Oracle® Communications

Cloud Native Core Console Network Impact Report

Release 22.3.2

F61875-05

January 2023

Oracle Communications Cloud Native Core Console Network Impact Report, Release 22.3.2

F61875-05

Copyright © 2022, 2023, Oracle and/or its affiliates.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software, software documentation, data (as defined in the Federal Acquisition Regulation), or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software," "commercial computer software documentation," or "limited rights data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle®, Java, and MySQL are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

1 Introduction

Purpose and Scope 1-1
CNC Console Compatibility Matrix 1-1
Common Services Load Lineup 1-1
Software Requirements 1-2
Orchestration 1-2
CNC Console Resource Requirement 1-3

2 CNC Console Features

3 Supported Upgrade and Rollback Paths

4 Configuration

Helm 4-1
REST API 4-2

5 Observability

Metrics 5-1
KPI 5-2
Alerts 5-2

My Oracle Support

My Oracle Support (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support can assist you with My Oracle Support registration.

Call the Customer Access Support main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

- For Technical issues such as creating a new Service Request (SR), select **1**.
- For Non-technical issues such as registration or assistance with My Oracle Support, select **2**.
- For Hardware, Networking and Solaris Operating System Support, select **3**.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

My Oracle Support is available 24 hours a day, 7 days a week, 365 days a year.

Acronyms

The following table provides information about the acronyms and the terminology used in the document:

Table Acronyms

Acronym	Definition
AD	Active Directory
ASM	Aspen Service Mesh
BSF	Binding Support Function
CNCC	Cloud Native Core Console
CNE	Cloud Native Environment
OCCNE	Oracle Communications Cloud Native Environment
CS	Common Service
CRUD Operations	CREATE, READ, UPDATE, DELETE
ECDSA	Elliptic Curve Digital Signature Algorithm
EIR	Equipment Identity Register
HTTPS	Hypertext Transfer Protocol Secure
IAM	Identity Access Management
KPI	Key Performance Indicator
M-CNCC	Manager CNC Console or M-CNCC (also known as mCncc) is a CNCC instance which manages local OCCNE common service(s) and remote Agent CNC Console (s) (A-CNCC). M-CNCC has two components: M-CNCC IAM and M-CNCC Core.
M-CNCC IAM	Manager CNC Console IAM or M-CNCC IAM (also known as mCncc Iam) is an IAM component of M-CNCC. M-CNCC IAM contains M-CNCC IAM Ingress Gateway and M-CNCC IAM back-end microservices.
M-CNCC Core	Manager CNC Console Core or M-CNCC Core (also known as mCncc Core) is a core component of M-CNCC that provides GUI and API access portal for accessing NF and OCCNE common services. M-CNCC Core contains M-CNCC Core Ingress Gateway and M-CNCC Core back-end microservices.
A-CNCC	Agent CNC Console is a CNCC Core instance which manages local NF(s) and local OCCNE common services(s). A-CNCC is managed by M-CNCC. A-CNCC contains A-CNCC Core Ingress Gateway and A-CNCC Core back-end microservices. A-CNCC has no IAM component. A-CNCC is also known as A-CNCC Core or aCncc Core.
A-CNCC Kubernetes cluster	Kubernetes cluster hosting A-CNCC
M-CNCC Kubernetes cluster	Kubernetes cluster hosting M-CNCC
mTLS	Mutual Transport Layer Security
Instance	OCNF or OCCNE common service managed by either M-CNCC Core or A-CNCC Core.

Table (Cont.) Acronyms

Acronym	Definition
Site	Kubernetes Cluster
CS	OCCNE Common Services like Grafana, Kibana, Jaeger, Prometheus, Alertmanager and so on.
MC	Multi Cluster. In multi cluster, a single CNCC can manage NF instances that accessess different Kubernetes clusters.
MO	Mananged Objects
MOS	My Oracle Support
LDAP	Lightweight Directory Access Protocol
LDAPS	Lightweight Directory Access Protocol (Over SSL)
NRF	Network Repository Function
OCNF	Oracle Communications Network Function
OSDC	Oracle Software Delivery Cloud
OSO	Operations Services Overlay
REST API	Representational State Transfer Application Programming Interface
SCP	Service Communication Proxy
SAML	Security Assertion Markup Language
SEPP	Security Edge Protection Proxy
TLS	Transport Layer Security
UDR	Unified Data Repository
UE	User Equipment
URI	Subscriber Location Function

What's New in this Guide

This section introduces the documentation updates for Release 22.3.x in Oracle Communications Cloud Native Core Console Network Impact Report.

Release 22.3.2- F61875-05, January 2023

No updates are made in this document.

Release 22.3.1- F61875-04, November 2022

No updates are made in this document.

Release 22.3.1- F61875-02, October 2022

- Updated the Compatibility Matrix section to provide information on CNC Console compatibility with latest NF versions.
- Updated the Component Load Lineup section to provide compatible versions of components.
- Updated the CNC Console Features section to include newly added features.
- Updated the Upgrade and Rollback Paths section to provide information on upgrade and rollback paths for CNC Console 22.3.1.
- Updated the Metrics section.
- Updated the KPI section.

Release 22.3.0- F61875-01, August 2022

- Updated the Compatibility Matrix section to provide information on CNC Console compatibility with latest NF versions.
- Updated the Component Load Lineup section to provide compatible versions of components.
- Updated the Resource Requirements section.
- Updated the CNC Console Features section to include newly added features.
- Added the Orchestration notes.
- Updated the Helm section to include details of new parameters introduced in the custom-values yaml file for CNC Console 22.3.0.
- Updated the Upgrade and Rollback Paths section to provide information on upgrade and rollback paths for CNC Console 22.3.0.
- Updated the Metrics section.
- Updated the KPI section.

.

1 Introduction

Purpose and Scope

The purpose of this document is to highlight the changes made in CNC Console from Release 22.2.x to Release 22.3.x. These changes may have an impact on the customer network operations and should be considered by the customer while planning the deployment.

CNC Console Compatibility Matrix

The following table provides the list of network functions that are compatible with CNC Console 22.3.x:

Release 22.3.2

Table 1-1 Compatibility Matrix

Network Functions	Compatible Versions
BSF	22.3.x
NRF	22.3.x
NSSF	22.3.x
Policy	22.3.x
SCP	22.3.x
SEPP	22.3.x
UDR	22.3.x

Table 1-2 Compatibility Matrix

Components	Compatible Versions
CNE	22.1.x, 22.2.x, 22.3.x
cnDBTier	22.1.x, 22.2.x, 22.3.x
CDCS	22.3.x
OSO	1.6.2, 1.10.x, 22.3.x
ASM	1.4.6-am9, 1.6.14-am4, 1.9.8-am1

Common Services Load Lineup

The following table provides the list of added or updated common services load lineup that is compatible with CNC Console 22.3.x:

Release 22.3.2

Table 1-3 Common Services Load Lineup

Common Service	Version
Debug-tool	22.3.2
Helm Test	22.3.3
Ingress Gateway	22.3.13

Release 22.3.1

Table 1-4 Common Services Load Lineup

Common Service	Version
Debug-tool	22.3.1
Helm Test	22.3.2
Ingress Gateway	22.3.10

Release 22.3.0

Table 1-5 Common Services Load Lineup

Common Service	Version
Debug-tool	22.3.0
Helm Test	22.3.1
Ingress Gateway	22.3.4

Software Requirements

This section lists the minimum software requirements to install Oracle Communications CNC Console.

Table 1-6 Software Requirements

Software	Version
Kubernetes	1.22.5
HELM	3.8.0
Podman	3.3.1
Prometheus	1.22.5

Orchestration

This section provides information about orchestration changes for CNC Console from release 22.2.x to 22.3.x.

Table 1-7 Orchestration

Orchestration Changes	Status	Notes
Support for in-service upgrade	Yes	For information about upgrade and roll back, see Supported Upgrade and Rollback Paths section. **Note:** The console microservices are single pod. For information about upgrade and roll back, see Upgrading CNC Console section in *Cloud Native Core Console Installation and Upgrade Guide .*
Changes in the custom_values.yaml file	Yes	For information about changes in the `custom_values.yaml` file, see Helm section.
Changes in the resource information for custom_values.yaml file	Yes	For information about changes in the resource requirements, see Resource Requirement section.
Changes in the CSAR package	Yes	Following changes are made in CSAR package: • With this release, two CSAR packages are available: – Generic CSAR package – Customer-specific CSAR and TGZ package. • The uniform naming convention has been followed for the following items across the packages: – package name – custom_value file name – dashboard name – alert file name **Note**: For more information on specific CSAR changes, contact My Oracle Support.
Changes in Role-Based Access Control (RBAC) policy	No	No new RBAC policies are added.
Changes in Life Cycle Management (LCM) Operations	No	No new LCM operations are added.
Helm Test Support	Yes	Helm Test is supported. For more information, see Performing Helm Test section in *Oracle Communications Cloud Native Core Console Installation and Upgrade Guide.*

CNC Console Resource Requirement

This section includes information about CNC Console Resource Requirement.

CNC Console Deployment Resource Usage
Resource usage for CNC Console Single Cluster and Multi Cluster deployment is listed in the following tables.

CNC Console Single Cluster Deployment Resource Usage
Single Cluster Deployment will include M-CNCC IAM, M-CNCC Core and A-CNCC Core components.

CNC Console Common Resource is a common resource needed for manager or agent deployment.

Table 1-8 CNC Console Single Cluster Deployment Resource Usage

Component	Limits		Requests	
	CPU	Memory (Gi)	CPU	Memory (Gi)
M-CNCC IAM	7.5	7.5	3.8	3.8
M-CNCC Core	7	7	3.5	3.5
A-CNCC Core	7	7	3.5	3.5
CNCC Common Resource	3	4	1.5	2
Total	24.5	25.5	12.3	12.8

Formula

Total Resource = M-CNCC IAM Resource + M-CNCC Core Resource + A-CNCC Core Resource + CNCC Common Resource

CNC Console Multi Cluster Deployment Resource Usage
Multi Cluster Deployment will include M-CNCC IAM and M-CNCC Core components in Manager cluster. A-CNCC Core component shall be deployed in Manager cluster if there is a local NF.

A-CNCC Core is needed in each Agent cluster for managing local NF. CNCC Common Resource is a common resource needed for manager or agent deployment.

Table 1-9 CNC Console Multi Cluster Deployment Resource Usage

Component	Limits		Requests	
	CPU	Memory (Gi)	CPU	Memory (Gi)
M-CNCC IAM	7.5	7.5	3.8	3.8
M-CNCC Core	7	7	3.5	3.5
A-CNCC Core	7	7	3.5	3.5
CNCC Common Resource	3	4	1.5	2
*No Of Agents In Other Clusters	2			
Total	37.5	40.5	18.8	20.3

* Assumed number of Agents (A-CNCC Core deployments) for the calculation

Formula

Total Resource = M-CNCC IAM Resource + M-CNCC Core Resource + Common Resources + (No Of Agents In Other Clusters * (CNCC Common Resource + A-CNCC Core Resource))

CNC Console Manager Only Deployment
The following table shows resource requirement for manager only deployment. In this case, agent will be deployed in separate cluster.

Component	Limits	Requests	

	CPU	Memory (Gi)	CPU	Memory (Gi)
M-CNCC IAM	7.5	7.5	3.8	3.8
M-CNCC Core	7	7	3.5	3.5
A-CNCC Core	0	0	0	0
CNCC Common Resource	3	4	1.5	2
Total	17.5	18.5	8.8	9.3

CNC Console Agent Only Deployment
The following table shows resource requirement for agent only deployment, in this case manager will be deployed in separate cluster.

Table 1-10 CNC Console Agent Only Deployment

Component	Limits		Requests	
	CPU	Memory (Gi)	CPU	Memory (Gi)
M-CNCC IAM	0	0	0	0
M-CNCC Core	0	0	0	0
A-CNCC Core	7	7	3.5	3.5
CNCC Common Resource	3	4	1.5	2
Total	10	11	5	5.5

CNC Console Manager with Agent Deployment
The following table shows resource requirement for manager with agent deployment, in this case agent will be deployed along with manager to manage local NF.

This manager can manage agents deployed in other clusters.

Table 1-11 CNC Console Manager with Agent Deployment

Component	Limits		Requests	
	CPU	Memory (Gi)	CPU	Memory (Gi)
M-CNCC IAM	7.5	7.5	3.8	3.8
M-CNCC Core	7	7	3.5	3.5
A-CNCC Core	7	7	3.5	3.5
CNCC Common Resource	3	4	1.5	2
Total	24.5	25.5	12.3	12.8

CNC Console Component wise Resource Usage

Table 1-12 CNCC Common Resource Usage

Microservice Name	Containers	Limits		Requests		Comments
		CPU	Memory	CPU	Memory	
debug_tools	tools	1	2	0.5	1	Applicable when debug_tool is enabled
hookJobResources		2	2	1	1	Common Hook Resource
helm test	cncc-test					Uses hookJobResources
Total		3	4	1.5	2	

Table 1-13 M-CNCC IAM Resource Usage

Microservice Name	Containers	Limits		Requests		Comments
		CPU	Memory	CPU	Memory	
cncc-iam-ingress-gateway	ingress-gateway	2	2	1	1	
	init-service	1	1	0.5	0.5	Applicable when HTTPS is enabled
	update-service	1	1	0.5	0.5	Applicable when HTTPS is enabled
	common_config_hook					common_config_hook not used in IAM
cncc-iam-kc-http	kc	2	2	1	1	
	init-service	1	1	0.5	0.5	Optional, used for enabling LDAPS
	healthcheck	0.5	0.5	0.3	0.3	
	cnnc-iam--pre-install					Uses hookJobResources
	cnnc-iam-pre-upgrade					Uses hookJobResources
	cnnc-iam-post-install					Uses hookJobResources

Table 1-13 (Cont.) M-CNCC IAM Resource Usage

Microservice Name	Containers	Limits		Requests		Comments
		CPU	Memory	CPU	Memory	
	cnnc-iam-post-upgrade					Uses hookJobResources
Total		7.5	7.5	3.8	3.8	

Table 1-14 M-CNCC Core Resource Usage

Microservice Name	Containers	Limits		Requests		Comments
		CPU	Memory	CPU	Memory	
cncc-mcore-ingress-gateway	ingress-gateway	2	2	1	1	
	init-service	1	1	0.5	0.5	Applicable when HTTPS is enabled
	update-service	1	1	0.5	0.5	Applicable when HTTPS is enabled
	common_config_hook	1	1	0.5	0.5	Common Configuration Hook container creates databases which are used by Common Configuration Client
cncc-mcore-cmservice	cmservice	2	2	1	1	
	validation-hook					Uses common hookJobResources
Total		7	7	3.5	3.5	

Table 1-15 A-CNCC Core Resource Usage

Microservice Name	Containers	Limits		Requests		Comments
		CPU	Memory	CPU	Memory	
cncc-acore-ingress-gateway	ingress-gateway	2	2	1	1	

Table 1-15 (Cont.) A-CNCC Core Resource Usage

Microservice Name	Containers	Limits		Requests		Comments
		CPU	Memory	CPU	Memory	
	init-service	1	1	0.5	0.5	Applicable when HTTPS is enabled
	update-service	1	1	0.5	0.5	Applicable when HTTPS is enabled
	common_config_hook	1	1	0.5	0.5	Common Configuration Hook container creates databases which are used by Common Configuration Client
cncc-acore-cmservice	cmservice	2	2	1	1	
	validation-hook					Uses common hookJobResources
Total		7	7	3.5	3.5	

CNC Console Microservices Resource Requirement

Table 1-16 CNC Console Microservices Resource Requirement

Microservice Name	CPU Per Pod	Memory Per Pod (GB)	Pod count	CPU All Pods - Maximum	Memory All Pods - Maximum (GB)
	Maximum	Maximum	Maximum		
#cncc-iam-kc-http	&$!2.5	&$!2.5	1	2.5	2.5
#cncc-iam-ingress-gateway	^$2	^$2	1	2	2
#cncc-core-cmservice	$2	$2	1	2	2
#cncc-core-ingress-gateway	^$2	^$2	1	2	2
Total				8.5	8.5

- #: <helm release name>→ will be prefixed in each Microservice name. Example: if helm release name is "cncc-iam", then ingress-gateway Microservice name will be "cncc-iam-ingress-gateway"

- ^: CPU Limit/Request Per Pod and Memory Limit/Request Per Pod needs to added as additional resources for init-service and update-service container if TLS needs to be enabled.

  Init-service container's and Common Configuration Client Hook's resources are not counted because the container gets terminated after initialization completes.

Container Name	CPU Request and Limit Per Container	Memory Request and Limit Per Container	Kubernetes Init Container (Job)
init-service	1 cpu	1 gb	Yes
update-service	1 cpu	1 gb	No
common_config_hook	1 cpu	1 gb	No

  – Update Container service

  Ingress Gateway: For periodically refreshing CNCC Private Key/ Certificate and CA Root Certificate for TLS

  – Init Container service

    Ingress Gateway: To get CNCC Private Key or Certificate and CA Root Certificate for TLS during start up

  – Common Configuration Hook

    CNCC Core Common configuration hook container creates databases which are used by Common Configuration Client

- &: Helm Hooks Jobs - These jobs are pre and post jobs which are invoked during installation, upgrade, rollback, and uninstallation of the deployment. These are short-lived jobs which get terminated after the work is done. So, they are not part of Active deployment Resource but need to be considered only during installation, upgrade, rollback, and uninstallation procedures.

Container Type	CPU Request and Limit Per Container	Memory Request and Limit Per Container
Helm Hooks	Request - 1 cpu, Limit - 2 cpu	Request - 1 gb, Limit - 2 gb

! : Healthcheck Container Service- For monitoring health of the db, extra container is added to the kc pod. This is part of active deployment so additional resource of 0.5 is considered as part of kc pod.

Container Type	CPU Request and Limit Per Container	Memory Request and Limit Per Container
Health Check	Request - 0.3 cpu, Limit - 0.5 cpu	Request - 0.3 gb, Limit - 0.5 gb

- Helm Test Job - This job is run on demand when helm test command is executed. It executes the helm test and stops after completion. These are short-lived jobs which gets terminated after the work is done. So, they are not part of active deployment Resource, but needs to be considered only during helm test procedures.

Container Type	CPU Request and Limit Per Container	Memory Request and Limit Per Container
Helm Test	Request - 1 cpu, Limit - 2 cpu	Request - 1 gb, Limit - 2 gb

$ - Troubleshooting Tool Container - If Troubleshooting Tool Container Injection is enabled during CNCC deployment/upgrade, this container will be injected to each CNCC pod (or selected pod, depends on option chosen during deployment/upgrade). These containers will stay till pod/deployment exists.

Container Name	CPU Request and Limit Per Container	Memory Request and Limit Per Container	ephemeral-storage Request and Limit Per Container
ocdebug-tools	Request - 0.5 cpu, Limit - 1 cpu	Request - 1 gb, Limit - 2 gb	Request - 2 gb, Limit - 4 gb

2
CNC Console Features

This section provides a high-level overview of the CNC Console 22.3.x features.

Release 22.3.1

Support for EIR mode in UDR: To enable the Equipment Identity Register (EIR) mode of UDR in CNC Console, new API prefix is introduced in CNC Console.

For information about EIR Prefix, see the "CNC Console KPIs" and "CNC Console Metrics" sections in *Oracle Communications Cloud Native Core Console User Guide*.

Release 22.3.0

Support for CNC Console Deployment using Continuous Delivery Control Server (CDCS)

In addition to CNC Console's Command Line Interface (CLI) deployment method, CNC Console can be deployed using Continuous Delivery Control Server (CDCS), which is a centralized server that automates CNC Console deployment processes such as downloading the CNC Console package, installation, upgrade, and rollback.

For more information about CDCS, see *Oracle Communications Cloud Native Core CD Control Server User Guide*. For information about CNC Console deployment using CDCS, see the "Overview" section in *Oracle Communications Cloud Native Core Console Installation and Upgrade Guide.*

Single Helm chart for CNC Console Deployment

Until the current release, CNC Console was using two helm charts to deploy CNCC IAM and M-CNCC Core or A- CNCC Core components. With this feature, CNC Console will be able to deploy all the components as part of a single helm chart deployment. For more information about the Single Helm chart for CNC Console Deployment, see *Oracle Communications Cloud Native Core Console Installation and Upgrade Guide.*

Compliance with ASM 1.9.x and Kubernetes 1.20

CNC Console deployment is enhanced to be in compliance with ASM 1.9.x and Kubernetes 1.20. For more information, see *Oracle Communications Cloud Native Core Console Installation and Upgrade Guide*.

Supports Latest Version of NFs

CNC Console is compatible with the following NF versions:

- SCP 22.3.0
- NRF 22.3.0
- UDR 22.3.0
- POLICY 22.3.0
- BSF 22.3.0

- SEPP 22.3.0
- NSSF 22.3.0

For more information, see *Oracle Communications Cloud Native Core Console Installation and Upgrade Guide* and *Oracle Communications Cloud Native Core Console User Guide.*

3
Supported Upgrade and Rollback Paths

Supported Upgrade Path

The following table provides information about supported upgrade path for CNC Console Release 22.3.x.

CNC Console Deployment Support Matrix

The following table provides details on support of Console Deployment features for various network functions:

Table 3-1 CNC Console Deployment Support Matrix

Deployment	Single Instance or Multiple Instance of NF Support	Policy	BSF	SCP	UDR	NRF	SEPP	NSSF
Single-Cluster	Single Instance per cluster	YES	YES	YES	YES	YES	YES	YES
	Multiple Instance per cluster	YES	YES	YES	YES	YES	NO	NO
	Upgrade Order (Source Release 22.1.x/ Older and Target Release 22.3.x) (CNCC or NF to be upgraded first?)	NF	NF	NF	NF	NF	NF	NF

Table 3-1 (Cont.) CNC Console Deployment Support Matrix

	Upgrade Order (Source Release 22.2.x/ 22.3.0 and Target Release 22.3.x) (CNCC or NF to be upgraded first?)	CNCC	CNCC	CNCC	CNCC	CNCC	CNCC	CNCC
Multi-Cluster	Single Instance per cluster	YES	YES	YES	YES	YES	YES	YES
	Multiple Instance per cluster	YES	YES	YES	YES	YES	NO	NO
	Upgrade Order (Source Release 1.9.x and Target Release 22.3.x) (CNCC or NF to be upgraded first?)	NO	NO	NO	NO	NO	NO	NO
	Upgrade Order (Source Release 22.1.x and Target Release 22.3.x) (CNCC or NF to be upgraded first?)	CNCC	NO	NO	NO	NO	NO	NO

Table 3-1 (Cont.) CNC Console Deployment Support Matrix

	Upgrade Order (Source Release 22.2.x/ 22.3.0 and Target Release 22.3.x) (CNCC or NF to be upgraded first?)	CNCC	CNCC	CNCC	CNCC	CNCC	CNCC	CNCC

CNC Console Release 22.3.2

Supported Upgrade Path

The following table provides information about supported upgrade path for CNC Console Release 22.3.2.

Table 3-2 Supported Upgrade Path

Source CNC Console release	Target CNC Console release
22.1.x, 22.2.x, 22.3.0, 22.3.1	22.3.2

CNC Console Release 22.3.1

Supported Upgrade Path

The following table provides information about supported upgrade path for CNC Console Release 22.3.1.

Table 3-3 Supported Upgrade Path

Source CNC Console release	Target CNC Console release
22.1.x, 22.2.x, 22.3.0	22.3.1

Supported Rollback Path 22.3.2

The following table provides information about supported rollback path for CNC Console Release 22.3.2.

Table 3-4 Supported Rollback Path

Source CNC Console release	Target CNC Console release
22.3.2	22.3.1, 22.3.0, 22.2.x, 22.1.x

Supported Rollback Path 22.3.1

The following table provides information about supported rollback path for CNC Console Release 22.3.1.

Table 3-5 Supported Rollback Path

Source CNC Console release	Target CNC Console release
22.3.1	22.3.0, 22.2.x, 22.1.x

CNC Console Release 22.3.0

Supported Upgrade Path

The following table provides information about supported upgrade path for CNC Console Release 22.3.0.

Table 3-6 Supported Upgrade Path

Source CNC Console release	Target CNC Console release
22.1.x, 22.2.X	22.3.0

Supported Rollback Path

The following table provides information about supported rollback path for CNC Console Release 22.3.0.

Table 3-7 Supported Rollback Path

Source CNC Console release	Target CNC Console release
22.3.0	22.2.x, 22.1.x

4
Configuration

Helm

The following helm parameters are added or updated in CNC Console Release 22.3.x.

CNC Console Release 22.3.2

There are no new no changes in the Helm parameters made in this release.

CNC Console Release 22.3.1

There are no new no changes in the Helm parameters made in this release.

CNC Console Release 22.3.0

- Updated the CNC Console Global Configurations section with the following helm parameters to support Single helm chart deployment:
  - global.cncc-iam.enabled

  Helm test parameters:
  - global.helmTestServiceAccountName
  - global.test.resources
  - global.test.complianceEnable

The following static nodeport parameters are depreciated from the custom_values.yaml:

- staticNodePortEnabled
- staticHttpNodePort
- staticHttpsNodePort

> **Note:**
>
> `Static nodeport` parameter is taken out from custom_values.yaml, as it is not recommented to use.

Note:

Until the current release, CNC Console was using two helm charts for its components CNCC IAM and M-CNCC Core or A- CNCC Core deployments. In this release, CNC Console will be able to deploy all the components as part of a single helm chart deployment.
The following is the sample custom value configuration option:

```
isMultiClusterDeployment:false
cncc-iam:
  enabled: true
mcncc-core:
  enabled: true
acncc-core:
  enabled: true
```

For more information on the parameters, see *Oracle Communications Cloud Native Core Console Installation and Upgrade Guide.*

REST API

There are no updates to REST API parameters in CNC Console Release 22.3.x.

For more information on the REST API parameters, see *Oracle Communications Cloud Native Core Console User Guide*.

5 Observability

Metrics

The following metrics are updated in CNC Console 22.3.x:

CNC Console Release 22.3.2

There are no new no changes in the CNC Console Metrics n this release.

CNC Console Release 22.3.1

Updated the following metrics in the the CNC Console Metrics section to support the Equipment Identity Register (EIR):

- CNCC Core UDR Requests
- CNCC Core UDR Responses

CNC Console Release 22.3.0

Updated the metrics filters of following metrics in the the CNC Console Metrics section:

- CNCC IAM Requests
- CNCC IAM Response
- CNCC IAM Success Responses
- CNCC IAM 5xx Responses
- CNCC IAM 4xx Responses
- CNCC IAM Error Responses
- CNCC IAM Request Processing Time- Ingress only
- CNCC IAM Request Processing Time
- CNCC IAM Access Token Request
- CNCC IAM Access Token Granted
- CNCC IAM Access Token Not Granted
- CNCC IAM User Login Failure Responses
- CNCC Core Access Token Request
- CNCC Core Access Token Granted Responses
- CNCC Core Access Token Not Granted Responses
- CNCC Core User Login Failure Responses

For more information on the metrics, see *Oracle Communications Cloud Native Core Console User Guide.*.

KPI

The following KPIs are updated in CNC Console 22.3.x:

CNC Console Release 22.3.2

There are no new updates in the CNC Console KPIs in this release.

There are no new updates in the CNC Console KPIs in this release.
CNC Console Release 22.3.1

Updated the following KPIs in the CNC Console KPIs section to support the EIR:

- CNCC Core Requests
- CNCC Core Responses
- CNCC Core Success Rate
- CNCC Core Error Rate

CNC Console Release 22.3.0

Updated the the metrics filters of the following KPIs in the CNC Console KPIs section:

- CNCC IAM Requests
- CNCC IAM Responses
- CNCC IAM Success Rate
- CNCC IAM Error Rate
- CPU Usage

For more information on the KPIs, see *Oracle Communications Cloud Native Core Console User Guide.*

Alerts

There are no updates to alerts in CNC Console Release 22.3.x.

For more information on the Alerts, see *Oracle Communications Cloud Native Core Console User Guide.*