

Oracle® Communications

Networks Data Analytics Function Network Impact Report



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Acronyms

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

Table Acronyms

Acronym	Description
3GPP	3rd Generation Partnership Project
5GC	5G Core Network
5GS	5G System
AF	Application Function
API	Application Programming Interface
AMF	Access and Mobility Management Function
CNC	Cloud Native Core
CNE	Oracle Communications Cloud Native Core, Cloud Native Environment (CNE)
FQDN	Fully Qualified Domain Name
GUI	Graphical User Interface
HTTPS	Hypertext Transfer Protocol Secure
KPI	Key Performance Indicator
HA	High Availability
IMSI	International Mobile Subscriber Identity
K8s	Kubernetes
ME	Monitoring Events
Network Slice	A logical network that provides specific network capabilities and network characteristics.
NEF	Oracle Communications Cloud Native Core, Network Exposure Function (NEF)
NF	Network Function
NRF	Oracle Communications Cloud Native Core, Network Repository Function (NRF)
NSI	Network Slice Instance. A set of Network Function instances and the required resources (such as compute, storage and networking resources) which form a deployed Network Slice.
NSSF	Oracle Communications Cloud Native Core, Network Slice Selection Function (NSSF)
NWDAF	Network Data Analytics Function
OAM	Operations, Administration, and Maintenance
PLMN	Public Land Mobile Network
REST	Representational State Transfer
SBA	Service Based Architecture
SBI	Service Based Interface
SMF	Session Management Function
SNMP	Simple Network Management Protocol
SUPI	Subscription Permanent Identifier
UDM	Unified Data Management

Table (Cont.) Acronyms

Acronym	Description
UE	User Equipment
URI	Uniform Resource Identifier

What's New in This Guide

This section introduces the documentation updates for Release 23.1.0 in *Oracle Communications Networks Data Analytics Function Network Impact Report*.

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- Added compatibility matrix details in the [Compatibility Matrix](#) section.
- Added component load lineup details in the [Common Services Load Lineup](#) section.
- Added resource requirement details in the [Resource Requirements](#) section.
- Added orchestration details in the [Orchestration](#) section.
- Added new feature information in the [OCNWDAF Features](#) section.
- Added Helm parameter details in the [Helm](#) section.

1

Introduction

1.1 Purpose and Scope

The purpose of this document is to highlight the changes made in OCNWDAF from Release 22.1.0 to Release 23.1.0. These changes may have impact on the customer network operations and must be considered while planning the deployment.

1.2 Compatibility Matrix

This section lists the versions of added or updated components in Release 23.1.0. To know the list of all the supported versions, see *Oracle Communications Network Analytics Suite Release Notes*.

Release 23.1.0

The following table lists the versions of added or updated components in this release:

Table 1-1 Compatibility Matrix

Component	Compatibility Version
CNE	22.1.0
cnDBTier	22.4.1
CDCS	NA
ASM	NA
OSO	NA
CNC Console	23.1.0
ATS	23.1.0

1.3 Common Services Load Lineup

This section lists the versions of added or updated common services in Release 23.1.0. To know the list of all the supported versions, see *Oracle Communications Network Analytics Suite Release Notes*.

Release 23.1.0

The following table lists the versions of added or updated common services in this release.

Table 1-2 Common Services Load Lineup

Service Name	Image Tag
App-Info	22.4.0
Config-Server	22.4.0

Table 1-2 (Cont.) Common Services Load Lineup

Service Name	Image Tag
Egress and Ingress Gateway	NA
Helm Test	22.2.0
Perf-Info	22.4.0

1.4 Software Requirements

This section lists the added or updated software required to install Release 23.1.0. For more information about software requirements, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

Release 23.1.0

The following table lists the versions of added or updated software required to install.

Table 1-3 Software Requirements

Software	Version
Helm	3.6.3
Kubernetes	1.21.6

Table 1-4 Additional Software

Software	Version	Used For
MetalLb	NA	External IP
Prometheus	2.36.1	Metrics
Jaeger	1.28.0	Tracing

1.5 Orchestration

This section provides information about orchestration changes in Release 23.1.0.

Release 23.1.0

The following table provides information about orchestration changes in this release.

Table 1-5 Orchestration

Orchestration Changes	Status	Notes
Support for in-service upgrade and roll back	No	
Changes in the custom_values.yaml file	No	OCNWDAF architecture supports the following custom values files: • ocnwdaf_custom_values.yaml For information about the custom_values.yaml file, see Helm section.

Table 1-5 (Cont.) Orchestration

Orchestration Changes	Status	Notes
Changes in the resource information for ocnwdaf_custom_values.yaml file	NA	For information about changes in the resource requirements, see Resource Requirements section.
Changes in the CSAR package	No	For more information on the CSAR package, 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	No	For information about Helm test, see Performing Helm Test section in <i>Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide</i> .

1.6 Resource Requirements

This section lists the added or updated resource requirements in Release 23.1.0. For more information about resource requirements, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

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Table 1-6 NWDAF Services Resource Requirements

Service Name	Pod replica #		CPU/Pod		Memory/Pod (in G)		Ephemeral Storage	
	Min	Max	Min	Max	Min	Max	Min (Mi)	Max (G)
ocn-nwdaf-cap4c-kafka-ingestor	2	4	1	2	1	2	78.1	1
ocn-nwdaf-cap4c-reporting-service	1	2	1	2	1	2	78.1	1
ocn-nwdaf-geo-redundancy-agent	1	1	1	1	1	2	78.1	1

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OCNWDAF Features

This chapter lists the added or updated features in Release 23.1.0. For more information about the features, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.1.0

Oracle Communications Networks Data Analytics Function (NWDAF) 23.1.0 has been updated with the following enhancements:

- **Support for Georedundancy:** Georedundancy is data replication of one site across multiple sites to efficiently handle failure scenarios and ensure High Availability (HA). OCNWDAF now supports both 2 and 3 site Georedundant deployments. For more information, see *Oracle Communications Network Data Analytics Function User Guide*.
- **Configure OCNWDAF using CNC Console:** Oracle Communications Networks Data Analytics Function (OCNWDAF) now supports configuring different global and service parameters using the CNC Console application. For more information, see *Oracle Communications Network Data Analytics Function User Guide*.
- **NRF Client Support:** This service integrates OCNWDAF with NRF for registration, discovery, and service status or load related information, along with application and performance information services. For more information, see *Oracle Communications Network Data Analytics Function Installation and Fault Recovery Guide*.

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Supported Upgrade and Rollback Paths

This chapter lists the supported upgrade and rollback paths in Release 23.1.0. For more information about upgrade and rollback procedures, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

Release 23.1.0

Supported Upgrade Path

OCNWDAF does not support upgrade.

Supported Rollback Path

OCNWDAF does not support rollback.

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Configuration

This chapter lists the added or updated configuration changes in Release 23.1.0.

4.1 Helm

This section lists the Helm parameter changes in Release 23.1.0. For more information about software requirements, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

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The following are the Helm parameters changes in this release:

Georedundancy Parameters

- `ocnwdaf.cluster.namespace`
- `ocnwdaf.geored.hooks.database`
- `ocnwdaf.geored.hooks.table`
- `ocnwdaf.geored.hooks.column1`
- `ocnwdaf.geored.hooks.column2`
- `ocnwdaf.geored.hooks.image`
- `ocnwdaf.geored.agent.name`
- `ocnwdaf.geored.agent.replicas`
- `ocnwdaf.geored.agent.image.source`
- `ocnwdaf.geored.agent.image.pullPolicy`
- `ocnwdaf.geored.agent.resources.limits.cpu`
- `ocnwdaf.geored.agent.resources.limits.memory`
- `ocnwdaf.geored.agent.resources.request.cpu`
- `ocnwdaf.geored.agent.resources.request.memory`
- `ocnwdaf.geored.agent.service.type`
- `ocnwdaf.geored.agent.service.port.containerPort`
- `ocnwdaf.geored.agent.service.port.targetPort`
- `ocnwdaf.geored.agent.service.port.name`
- `ocnwdaf.geored.agent.env.GEO_RED_AGENT_SERVER_HTTP2_ENABLED`
- `ocnwdaf.geored.agent.env.GEO_RED_AGENT_HEARTBEAT_INTERVAL_MS`
- `ocnwdaf.geored.agent.env.GEO_RED_AGENT_HEARTBEAT_THRESHOLD`
- `ocnwdaf.geored.agent.env.GEO_RED_AGENT_SITE_NUMBER`
- `ocnwdaf.geored.agent.env.GEO_RED_AGENT_SITE_ID`
- `ocnwdaf.geored.agent.env.GEO_RED_AGENT_NUMBER_OF_MATED_SITE`

- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_SELF_ADDRESS
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_MICROSERVICE_LIVELINESS_MS
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_OCNWDAF_CORE_COMPONENT_LIST
- ocnnwdaf.geored.agent.env.GEO_RED_SITE_SUBSCRIPTION_OWNERSHIP_TRANSFER_URL
- ocnnwdaf.geored.agent.env.GEO_RED_SITE_DATA_COLLECTION_URL
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_DBTIER_REPLICATION_STATUS_URL
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_DBTIER_STATUS_URL
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_SITE_SECONDARY_SITEID
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_SITE_SECONDARY_ADDRESS
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_SITE_TERTIARY_SITEID
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_SITE_TERTIARY_ADDRESS
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_DB_URL
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_USERNAME
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_PASSWORD
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_ENABLE
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_DB_PORT
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_DB_NAME
- ocnnwdaf.geored.agent.env.GEO_RED_AGENT_CONFIG_SERVER

NRF Client Parameters

- global.deploymentNrfClientService.envNfNamespace
- nrf-client.configmapApplicationConfig.profile
- appinfo.infraServices
- perf-info.configmapPerformance.prometheus
- global.leaderPodDbName
- nrf-client-nfmanagement.dbConfig.leaderPodDbName
- global.networkDbName
- nrf-client-nfmanagement.dbConfig.networkDbName
- nrf-client-nfmanagement.enablePDBSupport
- nrf-client-nfmanagement.replicas
- primaryNrfApiRoot
- SecondaryNrfApiRoot
- retryAfterTime
- nrfClientType
- nrfClientSubscribeTypes
- appProfiles
- enableF3

- enableF5
- renewalTimeBeforeExpiry
- validityTime
- enableSubscriptionAutoRenewal
- acceptAdditionalAttributes
- enableVirtualNrfResolution
- virtualNrfFqdn
- virtualNrfScheme
- requestTimeoutGracePeriod
- nrfRetryConfig
- healthCheckConfig
- supportedDataSetId
- nrfclient.nrf-client.configmapApplicationConfig.profile
- nrfclient.nrf-client
- config-server
- config-server.enabled
- config-server.envMySQLDatabase
- config-server.dbConfig.dbEngine
- appinfo.enabled
- appinfo.debug
- serviceMeshCheck
- istioSidecarQuitUrl
- istioSidecarReadyUrl
- nrf-client.nrf-client-nfdiscovery
- configmapApplicationConfig
- cpuRequest
- cpuLimit
- memoryRequest
- memoryLimit
- minReplicas
- maxReplicas
- averageCpuUtil
- commonCfgServer.configServerSvcName
- commonCfgServer.port
- commonCfgClient.enabled
- nrf-client.nrf-client-nfdiscovery.dbConfig
- dbConfig.dbHost
- dbConfig.dbPort

- dbConfig.secretName
- dbConfig.dbName
- dbConfig.dbUNameLiteral
- dbConfig.dbPwdLiteral
- dbConfig.dbEngine
- serviceMeshCheck
- istioSidecarQuitUrl
- istioSidecarReadyUrl
- nrf-client-nfmanagement
- configmapApplicationConfig
- replicas
- cpuRequest
- cpuLimit
- memoryRequest
- memoryLimit
- commonCfgServer.configServerSvcName
- commonCfgServer.port
- commonCfgClient.enabled
- dbConfig
- dbConfig.dbHost
- dbConfig.dbPort
- dbConfig.secretName
- dbConfig.dbName
- dbConfig.dbUNameLiteral
- dbConfig.dbPwdLiteral
- bConfig.dbEngine
- serviceMeshCheck
- istioSidecarQuitUrl
- istioSidecarReadyUrl

4.2 REST API

This section lists the REST API changes in release 23.1.0. For more information about the REST APIs, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.1.0

There is no change in the REST API in this release.

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Observability

This chapter lists the observability changes in release 23.1.0.

5.1 Metrics

This section lists the added or updated metrics in Release 23.1.0. For more information on the metrics, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.1.0

New metrics are not introduced in release 23.1.0.

5.2 Alerts

This section lists the added or updated alerts in Release 23.1.0. For more information on the alerts, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.1.0

New alerts are not introduced in release 23.1.0.