Oracle Cloud Native Environment
Release Notes for Release 1.6

ORACLE®

Oracle Cloud Native Environment Release Notes for Release 1.6,

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Contents

Preface

This document contains information about Oracle Cloud Native Environment. This document includes information on component versions, new features, documentation changes and known issues for Oracle Cloud Native Environment.

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at https://www.oracle.com/corporate/accessibility/.

For information about the accessibility of the Oracle Help Center, see the Oracle Accessibility Conformance Report at https://www.oracle.com/corporate/accessibility/templates/t2-11535.html.

Access to Oracle Support for Accessibility

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit https://www.oracle.com/corporate/accessibility/learning-support.html#support-tab.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1
Component Versions

This section lists the version numbers of the major components included with Oracle Cloud Native Environment.

To see the version of the packages, use the `rpm -q` command, for example:

```
rpm -q olcne-api-server
olcne-api-server-1.6.x-x.el8.x86_64
```

Table 1-1   Oracle Cloud Native Environment Component Versions

Component	Version
Oracle Cloud Native Environment Platform API Server	1.6
Oracle Cloud Native Environment Platform Agent	1.6
Oracle Cloud Native Environment Platform Command-Line Interface	1.6
Kubernetes	1.25.15
Calico	3.25.0
Multus	3.9.3
Oracle Cloud Infrastructure Cloud Controller Manager	1.25.0
MetalLB	0.12.1
Operator Lifecycle Manager	0.17.0
Istio	1.16.7
Prometheus	2.31.1
Grafana	7.5.15
Helm	3.11.1
RunC	1.0
CRI-O	1.25.2
Kata Containers	1.12.1
NGINX	1.17.7

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CVE and Bug Fix Updates

Notices for Common Vulnerabilities and Exposures (CVEs) and bug fix updates for Oracle Cloud Native Environment are available on the Unbreakable Linux Network at:

https://linux.oracle.com/errata

You can subscribe to the `el-errata@oss.oracle.com` email list to receive these notices via email at:

https://oss.oracle.com/mailman/listinfo/el-errata

All Oracle Cloud Native Environment CVE and bug fix update notices are listed on ULN and via the email list mentioned, and are not included in this document.

You may also find it helpful to check the list of new and updated packages posted on the Oracle Linux yum server available at:

https://yum.oracle.com/whatsnew.html

Support for product enhancements, Common Vulnerabilities and Exposures (CVEs) and bug fix updates are available for Oracle Cloud Native Environment as described in Oracle Linux: Product Life Cycle Information.

3

New Features and Notable Changes

This chapter lists the new features and notable changes in each Oracle Cloud Native Environment release.

Release 1.6.5

This section lists the notable changes in Release 1.6.5 of Oracle Cloud Native Environment.

Kubernetes Updated: Kubernetes is updated to Release 1.25.15.

Release 1.6.3

This section lists the notable changes in Release 1.6.3 of Oracle Cloud Native Environment.

Istio Updated: Istio is updated to Release 1.16.7.

Release 1.6.2

This section lists the notable changes in Release 1.6.2 of Oracle Cloud Native Environment.

Kubernetes Updated: Kubernetes is updated to Release 1.25.11.

Release 1.6.1

This section lists the notable changes in Release 1.6.1 of Oracle Cloud Native Environment.

Kubernetes Updated: Kubernetes is updated to Release 1.25.7-2.

Istio Updated: Istio is updated to Release 1.16.4.

Platform CLI

The Platform CLI has the following new options to replace deprecated terms:

`--oci-private-key-file`
The `--oci-private-key-file` option, used when creating the `oci-ccm` module, replaces the deprecated `--oci-private-key` option for specifying the location of the private key for the Oracle Cloud Infrastructure API signing key. You can use the `oci-private-key-file` option both in `YAML` environment configuration files as well as with the `olcnectl module create` command. The private key must be located on the **operator** node

Release 1.6.0

This section lists the notable changes in Release 1.6.0 of Oracle Cloud Native Environment.

Updated Components

The following components have been updated:

- **Kubernetes**: Kubernetes is updated to Release 1.25.7.
- **CRI-O**: CRI-O is updated to Release 1.25.2.
- **Oracle Cloud Infrastructure Cloud Controller Manager**: Oracle Cloud Infrastructure Cloud Controller Manager is updated to Release 1.25.0.
- **Istio**: Istio is updated to Release 1.16.2.
- **Helm**: Helm is updated to Release 3.11.1.
- **Calico**: Calico Release 3.25.0 is added.
- **Multus**: Multus Release 3.9.3 is added.

Calico and Multus Kubernetes CNI

In additional to Flannel networking for the Kubernetes CNI, you can now use Calico and Multus. The `olcnectl module create` and `olcnectl module update` Platform CLI commands are updated with new command options to install and update Calico and Multus. For information on how to set up new Kubernetes clusters using these networking technologies, see Container Orchestration.

> **Important:**
>
> Calico can only be used on new deployments. You cannot upgrade from Release 1.5 to 1.6 and change from Flannel to Calico. You can, however, install the Multus module into an upgraded cluster that uses Flannel.

Helm Module

The installation has been improved to remove the requirement to install the Helm module when installing optional modules. Helm is now automatically installed with the Kubernetes module and associated with it to perform optional module installations. You no longer need to create and install a Helm module in order to install other modules.

The firewalld Service

You can now install Oracle Cloud Native Environment with the **firewalld** service enabled, or you can disable it and use your own firewall solution.

Listing Installable Module Versions

The Platform CLI is updated to include a new `olcnectl module version` command. This command lists the latest module versions available in the Oracle Container Registry that can be installed for the Oracle Cloud Native Environment currently on your system.

You can use the command before running `olcnectl module update` to see which versions of modules and their subcomponents will be installed or updated. See Platform Command-Line Interface for more details.

Quick Installation

The `olcnectl provision` command can now also be used for scaling an existing Kubernetes cluster. The command automates many of the tasks required for scaling up, for example the setting up of new certificates and the installation of Oracle Cloud Native Environment software on each new node.

See Quick Installation for more details.

Platform CLI

The Platform CLI has the following new options to replace deprecated terms:

`--control-plane-nodes`
The option `--control-plane-nodes` replaces the deprecated `--master-nodes` option for specifying the hostnames or IP addresses of the Kubernetes control plane nodes. Use `--control-plane-nodes` in YAML environment configuration files, as well as in `olcnectl` commands that specify the control plane nodes, for example, `olcnectl module create`, `olcnectl module update`, and `olcnectl provision`.

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Deprecation Notices

This chapter lists the deprecation notices for Oracle Cloud Native Environment.

Release 1.6.1

Platform CLI Commands

The `--oci-private-key` option, used when creating the `oci-ccm` module with the `olcnectl module create` command, and in `YAML` environment configuration files, is deprecated in Release 1.6.1. This option was used for specifying the location of the private key for the Oracle Cloud Infrastructure API signing key.

From Release 1.6.1 onwards, you should use the `--oci-private-key-file` option instead.

Release 1.6

This section lists the deprecations notice for Release 1.6.

Gluster Container Storage Interface Module

The Gluster Container Storage Interface module, used to install Gluster and set up Glusterfs, is deprecated. The Gluster Container Storage Interface module may be removed in a future release.

Helm Module

The Helm module is deprecated in Release 1.6. You do not need to create and install a Helm module in order to install optional modules. Helm is automatically installed with the Kubernetes module and associated with it to perform optional module installations. Any Platform CLI syntax that requires creating, specifying or updating the Helm module is no longer required. It is backwardly compatible, so existing scripted installations you have are honored.

Platform CLI Commands

The `--master-nodes` option, used to specify hostnames or IP addresses of the Kubernetes control plane nodes, is deprecated in Release 1.6. The option was used in YAML environment configuration files, as well as in `olcnectl` commands that specify the control plane nodes, for example, `olcnectl module create`, `olcnectl module update`, and `olcnectl provision`.

From Release 1.6 onwards, you should use option `--control-plane-nodes` to specify control plane nodes.

Release 1.5

This section lists the deprecations notice for Release 1.5.

Oracle Cloud Infrastructure Container Storage Interface Module

In Release 1.5, the name of this module is changed to the *Oracle Cloud Infrastructure Cloud Controller Manager* module. In Release 1.4, when creating the Oracle Cloud Infrastructure Container Storage Interface module you used the module type of `oci-csi`. This module type is now deprecated. From Release 1.5 onwards, you should use the renamed and updated module type of `oci-ccm`.

Platform CLI Commands

The `--node-labels` and `--node-ocids` options in the `olcnectl module create` command are deprecated in Release 1.5. These options were used to set Oracle Cloud Infrastructure information related to Kubernetes nodes when creating the `kubernetes` module. This information was then used by the `oci-csi` module to set up storage for Kubernetes applications in Oracle Cloud Infrastructure. These options are no longer required.

Release 1.4

This section lists the deprecations notice for Release 1.4.

Unbreakable Enterprise Kernel Release 5

Oracle Linux 7 running Unbreakable Enterprise Kernel Release 5 (UEK R5) is removed as a kernel in Oracle Cloud Native Environment Release 1.4. Oracle Cloud Native Environment Release 1.3 is the last release this kernel can be used.

Release 1.2

This section lists the deprecations notice for Release 1.2.

Platform CLI Commands

The `apiserver-advertise-address` option in the `olcnectl module create` command is deprecated in Release 1.2.0. This option set the IP address on which to advertise the Kubernetes API server to members of the Kubernetes cluster in a non-HA cluster, with a single control plane node. The `--master-nodes` option specifies the IP address and this deprecated option is no longer used.

5
Known Issues

This chapter contains information about known issues and limitations in this release.

Upgrading Kubernetes 1.12 to Oracle Cloud Native Environment

You cannot upgrade from Kubernetes 1.12 or earlier and add the cluster to Oracle Cloud Native Environment. You must perform a new deployment of Kubernetes using the Platform CLI.

Disabled virt module on Oracle Linux 8

After deploying the Kubernetes module on Oracle Linux 8, the `virt` module is disabled in the operating system. It is recommended that you do not enable this module again unless requested to do so in this documentation or by Oracle Support.

Errors using overlay networking

A Kubernetes cluster that uses overlay networking, may result in an issue with the VxLAN configuration for the cluster. Nodes that are affected by the issue display errors similar to the following in the `dmesg` output:

```
[  610.495450] bnxt_en 0000:00:03.0 ens3: hwrm req_type 0xa1 seq id 0x67
error 0xf
[  610.498246] bnxt_en 0000:00:03.0 ens3: hwrm_tunnel_dst_port_alloc failed.
rc:15
```

This issue is commonly caused when the `tx offload` feature is enabled in the `bnxt_en` driver module. You can resolve this issue by disabling the `tx offload` feature using the `ethtool` command. For example:

```
sudo ethtool --offload $(ip -o -4 route show to default | awk '{print $5}') tx off
```

Listing environments

The Platform CLI does not yet have a method to display a list of the environments created.

Validating a module reports network ports are not open

If you open network ports on nodes using the range option, the `olcnectl module validate` command cannot validate the ports are open. This is due to an issue in the `firewall-cmd` command. For example, if you use a command like the following which opens ports using a port range:

```
sudo firewall-cmd --add-port=2379-2380/tcp
sudo firewall-cmd --add-port=2379-2380/tcp --permanent
```

The `olcnectl module validate` command reports that ports 2379 and 2380 are not open.

Workaround: Open network ports individually, without specifying a port range. For example:

```
sudo firewall-cmd --add-port=2379/tcp
sudo firewall-cmd --add-port=2379/tcp --permanent
sudo firewall-cmd --add-port=2380/tcp
sudo firewall-cmd --add-port=2380/tcp --permanent
```