

# Oracle Cloud Native Environment

## Release Notes for Release 1.5



F53961-16  
July 2023



Oracle Cloud Native Environment Release Notes for Release 1.5,  
F53961-16  
Copyright © 2022, 2023, Oracle and/or its affiliates.

# Contents

## Preface

---

Conventions	v
Documentation Accessibility	v
Access to Oracle Support for Accessibility	vi
Diversity and Inclusion	vi

## 1 Component Versions

---

## 2 CVE and Bug Fix Updates

---

## 3 New Features and Notable Changes

---

Release 1.5.13	3-1
Release 1.5.12	3-1
Release 1.5.10	3-1
Release 1.5.9	3-1
Release 1.5.8	3-1
Release 1.5.7	3-2
Release 1.5.6	3-4
Release 1.5.5	3-4
September 2022 Improvements	3-4
July 2022 Improvements	3-4
Release 1.5.4	3-4
Release 1.5.0	3-5

## 4 Deprecation Notices

---

Oracle Cloud Infrastructure Container Storage Interface Module	4-1
Unbreakable Enterprise Kernel Release 5	4-1
Deprecated Platform CLI Commands	4-1

## 5 Documentation Changes

---

Release 1.5.8	5-1
Release 1.5.5	5-1
Release 1.5	5-1

## 6 Known Issues

---

Upgrading Kubernetes 1.12 to Oracle Cloud Native Environment	6-1
Disabled virt module on Oracle Linux 8	6-1
Errors using overlay networking	6-1
Listing environments	6-1
Validating a module reports network ports are not open	6-2

# Preface

## ! Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

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.

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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

### ! Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

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-1.5.x-x.el8.x86_64
```

**Table 1-1 Oracle Cloud Native Environment Component Versions**

Component	Version
Oracle Cloud Native Environment Platform API Server	1.5
Oracle Cloud Native Environment Platform Agent	1.5
Oracle Cloud Native Environment Platform Command-Line Interface	1.5
Kubernetes	1.24.15
Oracle Cloud Infrastructure Cloud Controller Manager	1.24.0
MetalLB	0.12.1
Operator Lifecycle Manager	0.17.0
Istio	1.15.7
Prometheus	2.31.1
Grafana	7.5.15
Helm	3.9.4
RunC	1.0
CRI-O	1.24.2
Kata Containers	1.12.1
NGINX	1.17.7

# 2

## CVE and Bug Fix Updates

### Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

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

### ! Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

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

### Release 1.5.13

This section lists the notable changes in Release 1.5.13 of Oracle Cloud Native Environment.

**Kubernetes Updated:** Kubernetes is updated to Release 1.24.15.

### Release 1.5.12

This section lists the notable changes in Release 1.5.12 of Oracle Cloud Native Environment.

**Kubernetes Updated:** Kubernetes is updated to Release 1.24.8-2.

**Istio Updated:** Istio is updated to Release 1.15.7.

### Release 1.5.10

This section lists the notable changes in Release 1.5.10 of Oracle Cloud Native Environment.

**Istio Updated:** Istio is updated to Release 1.15.3.

### Release 1.5.9

This section lists the notable changes in Release 1.5.9 of Oracle Cloud Native Environment.

**Quick Installation:** A fix was applied to `olcnectl` to resolve an issue that caused argument mishandling for External IP restrictions during provisioning.

### Release 1.5.8

This section lists the notable changes in Release 1.5.8 of Oracle Cloud Native Environment.

**Kubernetes Updated:** Kubernetes is updated to Release 1.24.8.

**Quick Installation:** The `olcnectl provision` command has been improved to resolve some issues using a configuration file to perform a quick installation.

A new [Quick Installation](#) document is also available, which provides information on using the `olcnectl provision` command to perform a quick installation.

## Release 1.5.7

This section lists the notable changes in Release 1.5.7 of Oracle Cloud Native Environment.

### Updated Components

The following components have been updated:

**Kubernetes:** Kubernetes is updated to Release 1.24.5. For a list of the Kubernetes API Server changes since the last update in Oracle Cloud Native Environment, see the upstream [Kubernetes Release Notes](#). This shows the changes in Release 1.24.0.

**CRI-O:** CRI-O is updated to Release 1.24.2.

**Istio:** Istio is updated to Release 1.14.3.

**Oracle Cloud Infrastructure Cloud Controller Manager:** Oracle Cloud Infrastructure Cloud Controller Manager is updated to Release 1.24.0.

**Helm:** Helm is updated to Release 3.9.4.

### Unbreakable Enterprise Kernel Release 7

The host operating system requirements now includes the option to run Oracle Linux 8 with the Unbreakable Enterprise Kernel Release 7 (UEK R7).

### Custom Istio Profiles

The Istio module has been improved to allow for multiple Istio modules to be installed using custom profiles, while retaining a single Istio control plane.

The Platform CLI has been improved to add new options to the `olcnectl module create` command for the `istio` module to include the following new options:

**`--istio-enable-grafana {true|false}`**

Sets whether to deploy the Grafana module to visualize the metrics stored in Prometheus for Istio. The default is `true`.

**`--istio-enable-prometheus {true|false}`**

Sets whether to deploy the Prometheus module to store the metrics for Istio. The default is `true`.

**`--istio-parent name`**

The name of the `istio` module to use with a custom profile. When used with the `--istio-profile` option, allows multiple instances of the `istio` module to attach Istio platform components to a single Istio control plane. When this option is set, the default Istio profile is replaced with the a mostly empty profile. The only contents of

the profile are the container image hub location, and tags that correspond to the currently installed version of the `istio` module.

**--istio-profile *path***

The path to the file that contains the `spec` section of an `IstioOperator` resource from the `install.istio.io/v1alpha1` Kubernetes API. The values in this resource are laid over top of, and override, the default profile for Istio.

For information on the `IstioOperator` resource file, see the upstream [Istio documentation](#).

For information on using custom Istio profiles, see [Service Mesh](#).

## Quick Installation

The Platform CLI has been improved with new commands that allow for faster installation and Oracle Cloud Native Environment platform set up. To use these commands, you must first install the Platform CLI package, `olcnectl`. The new `olcnectl` commands are:

**`olcnectl certificates copy`**

Copy generated CA Certificates to the Kubernetes nodes.

**`olcnectl certificates distribute`**

Distribute and install generated CA Certificates to the Kubernetes nodes.

**`olcnectl certificates generate`**

Generates CA Certificates.

**`olcnectl node install-agent`**

Installs the Platform Agent software packages on Kubernetes nodes.

**`olcnectl node install-api-server`**

Installs the Platform API Server software packages on Kubernetes nodes.

**`olcnectl node install-certificates`**

Installs the CA Certificates and key for the Platform API Server and Platform Agent to the nodes, with the appropriate file ownership.

**`olcnectl node setup-kubernetes`**

Sets up nodes to prepare for an installation of the Kubernetes module.

**`olcnectl node setup-package-repositories`**

Sets up the software package repositories on nodes.

**`olcnectl node setup-platform`**

Installs the Oracle Cloud Native Environment Platform API Server on the operator node and the Platform Agent on Kubernetes nodes, and starts the services.

**`olcnectl node start-platform`**

Configures the network ports on nodes. Starts the Platform API Server service on the operator node and the Platform Agent service on Kubernetes nodes.

**`olcnectl provision`**

Sets up the nodes, creates and distributes certificates, and installs the Oracle Cloud Native Environment platform (the Platform API Server and the Platform Agent), including installing the Kubernetes module.

For information on using the `olcnectl provision` command to perform a quick installation, see [Quick Installation](#).

**! Important:**

The Oracle Cloud Native Environment documentation is not yet updated with the full information on how to use this new feature. The documentation will be made available as soon as possible.

## Release 1.5.6

This section lists the notable changes in Release 1.5.6 of Oracle Cloud Native Environment.

The following components have been updated:

**Kubernetes Updated:** Kubernetes is updated to Release 1.23.11.

## Release 1.5.5

This section lists the notable changes in Release 1.5.5 of Oracle Cloud Native Environment.

The following components have been updated:

**Istio Updated:** Istio is updated to Release 1.13.7.

## September 2022 Improvements

The following improvements have been made in September 2022:

**Red Hat Enterprise Linux 8:** The host operating system requirements now include the option to run Red Hat Enterprise Linux 8 with the Red Hat Kernel.

## July 2022 Improvements

The following improvements have been made in July 2022:

**Red Hat Compatible Kernel:** The host operating system requirements now include the option to run Oracle Linux 8 with the Red Hat Compatible Kernel (RHCK).

**Updating/Upgrading the Platform Agent:** The documentation is improved to include an easier process to update or upgrade the Platform agent on nodes. For more information, see [Documentation Changes](#).

## Release 1.5.4

This section lists the notable changes in Release 1.5.4 of Oracle Cloud Native Environment.

The following components have been updated:

**Kubernetes Updated:** Kubernetes is updated to Release 1.23.7.

**CRI-O Updated:** CRI-O is updated to Release 1.23.3.

**Istio Updated:** Istio is updated to Release 1.13.5.

## Release 1.5.0

This section lists the notable changes in Release 1.5.0 of Oracle Cloud Native Environment.

**Oracle Cloud Infrastructure Cloud Controller Manager Module:** This module (previously named the *Oracle Cloud Infrastructure Container Storage Interface* module) is enhanced to provision network load balancers for Kubernetes applications in Oracle Cloud Infrastructure (in addition to providing storage). This allows you to provide IP addresses to Kubernetes applications to allow external access to those applications. The Oracle Cloud Infrastructure Cloud Controller Manager module provides the option to use a Kubernetes LoadBalancer service in Oracle Cloud Infrastructure.

For information on setting up the Oracle Cloud Infrastructure Cloud Controller Manager module for application load balancers, see [Application Load Balancers](#).

For information on setting up the Oracle Cloud Infrastructure Cloud Controller Manager module for application storage, see [Storage](#).

**MetalLB Module:** A new module is added to install and use MetalLB as a network load balancer for Kubernetes applications. This allows you to use MetalLB to provide IP addresses to Kubernetes applications to allow external access to those applications. The MetalLB module provides the option to use a Kubernetes LoadBalancer service in a bare metal deployment.

For information on the MetalLB module, see [Application Load Balancers](#).

**Compact Kubernetes Cluster:** A new option to taint or untaint control plane nodes is added. This allows non-system Kubernetes workloads to be scheduled and run on control plane nodes and thereby reduce the number of nodes needed for a cluster.

A new `--compact` option is added to the `olcnectl module create` command to allow you to set this when you create a Kubernetes module. A new `--compact` option is also added to the `olcnectl module update` command to allow you to modify this setting for an existing Kubernetes module.

For production environments, you must not untaint control plane nodes.

# 4

## Deprecation Notices

### Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

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

## 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`.

## 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.

## Deprecated Platform CLI Commands

### Release 1.5

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.

### Note:

The `oci-csi` module is also deprecated in Release 1.5. For more information on the deprecation of the `oci-csi` module, see [Oracle Cloud Infrastructure Container Storage Interface Module](#).

### Release 1.2

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

## Documentation Changes

### ! Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

This chapter lists notable changes to the Oracle Cloud Native Environment documentation.

### Release 1.5.8

This section lists the notable changes in the documentation for Release 1.5.8 of Oracle Cloud Native Environment.

**Quick Installation:** A new [Quick Installation](#) book is added to provide information on using the `olcnectl provision` command to perform a quick installation. A quick installation using the `olcnectl provision` command sets up the nodes, creates and distributes CA certificates, and installs the Oracle Cloud Native Environment platform (the Platform API Server and the Platform Agent), including installing the Kubernetes module.

### Release 1.5.5

This section lists the notable changes in the documentation for Release 1.5.5 of Oracle Cloud Native Environment.

**Release Notes:** The historical information related to Releases 1.3 and 1.4 is removed from the Release Notes. This information is available in the Release Notes for those releases.

### Release 1.5

This section lists the notable changes in the documentation for Release 1.5 of Oracle Cloud Native Environment.

**Application Load Balancers:** A new [Application Load Balancers](#) book is added to provide information on using the Oracle Cloud Infrastructure Cloud Controller Manager module and the MetalLB module to configure Kubernetes application load balancers in Oracle Cloud Native Environment.

**Updating/Upgrading the Platform Agent:** The `olcnectl environment update` command is added to the documentation to update or upgrade the Platform Agent on nodes in an environment. The `olcnectl environment update` command simplifies the update or upgrade process by updating the Platform Agent on all nodes without having to log into them. This



command has been available in all releases of Oracle Cloud Native Environment since Release 1.1, but was not previously included in the documentation. This addition was made in July 2022. For more information, see [Updates and Upgrades](#) and [Platform Command-Line Interface](#).

# 6

## Known Issues

### ❗ Important:

The software described in this documentation is either in Extended Support or Sustaining Support. See [Oracle Open Source Support Policies](#) for more information.

We recommend that you upgrade the software described by this documentation as soon as possible.

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: hwrng req_type 0xa1 seq id 0x67
error 0xf
[ 610.498246] bnxt_en 0000:00:03.0 ens3: hwrng_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
```