2011.L3 Release Notes](#).
- Contrail Insights Release 3.3.3 (formerly AppFormix)
 - Contrail Insights Release Notes are available as part of the software download package.
- Red Hat OpenStack 16.1.6 – OpenStack Train (Red Hat CDN sync 11-Sept-2021)
 - [RHOSP 16.1 Release Notes](#).
- RHEL 8.2–Linux kernel 4.18.0-193.65.2.el8_2.x86_64 (Red Hat CDN sync 11-Sept-2021)
 - [RHEL 8.2 Release Notes](#).
- Red Hat Ceph Storage 4.2.2 (Red Hat CDN sync 11-Sept-2021)
 - [Ceph Storage 4 Release Notes](#).
- Red Hat Virtualization Release 4.4 (Red Hat CDN sync 1-Sept-2020)
 - [Red Hat Virtualization 4.4 Release Notes](#).
- Kubernetes Release 1.20.7
 - [Kubernetes 1.20.7 Release Notes](#).

Contrail Cloud Version 13 to 16 Upgrade

A supported upgrade path from the latest version of Contrail Cloud 13 to Contrail Cloud 16.2 is available. The upgrade requires the latest Contrail Cloud 13 version to be installed to start the upgrade process.

Documentation is available for the Contrail Cloud Version 13 to 16.2 upgrade.

Supported Hardware

For a list of validated network hardware, please refer to the [Networking NIC Support Table](#).

Security Advisories

Contrail Cloud 16.2 is released with a Red Hat content sync of 11-Sept-2021. For Red Hat security advisories and CVE database, see: <https://access.redhat.com/security/security-updates/#/security-advisories>.

You can also use the Red Hat REST API to query the CVE database. Adjust the before date in the API to match the Contrail Cloud content sync date:

NOTE: This will return all Red Hat products. Not all Red Hat products returned by the REST API query are distributed, or used by Contrail Cloud.

```
https://access.redhat.com/labs/securitydataapi/cve.json?
after=2019-10-01&cvss3_score=7&before=2021-09-11&severity=important
```

```
https://access.redhat.com/labs/securitydataapi/cve.json?
after=2019-10-01&cvss3_score=7&before=2021-09-11&severity=critical
```

Known Behavior

IN THIS SECTION

- [Known Behaviors for Contrail Cloud Release 16.2 | 16](#)

This section contains the known behavior and limitations for the specified Contrail Cloud Release.

Known Behaviors for Contrail Cloud Release 16.2

- CC-786 - IDM/IPA support is not implemented in contrail on Kubernetes. IDM support is targeted for a future release Contrail Cloud.

- CC-861 - Issue where a custom disk image can't boot UEFI. Currently, only legacy MBR is working.
- CC-914 - Contrail Cloud Release 16.2 does not provide support for IPv6 networks. Support for IPv6 networks is targeted for a future release of Contrail Cloud.
- CC-925 - SELinux enabled by default on k8s hosts. The default mode for SELinux was changed from permissive to enforced on K8s hosts. New variable was introduced `selinux_enabled` which can be used in `site.yml`. The default value is true:

```
k8s:
  selinux_enabled: true
```

- CC-1010 - Contrail Cloud only supports the legacy spine/leaf configuration model from rhosp13. RHOSP 13 style spine/leaf network configurations must be used in Contrail Cloud 16. This applies to a fresh install, and applies to the Contrail Cloud 13 to 16 upgrade. For more information, see: https://access.redhat.com/documentation/en-us/red_hat_openstack_platform/13/html/spine_leaf_networking/index.
- CC-1048 - There is a known upgrade issue where Ceph status returns a warning due to insecure "global_id claim". This is a harmless warning and is caused by the provided backward compatibility in the code. For more information, see: <https://access.redhat.com/articles/6136242>.
- CC-1054/CEM-24236 - There is an issue in Tungsten Fabric Operator where it is not possible to use vDNS functionality. Enabling vDNS leads to a problem with name resolution inside the VMs connected to the network where vDNS is configured.
- CC-1060/CEM-21860 - Contrail `tf-tripleo-heat-templates` do not pass the BarbicanPassword to the Contrail containers. This results in the Barbican user having the same password as the Keystone admin user. Additional configuration parameters can be added to the `config/site.yml` file as a workaround to this issue:

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  extra_config:
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    ComputeKernelParameters:
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        BARBICAN_PASSWORD: <barbican password (default equal to keystone admin password)>
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- CC-1127 - The `scripts/satellite6hosts.py` and `scripts/satellite6cleanup.py` fail when using capsule. Katello API listens on port 443 for the satellite, and is default for the scripts. The Katello API listens

on port 8443 when using capsule. A quick workaround is to add the "8443" port number as part of the satellite name:

```
/var/lib/contrail_cloud/scripts/satellite6hosts.py --user ak_<user>_ContrailCloudNFR --
password "c0ntrail123" --satellite <capsule-name>.juniper.net:8443
```

Run the following to use the katello ping API to verify the URL:

```
REG_SAT_URL="https://<capsule-name>.juniper.net:8443
curl -L -k -s -D - -o /dev/null $REG_SAT_URL/katello/api/ping | grep HTTP
```

You will receive the following if successful:

```
HTTP/1.1 200 OK
```

- There is a known issue where Contrail Insights does not function when using IPv6 in Contrail Cloud version 16.2.

Contrail Cloud Release 16.1

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Introduction

Juniper® Contrail® Cloud is a fully managed telco cloud solution for running Network Functions Virtualization Infrastructure (NFVI) with always-on reliability and service assurance for virtualized network functions (VNFs).

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New and Changed Features

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- [Separation of the Contrail control plane from Triple-O | 20](#)
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The features listed in this section are new or changed as of Contrail Cloud Release 16.1.

Product Components

- Contrail Networking Release 2011
 - Contrail Networking [2011 Release Notes](#).
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 - [Ceph Storage 4 Release Notes](#).
- Red Hat Virtualization Release 4.4 (Red Hat CDN sync 1-Nov-2020)
 - [Red Hat Virtualization 4.4 Release Notes](#).
- Kubernetes Release 1.19.7
 - [Kubernetes 1.19 Release Notes](#).

Red Hat Virtualization

Contrail Cloud 16.1 introduces RHV for the control plane virtualization. RHV is the fully supported Red Hat solution used for a compliant overcloud high availability (HA) and takes advantage of RHV capabilities for failover. RHV Manager is installed on the jump host as a virtual machine (VM). The RHV orchestration and management engine allows for better control of the hypervisor and virtual machines in your environment.

For more information, see:

- https://access.redhat.com/documentation/en-us/red_hat_virtualization/4.4/html/release_notes/index
- https://access.redhat.com/documentation/en-us/red_hat_virtualization/4.4/html/product_guide/index

Separation of the Contrail control plane from Triple-O

Contrail Cloud 16 deploys a kubernetes-based Contrail control plane, and the Kubernetes cluster is part of a standard Contrail Cloud 16 deployment. Deploying the Contrail control plane independently from Triple-O removes the Contrail control plane from the Triple-O lifecycle. This change adds flexibility to how Contrail Cloud is deployed and updated. Servicing RHOSP no longer needs to impact Contrail and updates to control plane no longer needs to adhere to the Triple-O lifecycle. Changes to a deployment will not have to be driven by the RHOSP Director (RHOSPd) and involve a full deployment refresh. This will result in less downtime and interruption to your environment. Contrail vRouter is still part of the Triple-O lifecycle.

Contrail Insights

Contrail Insights now supports deploying the platform as Podman containers on Red Hat Enterprise Linux 8/CentOS 8. Some other notable highlights include:

- Support for charting and alarms for NETCONF CLI commands. Several commands are available out of the box. Custom commands with their own parsers can be added by the user as well.
- Optimized discovery from Contrail for a higher scale of resources using VPG objects instead of VMIs to discover physical connections between the BMS and network devices.
- Support for domain name for network devices discovered from Contrail.
- Python 3 is now used throughout Contrail Insights to better accommodate vendor monitoring architecture.

Although the product name changed from “AppFormix” to “Contrail Insights,” the internal command paths and file structure of Contrail Cloud continue to show AppFormix and will reflect the new name in a future release of Contrail Cloud.

Whole Disk Development

This is available as a feature configuration in the Contrail Cloud YAML deployment files. Whole disk support and configuration in Contrail Cloud gives you control over the partitioning of the whole disk. This grants the user the ability to configure and control the size of each file system partition.

For more information, see:

- https://access.redhat.com/documentation/en-us/red_hat_openshift_platform/16.0/html/director_installation_and_usage/creating-whole-disk-images

Contrail sosreport Plugin

The Contrail sosreport plugin is used to gather Contrail data while running the sosreport, and can gather such reports from compute nodes to collect vRouter information. Extended support and data collection points will be added in a future release of Contrail Cloud.

Red Hat Subscriptions

Contrail Cloud 16 uses Red Hat Simplified Content for subscriptions. This will reduce the number of keys needed for a deployment.

For more information, see:

- <https://access.redhat.com/articles/simple-content-access>

Supported Hardware

For a list of validated network hardware, please refer to the [Networking NIC Support Table](#).

Security Advisories

Contrail Cloud 16.1 is released with a Red Hat content sync of 1 Nov 2020. For Red Hat security advisories and CVE database, see: <https://access.redhat.com/security/security-updates/#/security-advisories>.

You can also use the Red Hat REST API to query the CVE database. Adjust the before date in the API to match the Contrail Cloud content sync date.

NOTE: This will return all Red Hat products. Not all Red Hat products returned by the REST API query are distributed, or used by Contrail Cloud.

```
https://access.redhat.com/labs/securitydataapi/cve.json?  
after=2019-10-01&cvss3_score=7&before=2020-11-01&severity=important
```

```
https://access.redhat.com/labs/securitydataapi/cve.json?  
after=2019-10-01&cvss3_score=7&before=2020-11-01&severity=critical
```

Known Behavior

IN THIS SECTION

- [Known Behaviors for Contrail Cloud Release 16.1](#) | 23

This section contains the known behavior and limitations for the specified Contrail Cloud Release.

Known Behaviors for Contrail Cloud Release 16.1

- Contrail Cloud 16.1 requires a fresh install. There is no upgrade support from Contrail Cloud 13 to 16.1.
- [CC-35](#) - Whole disk image only supports legacy mode in BIOS for whole disk with partitions. UEFI is not supported.
- [CC-741](#) - The os-net-config with contrail_vrouter_dpdk fails with nicN references. The deployment of DPDK roles fails when you use "nic_N" style naming.
- [CC-786](#) - IDM is not supported and is targeted for a future release Contrail Cloud.
- [CC-914](#) - Contrail Cloud Release 16.1 does not provide support for IPv6 networks. Support for IPv6 networks is targeted for a future release of Contrail Cloud.
- [CEM-21104](#) - There is a race condition with the Contrail vrouter when the control plane is deployed in parallel to the RHOSP16 overcloud. This creates a condition where it is possible that compute nodes are ready before the contrail control plane services. The compute nodes may hang if the control plane is not ready first, and the overall overcloud deployment may fail.

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