

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
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
NF	Network Function
NRF	Oracle Communications Cloud Native Core, Network Repository Function
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
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 23.4.x in *Oracle Communications Networks Data Analytics Function Network Impact Report*.

Release 23.4.0 - F88219-01, December 2023

- Added compatibility matrix details in the [Compatibility Matrix](#) section.
- Added Common Services 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 information about new features in the [OCNWDAF Features](#) section.
- Added Helm parameter details in the [Helm](#) section.
- Added Rest API details in the [REST API](#) section.

1

Introduction

The purpose of this document is to highlight the changes made in OCNWDAF from Release 23.3.x to Release 23.4.x. These changes may have impact on the customer network operations and must be considered while planning the deployment.

Note

The performance and capacity of the OCNWDAF system may vary based on the call model, Feature/Interface configuration, and underlying CNE and hardware environment.

1.1 Compatibility Matrix

This section lists the versions of added or updated components in Release 23.4.x. To know the list of all the supported versions, see *Oracle Communications Network Analytics Suite Release Notes*.

Release 23.4.0

The following table lists the versions of added or updated components in Release 23.4.0:

Table 1-1 Compatibility Matrix

Component	Compatibility Version
CNE	23.2.x 23.1.x 22.4.x
cnDBTier	23.4.x 23.3.x 23.2.x 23.1.x
OSO	NA
CDCS	NA
CNC Console	23.3.x 23.2.x 23.1.x
ATS	23.4.0

1.2 Common Services Load Lineup

This section lists the versions of added or updated common services in Release 23.4.x. To know the list of all the supported versions, see *Oracle Communications Network Analytics Suite Release Notes*.

Release 23.4.0

The following table lists the versions of added or updated common services in Release 23.4.x:

Table 1-2 Common Services Load Lineup

Service Name	Version
nrf client app info	22.4.0
nrf client configuration server	22.4.0
nrf client perf info	22.4.0
nwdaf-egress-gateway	23.1.3
nwdaf-ingress-gateway	23.1.3
nrf client	22.4.0
Helm Test	22.2.0
ATS Framework	23.4.0

1.3 Software Requirements

This section lists the added or updated software required to install Release 23.4.x. For more information about software requirements, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

Release 23.4.0

The following table lists the versions of added or updated software required to install Release 23.4.0:

Table 1-3 Software Requirements

Software	Version
Kubernetes	• 1.26.x • 1.25.x • 1.24.x • 1.23.x
Helm	• 3.8.0 • 3.6.3
Podman	• 3.3.1 • 3.2.3 • 2.2.1

Table 1-4 Additional Software

Software	Version	Used For
MetalLb	0.12.1	External IP
Prometheus	2.39.1	Metrics
tracer	1.21.0	Tracing

1.4 Orchestration

This section provides information about orchestration changes in Release 23.4.x.

Release 23.4.0

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	OCNWDAF does not support upgrade or rollback.
Changes in the <code>values.yaml</code> file	Yes	For information on Helm parameters, see Helm section.
Changes in the resource information for <code>values.yaml</code> file	Yes	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> .

1.5 Resource Requirements

This section lists the added or updated resource requirements in Release 23.4.x. For more information about resource requirements, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

Note

Changes in the resource requirements are highlighted in **bold**.

Release 23.4.0

The following table lists the added or updated resource requirements in this release:

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-data-collection-controller	1	2	2	2	1	1	78.1	1
nwdaf-mysql-innodb-cluster	3	3	2	2	1	1	78.1	1
nwdaf-mysql-operator	1	2	2	2	1	1	78.1	1
nwdaf-mysql-innodb-cluster-router	1	2	2	2	1	1	78.1	1
Total	7	9	8	8	4	4	312.4	4

2

OCNWDAF Features

This chapter lists the added or updated features in Release 23.4.x. For more information about the features, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.4.0

Oracle Communications Networks Data Analytics Function (OCNWDAF) 23.4.0 is updated with the following enhancements:

- **Quality of Service (QoS) Sustainability Analytics:** Consumers can derive QoS (Quality of Service) Sustainability Analytics from the OCNWDAF. This analytics information includes QoS change statistics in a target area (for a specified period). OCNWDAF provides both statistical and predictive analytics. The OCNWDAF GUI is enhanced to provide graphic visualization of QoS analytics, and QoS APIs are introduced for this feature. For more information, see *Oracle Communications Networks Data Analytics Function User Guide*.
- **Data Director (OCNADD) Integration:** The OCNWDAF supports the Data Director (OCNADD) as a data source. OCNADD receives messages from Oracle NFs (such as SCP, SEPP, and NRF), captures the call flow messages exchanged between the control plane NFs, filters data from the call flows, and sends it to the CAP4C. The Kafka Mirror Maker replication utility replicates Kafka topics between the OCNADD and the OCNWDAF to implement this feature. The Data Collection Service is also enhanced to support the Data Director as a data source.

Data mine "Cell Location" from Data Director Message Feed: When the OCNADD is configured as a data source for OCNWDAF, the Cell Location information is mined from the Data Director Message Feed. This information is used for generating analytics for the following Analytics IDs:

- Slice Load Level Analytics
- UE Mobility Analytics
- UE Abnormal Behavior Analytics

For more information, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

- **OCNWDAF Dashboard Enhancements:** The OCNWDAF GUI is enhanced with rich visual features for ML Model Selection, Slice Load Monitoring, NF Load Monitoring, Geofence Monitoring, UE Mobility Monitoring, Network Performance, User Data Congestion Analytics and QoS Sustainability Analytics. A new GUI page is introduced to view UE Mobility Analytics, and a new tab is presented on the Monitoring page to view QoS Analytics. For more information, see *Oracle Communications Networks Data Analytics Function User Guide*.
- **Analytics Database Integration:** This feature is an architectural enhancement for OCNWDAF. The new database is based on MySQL cluster and stores relational and time-series data. For more information, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.
- **Georedundancy and Data Replication:** In a georedundant deployment, High Availability (HA) can be achieved by data replication across all sites. Data topics across all sites are replicated by the "Mirror Maker 2 (MM2)", the replication tool for Kafka topics. OCNWDAF

supports Mirror Maker Configuration for Data Replication. For more information on configuring Mirror Maker and its parameters, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

- **Performance Metrics for QoS Sustainability Analytics:** OCNWDAF provides performance metrics for the QoS Sustainability analytics ID.

3

Supported Upgrade and Rollback Paths

This chapter lists the supported upgrade and rollback paths in Release 23.4.x.

OCNWDAF Release 23.4.0

Supported Upgrade Path

OCNWDAF does not support upgrade.

Supported Rollback Path

OCNWDAF does not support rollback.

4

Configuration

This chapter lists the added or updated configuration changes in Release 23.4.x.

4.1 Helm

This section lists the Helm parameter changes in Release 23.4.x. For more information about Helm parameters, see *Oracle Communications Networks Data Analytics Function Installation and Fault Recovery Guide*.

Release 23.4.0

The following are the Helm parameters changes in release 23.4.0:

Data Director Integration Parameters

- dataSource
- cellLocation
- sessionBasic

Mirror Maker Parameters

- clusters
- clusterX.bootstrap.servers
- clusterX.config.storage.replication.factor
- clusterX.offset.storage.replication.factor
- clusterX.status.storage.replication.factor
- replication.factor
- nwdafDataReplication.config.serviceN.kafkaService
- nwdafDataReplication.config.serviceN.namespace
- nwdafDataReplication.config.serviceN.cluster

4.2 REST API

This section lists the REST API changes in release 23.4.x. For more information about the REST APIs, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.4.0

Added the QoS Sustainability Analytics Rest APIs for the newly introduced QoS Sustainability Analytics category. Listed below are configuration parameters:

- apiroot
- serverport
- subscriptionId
- analyticsId

- supported-features
- tgt-ue
- event-filter
- ana-req
- eventSubscriptions
- evtReq
- notificationURI
- eventNotifications
- failEventReports
- consNflInfo
- notifCorrId
- supportedFeatures
- anySlice
- event
- extraReportReq
- matchingDir
- notificationMethod
- networkArea
- qosRequ
- qosFlowRetThds
- ranUeThrouThds
- repetitionPeriod
- snssais
- tgtUe
- 5qi
- gfbrUI
- gfbrDI
- resType
- pdb
- per
- deviceSpeed
- deviceType
- PacketDelBudget
- PacketErrRate
- eventNotifications
- subscriptionId
- event
- start

- expiry
- timeStampGen
- qosSustainInfos

5

Observability

This chapter lists the observability changes in release 23.4.x.

5.1 Metrics

This section lists the added or updated metrics in Release 23.4.x. For more information on the metrics, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.4.0

New metrics are not introduced in release 23.4.0.

5.2 Alerts

This section lists the added or updated alerts in Release 23.4.x. For more information on the alerts, see *Oracle Communications Networks Data Analytics Function User Guide*.

Release 23.4.0

New alerts are not introduced in release 23.4.0.