# Oracle® Communications

# Cloud Native Core, Security Edge Protection Proxy Installation, Upgrade, and Fault Recovery Guide

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Oracle Communications Cloud Native Core, Security Edge Protection Proxy Installation, Upgrade, and Fault Recovery Guide, Release 25.2.200

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# Preface


- Documentation Accessibility
- Diversity and Inclusion
- Conventions


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# Acronyms

The following table lists the acronyms and the terminologies used in the document:

**Table Acronyms and Terminologies**

| Acronym | Description |
|---|---|
| Cat-0 | Category 0 SBI Message Schema Validation Feature |
| Cat-1 | Category 1 Service API Validation Feature |
| Cat-2 | Category 2 Network ID Validation Feature |
| Cat-3 | Category 3 Previous Location Check/ Category 3 Time location check |
| CNC Console | Oracle Communications Cloud Native Configuration Console |
| CRD | Custom Resource Definition |
| CNE | Oracle Communications Cloud Native Environment |
| cSEPP/C-SEPP | Consumer Security Edge Protection Proxy |
| DB | Database |
| DNS | Domain Name System |
| DRL | Drools Rule Language |
| EGW | Egress Gateway |
| FQDN | Fully Qualified Domain Name |
| GSMA | Groupe Speciale Mobile Association (GSMA). Represents the interests of mobile operators and the broader mobile industry worldwide. |
| Hosted SEPP | GSMA deployment model in which partners are hosted to connect to roaming partners. |
| IGW | Ingress Gateway |
| IPX | Internetwork Packet Exchange |
| K8s | Kubernetes |
| LCI Header | Load Control Information header |
| Local PLMN | PLMN managed by Local SEPP |
| Local SEPP | SEPP in Local PLMN |
| MNC | Mobile Network Codes |
| MCC | Mobile Country Codes |
| MNO | Mobile Network Operator |
| NDB | Network Database |
| NF | Network Function |
| Network Function | A functional building block within a network infrastructure, which has well defined external interfaces and well defined functional behavior. In practical terms, a network function is often a network node or physical appliance. |
| NF Consumer | A generic way to refer to an NF which consumes services provided by another NF. Example: An AMF acts as a Consumer NF that consumes AMPolicy services provided by the PCF. |
| NF Instance | A specific instance of a network function type. |
| NF Producer or NF Provider | A generic way to refer to an NF which provides services that can be consumed by another NF. Example: A PCF acts as a Producer NF that provides AMPolicy Services to the AMF. |
| NIF | Network Intelligence Fabric |


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**Table (Cont.) Acronyms and Terminologies**

| Acronym | Description |
|---|---|
| NRF | Oracle Communications Cloud Native Core, Network Repository Function |
| OCI Header | Overload Control Information header |
| OSDC | Oracle Software Delivery Cloud |
| OCI | Oracle Cloud Infrastructure |
| OCIR | Oracle Cloud Infrastructure Registry |
| OHC | Oracle Help Center |
| OKE | Oracle Engine for Kubernetes |
| OTEL | OpenTelemetry |
| OSDC | Oracle Software Delivery Cloud |
| PDB | PodDisruptionBudget |
| PLMN | Public Land Mobile Network |
| pSEPP/P-SEPP | Producer Security Edge Protection Proxy |
| Remote PLMN | PLMN managed by Remote SEPP |
| Remote SEPP | SEPP in Remote PLMN |
| Remote SEPP Set | Set of Remote SEPPs to allow routing across Remote SEPPs |
| REST API | Representational State Transfer Application Programming Interface |
| Roaming Hub | Roaming Hub is the deployment mode of SEPP. Roaming Hub is used as an intermediate proxy. Each SEPP connects to the Roaming Hub which further connect to another SEPP. All the Remote SEPPs can communicate with each other through roaming hub. |
| SAN | Subject Alternate Name |
| SNI | Server Name Indication |
| Scaling | Ability to dynamically extend or reduce resources granted to the Virtual Network Function (VNF) as needed. This includes scaling out and in or scaling up and down. |
| SCM | Security Countermeasure |
| SEPP | Oracle Communications Cloud Native Core, Security Edge Protection Proxy |
| SUCI | Subscription Concealed Identifier |
| SUPI | Subscription Permanent Identifier |
| SVC | Service |
| TLS | Transport Layer Security |
| TH | Topology Hiding |
| TUH | Topology Unhiding |
| TPS | Transactions Per Second |
| UE | User Equipment |
| UDR | Oracle Communications Cloud Native Core, Unified Data Repository |


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# What's New in This Guide

This section introduces the documentation updates for Release 25.2.2xx.

**Release 25.2.200- G48318-01, April 2026**

**General Updates**:

- Updated the release number to 25.2.200 in the entire document.
- Updated the SEPP images in the Pushing the SEPP Images to Customer Docker Registry, Pushing the Roaming Hub or Hosted SEPP Images to Customer Docker Registry, and Pushing the SEPP Images to OCI Docker Registry sections to mention the compatible docker image versions for various microservices.
- Added the `ocsepp_alertrules_rh_hosted_<version>.yaml` and `ocsepp_alertrules_promha_rh_hosted_<version>.yaml` files in the CSAR package, which are used for Hosted SEPP deployment mode.
- Updated the following sections to provide information about Oracle's error correction policy and open source support policies:
  - Oracle Error Correction Policy
  - Oracle Open Source Support Policies
- Updated the Software Requirements section.
- Added the Hosted SEPP Resource Requirements section.
- The file format of `ocsepp_configuration_openapi_<version>.yaml` has been changed to `ocsepp_configuration_openapi_<version>.json`.
- Added Customization of OpenAPI JSON appendix for updating the OpenAPI servers URLs and select the appropriate server for the required API group.

**Installation Updates**:

- Updated the following sections for enabling the Hosted SEPP deployment mode:
  - Configuring Secrets at PLMN Egress and Ingress Gateway
  - Configuring Secrets at N32 Egress and Ingress Gateway
  - Supported Upgrade Paths
  - Added the following parameters for Hosted SEPP deployment mode:
    - `global.hostedSepp`
    - `global.sniHeaderName`
    - `cn32c.sniHeaderName`
    - `pn32c.sniHeaderName`
    - `pn32f.sniHeaderName`
    - `cn32f.sniHeaderName`
    - `n32-ingress-gateway.multiFqdn.enabled`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.fqdn`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.caroot_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.key_store_passwd_file`


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    - `n32-ingress-gateway.multiFqdn.fqdnDetails.key_store_passwd_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.ocsepp_cert_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.rsa_certificate_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.rsa_private_key_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_certificate_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_private_key_file`
    - `n32-ingress-gateway.multiFqdn.fqdnDetails.trust_store_passwd_file`
    - `n32-egress-gateway.multiFqdn.enabled`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.fqdn`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.caroot_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.key_store_passwd_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.ocsepp_cert_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.rsa_certificate_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.rsa_private_key_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_certificate_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_private_key_file`
    - `n32-egress-gateway.multiFqdn.fqdnDetails.trust_store_passwd_file`
- Updated the following sections for enabling the Support for bypassing ASM sidecars:
  - Configuring SEPP to support ASM
  - Predeployment Configurations
  - Installation of ASM Configuration Charts
  - Deploying SEPP with ASM
  - Postdeployment Configuration
- Added the following Preinstallation Tasks to support the Lifecycle Management (LCM) Based Automation:
  - Manually Creating Service Account, Role, and Rolebinding
  - Automatically Creating Service Account, Role, and Rolebinding
- Updated the Configuring SEPP for NRF Interaction section.
- Added the following section in the Alert Configuration:
  - Configuring SEPP Alerts for non-OCCNE Versions
- Added the following parameters for configuring Error Response and Logging Enhancement for SEPP in the Global Parameters, n32-ingress-gateway, plmn-ingress-gateway, n32-egress-gateway, and plmn-ingress-gateway sections:
  - `seppSbiTimerTimezone`
  - `seppMaxRspTimerEnabled`
- Added the following parameters for configuring Lifecycle Management (LCM) Based Automation in the Global Parameters section:
  - `autoCreateResources.enabled`


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  - serviceAccount.create
- Added the following parameters for configuring Error Response and Logging Enhancement for SEPP in the Global Parameters section:
  - global.localProfile.EnhancedLoggingNFType
  - global.localProfile.maxDetailsLength
- Added the following parameters for Configuring SEPP for NRF Interaction in the config-mgr-svc section:
  - config-mgr-svc.nrfAutoRouteCreation
  - config-mgr-svc.enableScpDeployment
  - config-mgr-svc.nrfProfile.enableVirtualNrfResolution
  - config-mgr-svc.nrfProfile.static.primaryNrfApiRoot
  - config-mgr-svc.nrfProfile.static.secondaryNrfApiRoot
  - config-mgr-svc.nrfProfile.static.nrfScheme
  - config-mgr-svc.nrfProfile.virtual.virtualNrfFqdn
  - config-mgr-svc.nrfProfile.virtual.virtualNrfScheme
  - config-mgr-svc.nrfRoutingErrorCriteriaSets
  - config-mgr-svc.nrfRoutingErrorActionSets
- Added the following parameters to delay the notification map listener registration, allowing the coherence cluster to fully initialize before cache access, preventing errors and blockages in the pn32f-svc and Timer Parameters sections:
  - nrfNotificationListenerInitTimeout
  - nrfNotificationListenerTimeout
- Added the following parameter to remove whitespaces from inbound HTTP/2 request headers in the plmn-ingress-gateway and n32-ingress-gateway sections:
  - stripLeadingSpacesRequest
- Added the following nrf-client nfmanagement parameters for configuringTraffic Prioritization using Egress Gateway Pod Protection feature:
  - trafficPrioritization.enabled
  - trafficPrioritization.incomingPriorityHeader
  - trafficPrioritization.outgoingPriorityHeader
  - trafficPrioritization.messageTypes
  - trafficPrioritization.nfSubscribeMessageTypes
  - trafficPrioritization.nfSubscribeMessageTypes.messageType
  - trafficPrioritization.messageTypes.messageType
  - trafficPrioritization.nfSubscribeMessageTypes.subscribeNfTypes.nfType
  - trafficPrioritization.nfSubscribeMessageTypes.subscribeNfTypes.priority
  - trafficPrioritization.messageTypes.priority
  - trafficPrioritization.nfSubscribeMessageTypes.subscribeNfTypes
- Added the nrfclient.appinfo.tagNamespace parameter in the appinfo section.


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- Added the following parameters for configuring Support for bypassing ASM sidecars feature:
  - Added the following parameters in the config-mgr-svc section:
    - `configMgrIntraNFCommPort`
    - `intraNFCommContainerPortName`
  - Added the following parameters in the plmn-ingress-gateway section:
    - `intraNFCommunicationPort`
    - `intraNFComPortName`
  - Updated the default value of the following parameters for enabling one-sided ASM in SEPP feature:
    - `configMgrPort` parameter in the Global Parameters section.
    - `commonCfgServer.port` parameter in the n32-ingress-gateway section.
    - `commonCfgServer.port` in the n32-egress-gateway section.
    - `nrfclient.nrf-client.nrf-client-nfdiscovery.commonCfgServer.port` in the nrf-client section.
    - `nrfclient.nrf-client.nrf-client-nfmanagement.commonCfgServer.port` in the nrf-client section.
    - `nrfclient.appinfo.commonCfgServer.port` in the appinfo section.
    - `nrfclient.perf-info.commonCfgServer.port` in the perf_info.
  - Removed the following parameters as these have been deprecated:
    - `serviceMeshCheck`, `initssl`, `enableIncomingHttp`, `enableIncomingHttps`, and `enableOutgoingHttps` from n32-ingress-gateway section.
    - `serviceMeshCheck`, `initssl`, `enableIncomingHttp`, `enableIncomingHttps`, and `enableOutgoingHttps` from n32-egress-gateway section.
    - `serviceMeshCheck` from plmn-egress-gateway section.
    - `nf-mediation.global.serviceMeshEnabled` from mediation section.
    - `serviceMeshCheck` from update-db section.
    - `nrfclient.nrf-client.nrf-client-nfdiscovery.serviceMeshCheck` from nrf-client section.
    - `nrfclient.nrf-client.nrf-client-nfmanagement.serviceMeshCheck` from nrf-client section.
    - `nrfclient.config-server.global.serviceMeshEnabled` from config manager section.
    - `nrfclient.perf-info.serviceMeshCheck` from perf_info.
    - `coherence-svc.global.asm.serviceMeshCheck` from Coherence Parameters section.

**Upgrade, Rollback, and Uninstall Updates**:

- Updated the supported upgrade paths in the Upgrading SEPP section.
- Updated the supported rollback paths in the Rolling Back SEPP section.


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- Added a note about rollback sequence for n-site geo-replicated setup in the Rolling Back SEPP section.


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# 1 Introduction

This guide describes how to install or upgrade Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP) in a cloud native environment (OCCNE), Oracle Cloud Infrastructure (OCI), and general Kubernetes environment. It also includes information on performing fault recovery for SEPP.

**Note**

- This guide covers the installation instructions when Podman is the container platform with Helm as the Packaging Manager. For any other container platform, the operator must use the commands based on their deployed container runtime environment.
- `kubectl` commands can vary based on the platform deployment. Replace `kubectl` with Kubernetes environment-specific command line tool to configure Kubernetes resources through kube-api server. The instructions provided in this document are as per the CNE version of kube-api server.

**Caution**

User, computer and applications, and character encoding settings may cause an issue when copy-pasting commands or any content from PDF. PDF reader version also affects the copy-pasting functionality. It is recommended to verify the pasted content especially when the hyphens or any special characters are part of the copied content.

## 1.1 Overview

The Security Edge Protection Proxy (SEPP) is a critical network function in the 5G network designed to secure communication between different 5G network elements, particularly between the 5G core and external networks, such as in roaming scenarios. It is the key component of 5G Service Based Architecture (SBA). SEPP acts as a security gateway, enforcing security policies, performing traffic filtering, encryption, and ensuring that only authorized network functions can exchange sensitive information. It ensures the confidentiality, integrity, and availability of communication, mitigating threats like unauthorized access and data breaches.

SEPP supports the following functions:

- It provide an HTTP2 based RESTful interface and APIs to provision other Network Functions (NFs) data.
- Provides TLS protection for traffic between 5G networks, particularly for inter-PLMN (Public Land Mobile Network) communications.
- Acts as a proxy to ensure secure interactions between different Network Functions (NFs) across operators.


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- Supports logging, monitoring, and alerting of security-related events.
- Facilitates secure roaming and inter-network communication by securing the edge.

SEPP:

- leverages a common Oracle Communications Cloud Native Framework.
- uses MySQL NDB Cluster as the backend database in the Data Tier.
- registers with NRF in the 5G network, so the other NFs in the network can discover SEPP through NRF.
- has tiered architecture providing separation between the connectivity, business logic and data layers.

> **Note**
>
> The performance and capacity of the SEPP system may vary based on the call model, Feature/Interface configuration, and underlying platform and hardware environment including but not limited to, the size of the json payload and traffic model.

For more information about the SEPP architecture, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*.

## 1.2 References

Refer to the following documents while deploying :

- *Oracle Communications Cloud Native Core, Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide*
- *Oracle Communications Cloud Native Core, cnDBTier User Guide*
- *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*
- *Oracle Communications Cloud Native Core, Operations Services Overlay Installation and Upgrade Guide*
- *Oracle Communications Cloud Native Core, Data Collector User Guide*
- *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*
- *Oracle Communications Cloud Native Core, Security Edge Protection Proxy REST Specification Guide*
- *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide*
- *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Network Impact Report*
- *Oracle Communications Cloud Native Configuration Console User Guide*
- *Oracle Communications Cloud Native Configuration Console Installation, Upgrade, and Fault Recovery Guide*
- *Oracle Communications Cloud Native Core, Automated Test Suite User Guide*
- *Oracle Communications Cloud Native Core, Certificate Management Installation, Upgrade, and Fault Recovery Guide*


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- *Oracle Communications Cloud Native Core, Certificate Management User Guide*
- *Oracle Communications Cloud Native Core, OCI Deployment Guide*
- *Oracle Communications Cloud Native Core, OCI Adaptor User Guide*
- *Oracle Communications Network Analytics Data Director Installation, Upgrade, and Fault Recovery Guide*
- *Oracle Communications Cloud Native Core Release Notes*
- *Oracle Communications Cloud Native Core Licensing Information User Guide*
- *Oracle Communications Cloud Native Core Solution Upgrade Guide*
- *Oracle Communications Cloud Native Core Security Guide*

# 1.3 Supported Deployment Models

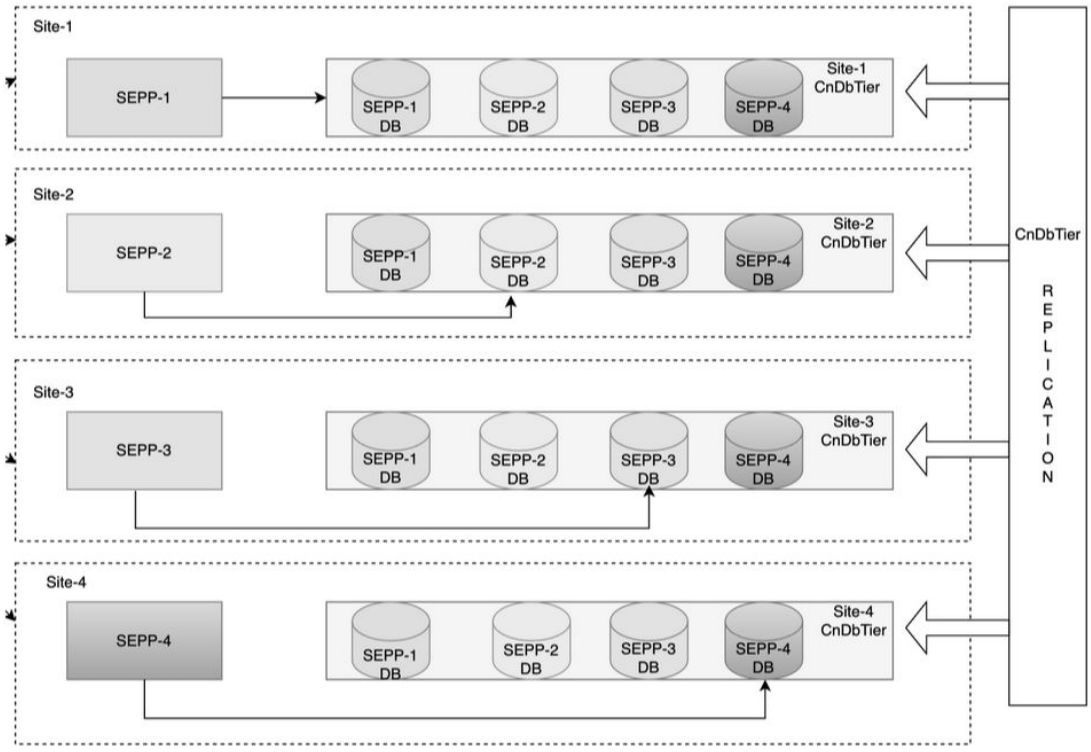
The following deployment models are supported by SEPP:

- Single Cluster, Single Instance (Single SEPP instance on dedicated cnDBTier instance)
- Single Cluster, Multiple Instances (Multiple SEPP instances on shared cnDBTier instance)

## 1.3.1 Single Cluster, Single Instance (Single SEPP Instance on Dedicated cnDBTier Instance)

This deployment model has dedicated cnDBTier for each SEPP in a cluster.

**Figure 1-1 Single Cluster, Single Instance (Single SEPP Instance on Dedicated cnDBTier Instance)**





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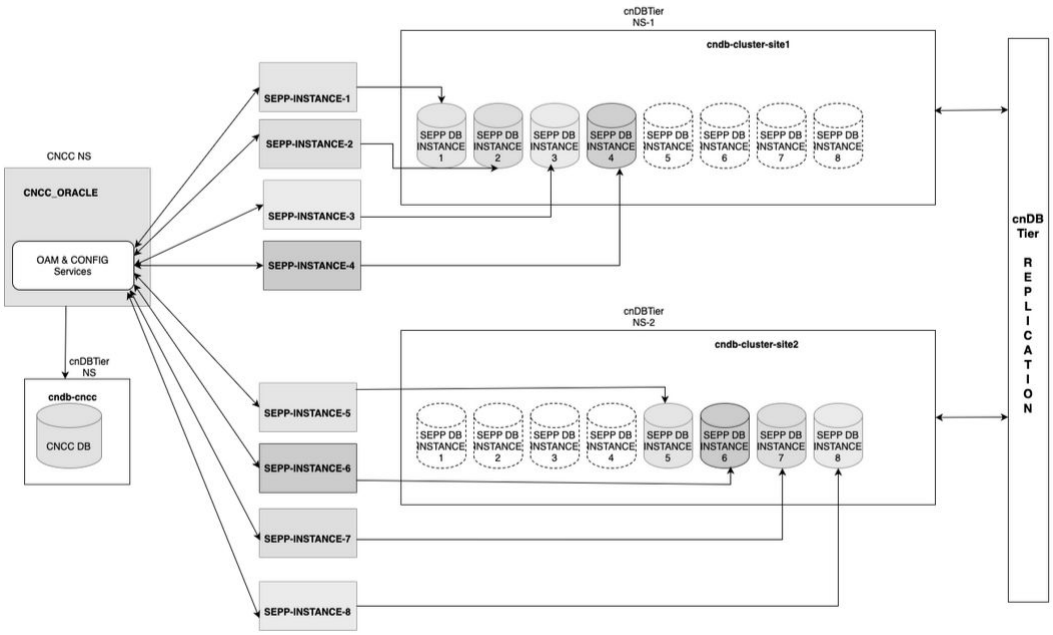
The deployment model has the following characteristics:

- Dedicated SEPP and cnDBTier. Only single instance of NF is supported.
- CNC Console shares the cnDBTier with NF.
- Any failure in cnDBTier impacts only that SEPP.
- SEPP and cnDBTier upgrade and rollback are seamless and easy to maintain.

## 1.3.2 Single Cluster, Multiple Instances (Multiple SEPP Instances on Shared cnDBTier Instance)

This deployment model allows multiple SEPP instances to be deployed on a shared cnDBTier instance.

**Figure 1-2 Single Cluster, Multiple Instance (multiple SEPP instances on shared cnDBTier instance)**




The deployment model has the following characteristics:

- This approach optimizes resource utilization and can lead to considerable resource efficiency.
- Data access for each SEPP instance is restricted through the use of distinct logins and credentials during deployment.
- 1+1 GR redundancy only is supported with not more than 4 SEPP instances in one cluster.
- This deployment model can only be used for SEPP instances deployed on the same CNE cluster.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# 1.4 Oracle Error Correction Policy

The table below outlines the key details for the current and past releases, their General Availability (GA) dates, and the end dates for the Error Correction Grace Period.

**Table 1-1 Oracle Error Correction Policy**

| Cloud Native Core Release Number | General Availability (GA) Date | Error Correction Grace Period End Date |
|---|---|---|
| 3.25.2.200.0 | April 2026 | April 2026 |
| 3.25.2.100.0 | November 2025 | November 2026 |
| 3.25.1.200.0 | July 2025 | July 2026 |
| 3.25.1.100.0 | April 2025 | April 2026 |

**Note**

- For the latest patch releases, see their corresponding *Oracle Communications Cloud Native Core Release Notes.*
- For a release, Sev1 and Critical Patch Update (CPU) patches are supported for 12 months. For more information, see Oracle Communications Cloud Native Core and Network Analytics Error Correction Policy.

# 1.5 Oracle Open Source Support Policies

Oracle Communications Cloud Native Core uses open source technology governed by the Oracle Open Source Support Policies. For more information, see Oracle Open Source Support Policies.


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# 2 Installing SEPP

This chapter provides information about installing SEPP using Command Line Interface (CLI) procedures. CLI provides an interface to run various commands required for SEPP deployment processes.

The SEPP installation is supported over the following platforms:

- Oracle Communications Cloud Native Core, Cloud Native Environment (CNE). For more information about CNE, see *Oracle Communications Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide*.
- Oracle Cloud Infrastructure (OCI). For more information, see *Oracle Communications Cloud Native Core, OCI Deployment Guide*.
- General Kubernetes environment.

> **Note**
>
> SEPP supports fresh installation, and it can also be upgraded. For more information on how to upgrade SEPP, see Upgrading SEPP section.

The user can install either SEPP or Roaming Hub and Hosted SEPP. The installation procedure comprises of prerequisites, predeployment configuration, installation, and postinstallation tasks. You must perform the installation tasks in the same sequence as outlined in the following table:

**Table 2-1 SEPP or Roaming Hub and Hosted SEPP Installation Sequence**

| Task | Sub tasks | Applicable for SEPP Installation (CNE Deployment) | Applicable for Roaming Hub and Hosted SEPP Installation (CNE Deployment) | Applicable for OCI Deployment |
|---|---|---|---|---|
| Prerequisites: This section describes how to set up the installation environment. | Prerequisites | Yes | Yes | Yes |
| - | Software Requirements | Yes | Yes | Yes |
| - | Environment Setup Requirements | Yes | Yes | Yes |
| - | Resource Requirements | SEPP Resource Requirements | Roaming Hub or Hosted SEPP Resource Requirements | SEPP Resource Requirements |


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**Table 2-1 (Cont.) SEPP or Roaming Hub and Hosted SEPP Installation Sequence**

| Task | Sub tasks | Applicable for SEPP Installation (CNE Deployment) | Applicable for Roaming Hub and Hosted SEPP Installation (CNE Deployment) | Applicable for OCI Deployment |
|---|---|---|---|---|
| Preinstallation Tasks: This section describes how to create namespace and database and configure Kubernetes secrets. | Preinstallation Tasks | Yes | Yes | Yes |
| - | Downloading SEPP package | Yes | Yes | Yes |
| - | Pushing the SEPP Images to Customer Docker Registry | Yes | No | No |
| - | Pushing the Roaming Hub or Hosted SEPP Images to Customer Docker Registry | No | Yes | Yes |
| - | Pushing the SEPP Images to OCI Docker Registry | No | No | Yes |
| - | Verifying and Creating SEPP Namespace | Yes | Yes | Yes |
| - | Configuring Database, Creating Users, and Granting Permissions | Yes | Yes | Yes |
| - | Configuring Kubernetes Secrets for Accessing SEPP Database | Yes | Yes | Yes |
| - | Configuring Kubernetes Secret for Enabling HTTPS/ HTTP over TLS | Yes | Yes | Yes |
| Installation Tasks: This section describes how to download the SEPP package, install SEPP, and verify the installation. | Installation Tasks | | | |


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**Table 2-1 (Cont.) SEPP or Roaming Hub and Hosted SEPP Installation Sequence**

| Task | Sub tasks | Applicable for SEPP Installation (CNE Deployment) | Applicable for Roaming Hub and Hosted SEPP Installation (CNE Deployment) | Applicable for OCI Deployment |
|---|---|---|---|---|
| Installing SEPP / Roaming Hub | Installing SEPP/ Roaming Hub/ Hosted SEPP | Installing SEPP | Installing Roaming Hub or Hosted SEPP | Installing SEPP |
| Verifying SEPP Installation | Verifying SEPP Installation | Yes | Yes | Yes |
| PodDisruptionBudget Kubernetes Resource | PodDisruptionBudget Kubernetes Resource | Yes | Yes | Yes |
| Customizing SEPP | Customizing SEPP | Yes | Yes | Yes |
| Upgrading SEPP | Upgrading SEPP | Yes | Yes | Yes |
| Rollback SEPP deployment | Rollback SEPP deployment | Yes | Yes | Yes |
| Uninstalling SEPP | Uninstalling SEPP | Yes | Yes | Yes |
| Fault Recovery | Fault Recovery | Yes | Yes | Yes |

# 2.1 Prerequisites

Before installing and configuring SEPP, ensure that the following prerequisites are met.

## 2.1.1 Software Requirements

This section lists the software that must be installed before installing SEPP:

> **Note**
>
> Table 2-2 and Table 2-3 offer a comprehensive list of software necessary for the proper functioning of BSF during deployment. However, these tables are indicative, and the software used can vary based on the customer's specific requirements and solution.
>
> The **Software Requirement** column in Table 2-2 and Table 2-3 indicates one of the following:
>
> - Mandatory: Absolutely essential; the software cannot function without it.
> - Recommended: Suggested for optimal performance or best practices but not strictly necessary.
> - Conditional: Required only under specific conditions or configurations.
> - Optional: Not essential; can be included based on specific use cases or preferences.


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**Table 2-2 Preinstalled Software Versions**

| Software | 25.2.2xx | 25.2.1xx | 25.1.2xx | Software Requirement | Usage Description |
|---|---|---|---|---|---|
| Kubernetes | 1.34.1 | 1.33.1 | 1.32.0 | Mandatory | Kubernetes orchestrates scalable, automated NF deployments for high availability and efficient resource utilization.<br>**Impact**:<br>Preinstallation is required. Without orchestration capabilities, deploying and managing network functions (NFs) can become complex, leading to inefficient resource utilization and potential downtime. |
| Helm | 3.19.1 | 3.18.x | 3.17.1 | Mandatory | Helm, a package manager, simplifies deploying and managing NFs on Kubernetes with reusable, versioned charts for easy automation and scaling.<br>**Impact**:<br>Preinstallation is required. Without this capability, management of NF versions and configurations becomes time-consuming and error-prone, impacting deployment consistency. |
| Podman | 5.2.2 | 5.2.2 | 5.2.2 | Recommended | Podman is a part of Oracle Linux. It manages and runs containerized NFs without requiring a daemon, offering flexibility and compatibility with Kubernetes.<br>**Impact**:<br>Preinstallation is required. Without efficient container management, the development and deployment of NFs could become cumbersome, impacting agility. |

To check the current CNE, Helm, Kubernetes, or Podman version installed, run the following commands:

```
echo $OCCNE_VERSION
```

```
helm version
```

```
kubectl version
```

```
podman version
```


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> **Note**
>
> This guide covers the installation instructions for SEPP when Podman is the container platform with Helm as the Packaging Manager. For non-CNE, the operator can use commands based on their deployed Container Runtime Environment, see *Oracle Communications Cloud Native Core, Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide*.

> **Note**
>
> Podman version or docker version based on the container engine installed.

If you are deploying SEPP in a cloud native environment, these following additional software are to be installed before installing SEPP.

**Table 2-3 Additional Software Versions**

| Software | 25.2.2xx | 25.2.1xx | 25.1.2xx | Software Requirement | Usage Description |
|---|---|---|---|---|---|
| AlertManager | 0.28.0 | 0.28.0 | 0.28.0 | Recommended | Alertmanager is a component that works in conjunction with Prometheus to manage and dispatch alerts. It handles the routing and notification of alerts to various receivers.<br>**Impact**:<br>Not implementing alerting mechanisms can lead to delayed responses to critical issues, potentially resulting in service outages or degraded performance. |
| Calico | 3.30.3 | 3.29.3 | 3.29.1 | Recommended | Calico provides networking and security for NFs in Kubernetes, ensuring scalable, policy-driven connectivity.<br>**Impact**:<br>Calico is a popular Container Network Interface (CNI) and CNI is mandatory for the functioning of 5G NFs. Without a CNI plugin, the network could witness security vulnerabilities and inadequate traffic management, impacting the reliability of NF communications. |
| cinder-csi-plugin | 1.33.0 | 1.32.0 | 1.32.0 | Mandatory | Cinder CSI (Container Storage Interface) plugin is used for provisioning and managing block storage in Kubernetes. It is often used in OpenStack environments to provide persistent storage for containerized applications<br>**Impact**:<br>Without the CSI plugin, provisioning block storage for NFs would be manual and inefficient, complicating storage management. |


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**Table 2-3 (Cont.) Additional Software Versions**

| Software | 25.2.2xx | 25.2.1xx | 25.1.2xx | Software Requirement | Usage Description |
|---|---|---|---|---|---|
| containerd | 2.1.4 | 2.0.5 | 1.7.24 | Recommended | Containerd manages container lifecycles to run NFs efficiently in Kubernetes.<br>**Impact**:<br>A lack of a reliable container runtime could lead to performance issues and instability in NF operations. |
| CoreDNS | 1.12.0 | 1.12.0 | 1.11.13 | Recommended | CoreDNS is the DNS server in Kubernetes, which provides DNS resolution services within the cluster.<br>**Impact**:<br>DNS is an essential part of deployment. Without proper service discovery, NFs would struggle to communicate with each other, leading to connectivity issues and operational failures. |
| Fluentd | 1.17.1 | 1.17.1 | 1.17.1 | Recommended | Fluentd is an open source data collector that streamlines data collection and consumption, ensuring improved data utilization and comprehension.<br>**Impact**:<br>Not utilizing centralized logging can hinder the ability to track NF activity and troubleshoot issues effectively, complicating maintenance and support. |
| Grafana | 7.5.17 (OCI Grafana) | 7.5.17 (OCI Grafana) | 9.5.3 | Recommended | Grafana is a popular open source platform for monitoring and observability. It provides a user-friendly interface for creating and viewing dashboards based on various data sources.<br>**Impact**:<br>Without visualization tools, interpreting complex metrics and gaining insights into NF performance would be cumbersome, affecting effective management. |
| Jaeger | 1.72.0 | 1.69.0 | 1.65.0 | Recommended | Jaeger provides distributed tracing for 5G NFs, enabling performance monitoring and troubleshooting across microservices.<br>**Impact**:<br>Not utilizing distributed tracing may hinder the ability to diagnose performance bottlenecks, making it challenging to optimize NF interactions and user experience. |
| Kyverno | 1.15.0 | 1.13.4 | 1.13.4 | Recommended | Kyverno is a Kubernetes policy engine that allows to manage and enforce policies for resource configurations within a Kubernetes cluster.<br>**Impact**:<br>Without the policy enforcement, there could be misconfigurations, resulting in security risks and instability in NF operations, affecting reliability. |


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**Table 2-3 (Cont.) Additional Software Versions**

| Software | 25.2.2xx | 25.2.1xx | 25.1.2xx | Software Requirement | Usage Description |
|---|---|---|---|---|---|
| MetalLB | 0.15.2 | 0.14.4 | 0.14.4 | Recommended | MetalLB is used as a load balancing solution in CNE, which is mandatory for the solution to work. MetalLB provides load balancing and external IP management for 5G NFs in Kubernetes environments.<br>**Impact**:<br>Without load balancing, traffic distribution among NFs may be inefficient, leading to potential bottlenecks and service degradation. |
| metrics-server | 0.7.2 | 0.7.2 | 0.7.2 | Recommended | Metrics server is used in Kubernetes for collecting resource usage data from pods and nodes.<br>**Impact**:<br>Without resource metrics, auto-scaling and resource optimization would be limited, potentially leading to resource contention or underutilization. |
| Multus | 4.2.1-thick | 4.1.3 | 4.1.3 | Recommended | Multus enables multiple network interfaces in Kubernetes pods, allowing custom configurations and isolated paths for advanced use cases such as NF deployments, ultimately supporting traffic segregation.<br>**Impact**:<br>Without this capability, connecting NFs to multiple networks could be limited, impacting network performance and isolation. |
| OpenSearch | 2.18.0 | 2.19.1 | 2.15.0 | Recommended | OpenSearch provides scalable search and analytics for 5G NFs, enabling efficient data exploration and visualization.<br>**Impact**:<br>Without a robust analytics solution, there would be difficulties in identifying performance issues and optimizing NF operations, affecting overall service quality. |
| OpenSearch Dashboard | 2.18.0 | 2.19.1 | 2.15.0 | Recommended | OpenSearch dashboard visualizes and analyzes data for 5G NFs, offering interactive insights and custom reporting.<br>**Impact**:<br>Without visualization capabilities, understanding NF performance metrics and trends would be difficult, limiting informed decision making. |


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**Table 2-3 (Cont.) Additional Software Versions**

| Software | 25.2.2xx | 25.2.1xx | 25.1.2xx | Software Requirement | Usage Description |
|---|---|---|---|---|---|
| Prometheus | 3.6.0 | 3.4.1 | 3.2.0 | Mandatory | Prometheus is a popular open source monitoring and alerting toolkit. It collects and stores metrics from various sources and allows for alerting and querying.<br>**Impact**:<br>Not employing this monitoring solution could result in a lack of visibility into NF performance, making it difficult to troubleshoot issues and optimize resource usage. |
| prometheus-kube-state-metric | 2.16.0 | 2.16.0 | 2.15.0 | Recommended | Kube-state-metrics is a service that generates metrics about the state of various resources in a Kubernetes cluster. It's commonly used for monitoring and alerting purposes.<br>**Impact**:<br>Without these metrics, monitoring the health and performance of NFs could be challenging, making it harder to proactively address issues. |
| prometheus-node-exporter | 1.9.1 | 1.9.1 | 1.8.2 | Recommended | Prometheus Node Exporter collects hardware and OS-level metrics from Linux hosts.<br>**Impact**:<br>Without node-level metrics, visibility into infrastructure performance would be limited, complicating the identification of resource bottlenecks. |
| Prometheus Operator | 0.83.0 | 0.83.0 | 0.80.1 | Recommended | The Prometheus Operator is used for managing Prometheus monitoring systems in Kubernetes. Prometheus Operator simplifies the configuration and management of Prometheus instances.<br>**Impact**:<br>Not using this operator could complicate the setup and management of monitoring solutions, increasing the risk of missed performance insights. |
| rook | 1.16.7 | 1.16.7 | 1.16.6 | Mandatory | Rook is the Ceph orchestrator for Kubernetes that provides storage solutions. It is used in BareMetal CNE solution.<br>**Impact**:<br>Not utilizing rook could increase the complexity of deploying and managing ceph, making it difficult to scale storage solutions in a Kubernetes environment. |
| snmp-notifier | 2.0.0 | 2.0.0 | 1.6.1 | Recommended | snmp-notifier sends SNMP alerts for 5G NFs, providing real-time notifications for network events.<br>**Impact**:<br>Without SNMP notifications, proactive monitoring of NF health and performance could be compromised, delaying response to critical issues. |


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**Table 2-3 (Cont.) Additional Software Versions**

| Software | 25.2.2xx | 25.2.1xx | 25.1.2xx | Software Requirement | Usage Description |
|---|---|---|---|---|---|
| Velero | 1.13.2 | 1.13.2 | 1.13.2 | Recommended | Velero backs up and restores Kubernetes clusters for 5G NFs, ensuring data protection and disaster recovery.<br>**Impact**:<br>Without backup and recovery capabilities, customers would witness a risk of data loss and extended downtime, requiring a full cluster reinstall in case of failure or upgrade. |

**Important**

If you are using NRF with SEPP, install it before proceeding with the SEPP installation. SEPP 25.2.2xx supports NRF 25.2.2xx.

## 2.1.2 Environment Setup Requirements

This section describes the environment setup requirements for installing SEPP.

### 2.1.2.1 Client Machine Requirements

This section describes the requirements for client machine, that is, the machine used by the user to run deployment commands.

The client machine should have:

- Helm repository configured.
  - To add a Helm repository, run the following command:

    ```
    helm repo add <helm-repo-name> <helm-repo-address>
    ```

    Where, `<helm-repo-name>` is the name of the Helm repository and `<helm-repo-address>` is the URL of the Helm repository.
  - To verify that Helm repository has been added successfully, run the following command:

    ```
    helm repo list
    ```

    The output must show the added Helm repository in the list.
- network access to the Helm repository and Docker image registry.
- network access to the Kubernetes cluster.
- required environment settings to run the `kubectl`, `podman`, or `docker` commands. The environment should have privileges to create namespace in the Kubernetes cluster.


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- Helm client installed with the push plugin. Configure the environment in such a manner that the `helm install` command deploys the software in the Kubernetes cluster.

### 2.1.2.2 Network Access Requirement

The Kubernetes cluster hosts must have network access to the following repositories:

- Local Helm repository: It contains the SEPP helm charts.
  To check if the Kubernetes cluster hosts have network access to the local helm repository, run the following command:

  ```
  helm repo update
  ```

- Local Docker image registry: It contains the SEPP Docker images.
  To check if the Kubernetes cluster hosts can access the local docker image registry, pull any image with an image-tag using either of the following commands:

  ```
  docker pull <docker-repo>/<image-name>:<image-tag>
  ```

  ```
  podman pull <podman-repo>/<image-name>:<image-tag>
  ```

  Where:

  - `<docker-repo>` is the IP address or host name of the Docker registry.
  - `<image-name>` is the Docker image name.
  - `<image-tag>` is the tag assigned to the Docker image used for the SEPP pod.

  Example:

  ```
  docker pull CUSTOMER_REPO/oc-app-info:25.2.200
  ```

  ```
  podman pull occne-repo-host:5000/occnp/oc-app-info:25.2.200
  ```

### 2.1.2.3 Server or Space Requirement

For information about server or space requirements, see *Oracle Communications Cloud Native Core, Cloud Native Environment Installation Upgrade, and Fault Recovery Guide*.

### 2.1.2.4 CNE Requirement

This section is applicable only if you are installing SEPP on Cloud Native Environment (CNE).

SEPP supports CNE 25.2.2xx, CNE 25.2.1xx, and CNE 25.1.2xx.

To check the CNE version, run the following command:

```
echo $OCCNE_VERSION
```

For more information about CNE, see *Oracle Communications Cloud Native Core, Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide*.


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### 2.1.2.5 cnDBTier Requirement

SEPP supports cnDBTier 25.2.2xx, 25.2.1xx, and 25.1.2xx. cnDBTier must be configured and running before installing SEPP. For more information about cnDBTier installation, see *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*.

For more information about the cnDBTier customizations required for SEPP, see the `ocsepp_dbtier_cnDBTier_version_custom_values_SEPP_version.yaml` file.

If you have already installed a version of cnDBTier, run the following command to upgrade your current cnDBTier installation using the `ocsepp_dbtier_<version>_custom_values_<version>.yaml` file:

```
helm upgrade <release-name> <chart-path> -f <cndb-custom-values.yaml> -n
<namespace>
```

For example:

```
helm upgrade mysql-cluster occndbtier/ -f
ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml -n ocsepp-cndb
```

For more information about cnDBTier installation and upgrade procedure, see *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*.

> **Note**
>
> In georedundant deployment, a dedicated cnDBTier must be installed and configured for each SEPP site.

> **Note**
>
> Starting from 25.1.100 onwards, the `ndb_allow_copying_alter_table` in cnDBTier should be set to OFF.

### 2.1.2.6 OSO Requirement

SEPP supports Operations Services Overlay (OSO) 25.2.2xx for common operation services (Prometheus and components such as alertmanager, pushgateway) on a Kubernetes cluster, which does not have these common services. For more information about OSO installation, see *Oracle Communications Cloud Native Core, Operations Services Overlay Installation and Upgrade Guide.*

### 2.1.2.7 CNC Console Requirements

SEPP supports CNC Console 25.2.2xx to configure and manage Network Functions. For more information, see *Oracle Communications Cloud Native Configuration Console Installation, Upgrade, and Fault Recovery Guide.*


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### 2.1.2.8 OCCM Requirements

SEPP supports OCCM 25.2.2xx. To support automated certificate lifecycle management, SEPP integrates with Oracle Communications Cloud Native Core, Certificate Management (OCCM) in compliance with 3GPP security recommendations. For more information about OCCM in SEPP, see the "Support for Automated Certificate Lifecycle Management" section in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*.

For more information about OCCM, see the following guides:

- *Oracle Communications Cloud Native Core, Certificate Manager Installation, Upgrade, and Fault Recovery Guide*
- *Oracle Communications Cloud Native Core, Certificate Manager User Guide*

### 2.1.2.9 OCI Requirements

SEPP can be deployed on OCI.

For more information about OCI deployment, see *Oracle Communications Cloud Native Core, OCI Adaptor Deployment Guide*.

## 2.1.3 SEPP Resource Requirements

This section lists the resource requirements to install and run SEPP.

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

### 2.1.3.1 SEPP Services

The following table lists resource requirement for SEPP Services:

**Table 2-4 SEPP Services**

| Service Name | CPU | CPU | Memory(GB) | Memory(GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** |
| Helm Test | 1 | 1 | 1 | 1 | 1 | 1 | 70Mi | 1 |
| <helm-release-name>-n32-ingress-gateway | 6 | 6 | 5 | 5 | 7 | 7 | 1 | 2 |


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**Table 2-4 (Cont.) SEPP Services**

| Service Name | CPU | CPU | Memory(GB) | Memory(GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max | Min | Max | Min(Gi) | Max(Gi) |
| <helm-release-name>-n32-egress-gateway | 5 | 5 | 5 | 5 | 7 | 7 | 1 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 5 | 5 | 5 | 5 | 7 | 7 | 1 | 2 |
| <helm-release-name>-plmn-egress-gateway | 5 | 5 | 5 | 5 | 7 | 7 | 1 | 1 |
| <helm-release-name>-pn32f-svc | 5 | 5 | 8 | 8 | 7 | 7 | 2 | 2 |
| <helm-release-name>-cn32f-svc | 5 | 5 | 8 | 8 | 7 | 7 | 2 | 2 |
| <helm-release-name>-cn32c-svc | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-pn32c-svc | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-config-mgr-svc | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| <helm-release-name>-sepp-nrf-client-nfdiscovery | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |


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**Table 2-4 (Cont.) SEPP Services**

| Service Name | CPU | CPU | Memory(GB) | Memory(GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** |
| <helm-release-name>-sepp-nrf-client-nfmanagement | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-ocpm-config | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 |
| <helm-release-name>-appinfo | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-perf-info | 2 | 2 | 4 | 4 | 2 | 2 | 1 | 1 |
| <helm-release-name>-nf-mediation | 8 | 8 | 8 | 8 | 2 | 2 | NA | NA |
| <helm-release-name>-coherence-svc | 4 | 4 | 4 | 4 | 1 | 1 | 2 | 2 |
| <helm-release-name>-alternate-route | 2 | 2 | 4 | 4 | 2 | 2 | NA | NA |
| Total | 60 | 60 | 70 | 70 | 63 | 63 | 17.7 Gi | 20 |

Where,

- #: <helm-release-name> will be prefixed in each microservice name. Example: if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc".
- Init-service container's and Common Configuration Client Hook's resources are not counted because the container gets terminated after initialization completes.
- **Helm Hooks Jobs:** These are pre and post jobs that are invoked during installation, upgrade, rollback, and uninstallation of the deployment. These are short span jobs that get terminated after the deployment completion.


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- **Helm Test Job:** This job is run on demand when the Helm test command is initiated. This job runs the helm test and stops after completion. These are short-lived jobs that get terminated after the deployment is done. They are not part of active deployment resource, but are considered only during helm test procedures.
- If you enable Message Feed feature at Ingress Gateway and Egress Gateway, approximately 33% pod capacity is impacted.

> **Note**
>
> If you enable Message Feed feature at Ingress Gateway and Egress Gateway, approximately 33% pod capacity is impacted.

### 2.1.3.2 Upgrade

Following is the resource requirement for upgrading SEPP:

**Table 2-5 Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** |
| Helm test | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Helm Hook | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <helm-release-name>-n32-ingress-gateway | 6 | 6 | 5 | 5 | 0 | 0 | 1 | 1 |
| <helm-release-name>-n32-egress-gateway | 5 | 5 | 5 | 5 | 0 | 0 | 1 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 5 | 5 | 5 | 5 | 0 | 0 | 1 | 1 |
| <helm-release-name>-plmn-egress-gateway | 5 | 5 | 5 | 5 | 0 | 0 | 1 | 1 |
| <helm-release-name>-pn32f-svc | 5 | 5 | 8 | 8 | 0 | 0 | 2 | 2 |


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**Table 2-5 (Cont.) Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max | Min | Max | Min(Gi) | Max(Gi) |
| <helm-release-name>-cn32f-svc | 5 | 5 | 8 | 8 | 0 | 0 | 2 | 2 |
| <helm-release-name>-cn32c-svc | 2 | 2 | 2 | 2 | 0 | 0 | 1 | 1 |
| <helm-release-name>-pn32c-svc | 2 | 2 | 2 | 2 | 0 | 0 | 1 | 1 |
| <helm-release-name>-config-mgr-svc | 2 | 2 | 2 | 2 | 0 | 0 | 1 | 1 |
| <helm-release-name>-sepp-nrf-client-nfdiscovery | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 1 |
| <helm-release-name>-sepp-nrf-client-nfmanagement | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| <helm-release-name>-ocpm-config | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| <helm-release-name>-appinfo | 1 | 1 | 1 | 2 | 0 | 0 | 1 | 1 |
| <helm-release-name>-perf-info | 2 | 2 | 200Mi | 4 | 0 | 0 | 1 | 1 |
| <helm-release-name>-nf-mediation | 8 | 8 | 8 | 8 | 0 | 0 | 1 | 1 |


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**Table 2-5 (Cont.) Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** |
| <helm-release-name>-coherence-svc | 1 | 1 | 2 | 2 | 0 | 0 | NA | NA |
| <helm-release-name>-alternate-route | 2 | 2 | 4 | 4 | 0 | 0 | NA | NA |
| Total | 54 | 54 | 61.2 | 66 | 0 | 0 | 17 Gi | 17 Gi |

**Note**

- `MaxSurge` is set to 0.
- <helm-release-name> is the Helm release name. For example, if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc".

## 2.1.3.3 Common Services Container

Following is the resource requirement for Common Services Container:

**Table 2-6 Common Services Container**

| Container Name | CPU | Memory (GB) | Kubernetes Init Container |
|---|---|---|---|
| init-service | 1 | 1 | Y |
| common_config_hook | 1 | 1 | N |
| mediation_hook | 2 | 2 | N |

- **Init Container service:** Ingress or Egress Gateway services use this container to get OCSEPP Private Key or Certificate and CA Root Certificate for TLS during start up.
- **Common Configuration Hook:** It is used for creating database for common service configuration.

## 2.1.3.4 Service Mesh Sidecar

SEPP leverages the Platform Service Mesh (for example, Aspen Service Mesh) for all internal and external TLS communication. If ASM Sidecar injection is enabled during SEPP deployment or upgrade, this container is injected to each pod (or selected pod, depending on the option chosen during deployment or upgrade). These containers stay till pod or deployment exist.


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**Table 2-7 Service Mesh Sidecar**

| Service Name | CPU | CPU | Memory (GB | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max | Min(Mi) | Max(Gi) |
| <helm-release-name>-n32-ingress-gateway | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-n32-egress-gateway | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-plmn-egress-gateway | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-pn32f-svc | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-cn32f-svc | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-cn32c-svc | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-pn32c-svc | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-config-mgr-svc | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-sepp-nrf-client-nfdiscovery | 1 | 1 | 1 | 1 | 70 | 1 |


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**Table 2-7 (Cont.) Service Mesh Sidecar**

| Service Name | CPU | CPU | Memory (GB | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| <helm-release-name>-sepp-nrf-client-nfmanagement | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-ocpm-config | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-appinfo | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-perf-info | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-nf-mediation | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-coherence-svc | 1 | 1 | 1 | 1 | NA | NA |
| <helm-release-name>-alternate-route | 1 | 1 | 1 | 1 | NA | NA |
| Total | 17 | 17 | 17 | 17 | 1050 Mi | 15 Gi |

**Note**

<helm-release-name> is the Helm release name. For example, if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc".

## 2.1.3.5 Debug Tool Container

The Debug Tool provides third-party troubleshooting tools for debugging the runtime issues in a lab environment. If Debug Tool Container injection is enabled during SEPP deployment or upgrade, this container is injected to each SEPP pod (or selected pod, depending on the option chosen during deployment or upgrade). These containers stay till pod or deployment exist. For more information about configuring Debug Tool, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide*.


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**Table 2-8 Debug Tool Container**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min(Gi) | Max(Gi) | Min(Mi) | Max(Mi) |
| <helm-release-name>-n32-ingress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-n32-egress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-plmn-ingress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-plmn-egress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-pn32f-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-cn32f-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-cn32c-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-pn32c-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-config-mgr-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-sepp-nrf-client-nfdiscovery | 0.5 | 1 | 4 | 4 | 512 | 512 |


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**Table 2-8 (Cont.) Debug Tool Container**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** | **Min(Mi)** | **Max(Mi)** |
| <helm-release-name>-sepp-nrf-client-nfmanagement | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-ocpm-config | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-appinfo | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-perf-info | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-nf-mediation | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-coherence-svc | NA | NA | NA | NA | NA | NA |
| <helm-release-name>-alternate-route | 0.5 | 1 | 4 | 4 | NA | NA |
| Total | 8 | 16 | 64 | 64 | 7680 Mi | 7680 Mi |

**Note**

<helm_release_name> is the Helm release name. For example, if Helm release name is "ocsepp-release", then plmn-egress-gateway microservice name will be "ocsepp-release-plmn-egress-gateway".

## 2.1.3.6 SEPP Hooks

Following is the resource requirement for SEPP Hooks:


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**Table 2-9 SEPP Hooks**

| Hook Name | CPU | | Memory (GB) | |
|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max |
| <helm-release-name>-update-db-pre-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-update-db-<post-install> | 1 | 2 | 1 | 2 |
| <helm-release-name>-update-db-<pre-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-update-db-<post-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-update-db-<pre-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-update-db-<post-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32f-svc-pre-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32f-svc-post-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32f-svc-<pre-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32f-svc-<post-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32f-svc-<pre-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32f-svc-<post-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32f-svc-pre-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32f-svc-<post-install> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32f-svc-<pre-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32f-svc-<post-upgrade> | 1 | 2 | 1 | 2 |


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**Table 2-9 (Cont.) SEPP Hooks**

| Hook Name | CPU | | Memory (GB) | |
|---|---|---|---|---|
| <helm-release-name>-cn32f-svc-<pre-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32f-svc-<post-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32c-svc-pre-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32c-svc-<post-install> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32c-svc-<pre-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32c-svc-<post-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32c-svc-<pre-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-cn32c-svc-<post-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32c-svc-pre-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32c-svc-<post-install> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32c-svc-<pre-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32c-svc-<post-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32c-svc-<pre-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-pn32c-svc-<post-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-config-mgr-svc-pre-install | 1 | 2 | 1 | 2 |
| <helm-release-name>-config-mgr-svc-<post-install> | 1 | 2 | 1 | 2 |
| <helm-release-name>-config-mgr-svc-<pre-upgrade> | 1 | 2 | 1 | 2 |


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**Table 2-9 (Cont.) SEPP Hooks**

| Hook Name | CPU | | Memory (GB) | |
|---|---|---|---|---|
| <helm-release-name>-config-mgr-svc-<post-upgrade> | 1 | 2 | 1 | 2 |
| <helm-release-name>-config-mgr-svc-<pre-rollback> | 1 | 2 | 1 | 2 |
| <helm-release-name>-config-mgr-svc-<post-rollback> | 1 | 2 | 1 | 2 |

> **Note**
>
> <helm-release-name> is the Helm release name.

## 2.1.3.7 CNC Console

CNC Console Oracle Communications Cloud Native Configuration Console (CNC Console) is a Graphical User Interface (GUI) for NFs and Oracle Communications Cloud Native Core, Cloud Native Environment (CNE) common services.

For information about CNC Console resources required by SEPP, see "CNC Console Resource Requirement" section in *Oracle Communications Cloud Native Configuration Console Installation, Upgrade, and Fault Recovery Guide*.

## 2.1.3.8 cnDBTier

cnDBTier is the geodiverse database layer provided as part of the Cloud Native Environment. It provides persistent storage for the state data and subscriber data in a cloud environment. Any Kubernetes environment with dynamic Kubernetes storage supports cnDBTier installation.

**Table 2-10 cnDBTier**

| Detailed DBTier Resources | vCPU | Memory (GB) | Max Replicas | Total vCPU | Total Memory (GB) | PVC Storage (GB) | Ephemeral Storage (GB) |
|---|---|---|---|---|---|---|---|
| SQL - Replication (ndbmysqld) StatefulSet | 3 | 4 | 4 | 12 | 16 | 60 | 0.1 |
| MGMT (ndbmgmd) StatefulSet | 3 | 4 | 2 | 6 | 8 | 15 | 0.1 |
| DB (ndbmtd) StatefulSet | 4 | 12 | 4 | 16 | 48 | 60 | 0.1 |


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**Table 2-10 (Cont.) cnDBTier**

| Detailed DBTier Resources | vCPU | Memory (GB) | Max Replicas | Total vCPU | Total Memory (GB) | PVC Storage (GB) | Ephemeral Storage (GB) |
|---|---|---|---|---|---|---|---|
| db-backup-manager-svc | 1 | 1 | 1 | 1 | 1 | 0 | 0.1 |
| db-replication-svc | 1 | 2 | 1 | 1 | 2 | 60 | 0.1 |
| db-monitor-svc | 4 | 4 | 1 | 4 | 4 | 0 | 0.1 |
| db-connectivity-service | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQL - Access (ndbappmysqld) StatefulSet | 5 | 10 | 2 | 10 | 20 | 20 | 0.1 |
| grrecoveryresources | 2 | 12 | 2 | 4 | 24 | 0 | 0 |
| Total | | | 17 | 54 | 123 | 215 | 0.7 |

**Note**

- Node profiles in the above tables are for two-site replication cnDBTier clusters. Modify the `ndbmysqld` and `Replication Service` pods based on the number of georeplication sites.
- In case, any of the service requires a vertical scaling of any of their PVC, see the respective sub-section in "Vertical Scaling" section in *Oracle Communications Cloud Native Core, cnDBTier User Guide*.
- PVC shrinking (downsizing) is not supported. It is recommended to retain the existing vertically scaled up PVC sizes, eventhough cnDBTier is rolledback to previous releases.

For information about cnDBTier resources required by SEPP, see "Resource Requirement" section in *Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*.

### 2.1.3.8.1 cnDBTier Sidecars

The following table indicates the sidecars for cnDBTier services.

**Table 2-11 Sidecars per cnDBTier Service**

| Service Name | init-sidecar | db-executor-svc | init-discover-sql-ips | db-infra-monitor-svc |
|---|---|---|---|---|
| MGMT (ndbmgmd) | No | No | No | Yes |


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**Table 2-11 (Cont.) Sidecars per cnDBTier Service**

| Service Name | init-sidecar | db-executor-svc | init-discover-sql-ips | db-infra-monitor-svc |
|---|---|---|---|---|
| DB (ndbmtd) | No | Yes | No | Yes |
| SQL (ndbmysqld) | Yes | No | No | Yes |
| SQL (ndbappmysqld) | Yes | No | No | Yes |
| Monitor Service (db-monitor-svc) | No | No | No | No |
| Backup Manager Service (db-backup-manager-svc) | No | No | No | No |
| Replication Service | No | No | Yes | No |

**Table 2-12 cnDBTier Additional Containers**

| Sidecar | CPU/Pod | | Memory/Pod (in Gi) | | PVC Size (in Gi) | | Ephemeral Storage | |
|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | PVC1 | PVC2 | Min (Mi) | Max(Gi )Min (Mi) |
| db-executor-svc | 1 | 1 | 2 | 2 | NA | NA | 90 | 1 |
| init-sidecar | 0.1 | 0.1 | 025 | 0.25 | NA | NA | 90 | 1 |
| init-discover-sql-ips | 0.2 | 0.2 | 0.5 | 0.5 | NA | NA | 90 | 1 |
| db-infra-monitor-svc | 0.1 | 0.1 | 0.25 | 0.25 | NA | NA | 90 | 1 |

### 2.1.3.8.2 Service Mesh Sidecar

If SEPP is deployed with ASM, the user must add the following annotation in the `ocsepp_dbtier_CNDBTIER_VERSION_custom_values_SEPP_VERSION.yaml` file.

\

**Table 2-13 Default Values for Service Mesh Specific Annotations**

| Parameter Name | Annotations |
|---|---|
| `db-monitor-svc.podAnnotations` | traffic.sidecar.istio.io/excludeInboundPorts: "8081,8080" |

Example:

```
db-monitor-svc:
  podAnnotations:
    traffic.sidecar.istio.io/excludeInboundPorts: "8081,8080"
```


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## 2.1.4 Roaming Hub Resource Requirements

This section lists the resource requirements to install and run Roaming Hub.

### 2.1.4.1 Roaming Hub SEPP Services

The following table lists resource requirement for SEPP Services for Roaming Hub:

**Table 2-14 SEPP Services for Roaming Hub**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| Helm Test | 1 | 1 | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-n32-ingress-gateway | 6 | 6 | 5 | 5 | 2 | 2 | 1 | 2 |
| <helm-release-name>-n32-egress-gateway | 5 | 5 | 5 | 5 | 2 | 2 | 1 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 5 | 5 | 5 | 5 | 2 | 2 | 1 | 2 |
| <helm-release-name>-plmn-egress-gateway | 5 | 5 | 5 | 5 | 2 | 2 | 2 | 2 |
| <helm-release-name>-pn32f-svc | 5 | 5 | 8 | 8 | 2 | 2 | 2 | 2 |
| <helm-release-name>-cn32f-svc | 5 | 5 | 8 | 8 | 2 | 2 | 1 | 1 |
| <helm-release-name>-cn32c-svc | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |


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**Table 2-14 (Cont.) SEPP Services for Roaming Hub**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| <helm-release-name>-pn32c-svc | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-config-mgr-svc | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| <helm-release-name>-perf-info | 2 | 2 | 200Mi | 4 | 2 | 2 | 1 | 1 |
| <helm-release-name>-nf-mediation | 8 | 8 | 8 | 8 | 2 | 2 | NA | NA |
| <helm-release-name>-alternate-route | 2 | 2 | 4 | 4 | 2 | 2 | NA | NA |
| Total | 50 | 50 | 55.2 | 59 | 24 | 24 | 12.70 | 15 Gi |

**Note**

- #: <helm-release-name> will be prefixed in each microservice name. Example: if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc"
- Init-service container's and Common Configuration Client Hook's resources are not counted because the container gets terminated after initialization completes.
- **Helm Hooks Jobs:** These are pre and post jobs that are invoked during installation, upgrade, rollback, and uninstallation of the deployment. These are short span jobs that get terminated after the deployment completion.
- **Helm Test Job:** This job is run on demand when the helm test command is initiated. This job runs the helm test and stops after completion. These are short-lived jobs that get terminated after the deployment is done. They are not part of active deployment resource, but are considered only during helm test procedures.

## 2.1.4.2 Upgrade

Following is the resource requirement for upgrading Roaming Hub or Hosted SEPP:


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**Table 2-15 Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| Helm test | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Helm Hook | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <helm-release-name>-n32-ingress-gateway | 6 | 6 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-n32-egress-gateway | 5 | 5 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 5 | 5 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-plmn-egress-gateway | 5 | 5 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-pn32f-svc | 5 | 5 | 8 | 8 | 1 | 2 | 70 | 1 |
| <helm-release-name>-cn32f-svc | 5 | 5 | 8 | 8 | 1 | 3 | 70 | 1 |
| <helm-release-name>-cn32c-svc | 2 | 2 | 2 | 2 | 1 | 1 | 70 | 1 |
| <helm-release-name>-pn32c-svc | 2 | 2 | 2 | 2 | 1 | 1 | 70 | 1 |
| <helm-release-name>-config-mgr-svc | 2 | 2 | 2 | 2 | 1 | 1 | 70 | 1 |


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**Table 2-15 (Cont.) Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| <helm-release-name>-perf-info | 2 | 2 | 200Mi | 4 | 1 | 1 | 70 | 1 |
| <helm-release-name>-nf-mediation | 8 | 8 | 8 | 8 | 1 | 1 | 70 | 1 |
| Total | 47 | 47 | 50.2 | 54 | 11 | 18 | 770 Mi | 11 Gi |

> **Note**
>
> <helm-release-name> is the Helm release name. For example, if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc"

### 2.1.4.3 Common Services Container

Following is the resource requirement for Common Services Container:

**Table 2-16 Common Services Container**

| Container Name | CPU | Memory (GB) | Kubernetes Init Container |
|---|---|---|---|
| init-service | 1 | 1 | Y |
| common_config_hook | 1 | 1 | N |

> **Note**
>
> - **Init Container service:** Ingress or Egress Gateway services use this container to get SEPP Private Key or Certificate and CA Root Certificate for TLS during start up.
> - **Common Configuration Hook:** It is used for creating database for common service configuration.


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### 2.1.4.4 ASM Sidecar

> **Note**
>
> ASM is not supported in Roaming Hub mode .

### 2.1.4.5 Debug Tool Container

The Debug Tool provides third-party troubleshooting tools for debugging the runtime issues in a lab environment. If Debug Tool Container injection is enabled during Roaming Hub/Hosted SEPP deployment or upgrade, this container is injected to each Roaming Hub/Hosted SEPP pod (or selected pod, depending on the option chosen during deployment or upgrade). These containers stay till pod or deployment exist. For more information about configuring the Debug Tool, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide*.

**Table 2-17 Debug Tool Container**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** | **Min(Mi)** | **Max(Mi)** |
| Helm Test | 0 | 0 | 0 | 0 | 512 | 512 |
| <helm-release-name>-n32-ingress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-n32-egress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-plmn-ingress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-plmn-egress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-pn32f-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-cn32f-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |


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**Table 2-17 (Cont.) Debug Tool Container**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min(Gi) | Max(Gi) | Min(Mi) | Max(Mi) |
| <helm-release-name>-cn32c-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-pn32c-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-config-mgr-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-perf-info | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-nf-mediation | 0.5 | 1 | 4 | 4 | 512 | 512 |
| Total | 5.5 | 11 | 44 | 44 | 6144 Mi | 6144 Mi |

> **Note**
>
> <helm-release-name> is the Helm release name. Example: if helm release name is "ocsepp", then cn32f-svc microservice name will be "ocsepp-cn32f-svc"

## 2.1.4.6 SEPP Hooks

Following is the resource requirement for SEPP Hooks.

**Table 2-18 SEPP Hooks**

| Hook Name | CPU | CPU | Memory (GB) | Memory (GB) |
|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max |
| <helm-release-name>-update-db-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<pre-upgrade> | 1 | 1 | 1 | 1 |


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**Table 2-18 (Cont.) SEPP Hooks**

| Hook Name | CPU | CPU | Memory (GB) | Memory (GB) |
|---|---|---|---|---|
| <helm-release-name>-update-db-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-post-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<post-install> | 1 | 1 | 1 | 1 |


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**Table 2-18 (Cont.) SEPP Hooks**

| Hook Name | CPU | CPU | Memory (GB) | Memory (GB) |
|---|---|---|---|---|
| <helm-release-name>-cn32c-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<post-rollback> | 1 | 1 | 1 | 1 |


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> **Note**
>
> <helm-release-name> is the Helm release name.

## 2.1.5 Hosted SEPP Resource Requirements

This section lists the resource requirements to install and run Hosted SEPP.

### 2.1.5.1 Hosted SEPP Services

The following table lists resource requirement for SEPP Services for Hosted SEPP:

**Table 2-19 SEPP Services for Hosted SEPP**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| Helm Test | 1 | 1 | 1 | 1 | 1 | 1 | 70 | 1 |
| <helm-release-name>-n32-ingress-gateway | 6 | 6 | 5 | 5 | 2 | 2 | 1 | 2 |
| <helm-release-name>-n32-egress-gateway | 5 | 5 | 5 | 5 | 2 | 2 | 1 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 5 | 5 | 5 | 5 | 2 | 2 | 1 | 2 |
| <helm-release-name>-plmn-egress-gateway | 5 | 5 | 5 | 5 | 2 | 2 | 2 | 2 |
| <helm-release-name>-pn32f-svc | 5 | 5 | 8 | 8 | 2 | 2 | 2 | 2 |
| <helm-release-name>-cn32f-svc | 5 | 5 | 8 | 8 | 2 | 2 | 1 | 1 |


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**Table 2-19 (Cont.) SEPP Services for Hosted SEPP**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| <helm-release-name>-cn32c-svc | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-pn32c-svc | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| <helm-release-name>-config-mgr-svc | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| <helm-release-name>-perf-info | 2 | 2 | 200Mi | 4 | 2 | 2 | 1 | 1 |
| <helm-release-name>-alternate-route | 2 | 2 | 4 | 4 | 2 | 2 | NA | NA |
| Total | 42 | 42 | 47.2 | 51 | 22 | 22 | 12.70 | 15 Gi |

**Note**

- #: <helm-release-name> will be prefixed in each microservice name. Example: if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc"
- Init-service container's and Common Configuration Client Hook's resources are not counted because the container gets terminated after initialization completes.
- **Helm Hooks Jobs:** These are pre and post jobs that are invoked during installation, upgrade, rollback, and uninstallation of the deployment. These are short span jobs that get terminated after the deployment completion.
- **Helm Test Job:** This job is run on demand when the helm test command is initiated. This job runs the helm test and stops after completion. These are short-lived jobs that get terminated after the deployment is done. They are not part of active deployment resource, but are considered only during helm test procedures.

## 2.1.5.2 Upgrade

Following is the resource requirement for upgrading Hosted SEPP:


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**Table 2-20 Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min** | **Max** | **Min** | **Max** | **Min(Mi)** | **Max(Gi)** |
| Helm test | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Helm Hook | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <helm-release-name>-n32-ingress-gateway | 6 | 6 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-n32-egress-gateway | 5 | 5 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-plmn-ingress-gateway | 5 | 5 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-plmn-egress-gateway | 5 | 5 | 5 | 5 | 1 | 2 | 70 | 1 |
| <helm-release-name>-pn32f-svc | 5 | 5 | 8 | 8 | 1 | 2 | 70 | 1 |
| <helm-release-name>-cn32f-svc | 5 | 5 | 8 | 8 | 1 | 3 | 70 | 1 |
| <helm-release-name>-cn32c-svc | 2 | 2 | 2 | 2 | 1 | 1 | 70 | 1 |
| <helm-release-name>-pn32c-svc | 2 | 2 | 2 | 2 | 1 | 1 | 70 | 1 |
| <helm-release-name>-config-mgr-svc | 2 | 2 | 2 | 2 | 1 | 1 | 70 | 1 |


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**Table 2-20 (Cont.) Upgrade**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | POD | POD | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max | Min | Max | Min(Mi) | Max(Gi) |
| <helm-release-name>-perf-info | 2 | 2 | 200Mi | 4 | 1 | 1 | 70 | 1 |
| Total | 47 | 47 | 50.2 | 54 | 11 | 18 | 700 Mi | 10 Gi |

> **Note**
>
> <helm-release-name> is the Helm release name. For example, if Helm release name is "ocsepp-release", then cn32f-svc microservice name will be "ocsepp-release-cn32f-svc"

### 2.1.5.3 Common Services Container

Following is the resource requirement for Common Services Container:

**Table 2-21 Common Services Container**

| Container Name | CPU | Memory (GB) | Kubernetes Init Container |
|---|---|---|---|
| init-service | 1 | 1 | Y |
| common_config_hook | 1 | 1 | N |

> **Note**
>
> - **Init Container service:** Ingress or Egress Gateway services use this container to get SEPP Private Key or Certificate and CA Root Certificate for TLS during start up.
> - **Common Configuration Hook:** It is used for creating database for common service configuration.

### 2.1.5.4 ASM Sidecar

> **Note**
>
> ASM is not supported in Hosted SEPP mode.

### 2.1.5.5 Debug Tool Container


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The Debug Tool provides third-party troubleshooting tools for debugging the runtime issues in a lab environment. If Debug Tool Container injection is enabled during Roaming Hub/Hosted SEPP deployment or upgrade, this container is injected to each Roaming Hub/Hosted SEPP pod (or selected pod, depending on the option chosen during deployment or upgrade). These containers stay till pod or deployment exist.

For more information about configuring the Debug Tool, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide*.

**Table 2-22 Debug Tool Container**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| **Min/Max** | **Min** | **Max** | **Min(Gi)** | **Max(Gi)** | **Min(Mi)** | **Max(Mi)** |
| Helm Test | 0 | 0 | 0 | 0 | 512 | 512 |
| <helm-release-name>-n32-ingress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-n32-egress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-plmn-ingress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-plmn-egress-gateway | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-pn32f-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-cn32f-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-cn32c-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-pn32c-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-config-mgr-svc | 0.5 | 1 | 4 | 4 | 512 | 512 |


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**Table 2-22 (Cont.) Debug Tool Container**

| Service Name | CPU | CPU | Memory (GB) | Memory (GB) | Ephemeral Storage | Ephemeral Storage |
|---|---|---|---|---|---|---|
| Min/Max | Min | Max | Min(Gi) | Max(Gi) | Min(Mi) | Max(Mi) |
| <helm-release-name>-perf-info | 0.5 | 1 | 4 | 4 | 512 | 512 |
| <helm-release-name>-nf-mediation | 0.5 | 1 | 4 | 4 | 512 | 512 |
| Total | 5 | 10 | 40 | 40 | 6144 Mi | 6144 Mi |

> **Note**
>
> <helm-release-name> is the Helm release name. Example: if helm release name is "ocsepp", then cn32f-svc microservice name will be "ocsepp-cn32f-svc"

## 2.1.5.6 SEPP Hooks

Following is the resource requirement for SEPP Hooks.

**Table 2-23 SEPP Hooks**

| Hook Name | CPU | CPU | Memory (GB) | Memory (GB) |
|---|---|---|---|---|
| Min/Max | Min | Max | Min | Max |
| <helm-release-name>-update-db-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-update-db-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-pre-install | 1 | 1 | 1 | 1 |


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**Table 2-23 (Cont.) SEPP Hooks**

| Hook Name | CPU | CPU | Memory (GB) | Memory (GB) |
|---|---|---|---|---|
| <helm-release-name>-pn32f-svc-post-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32f-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32f-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-cn32c-svc-<post-rollback> | 1 | 1 | 1 | 1 |


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**Table 2-23 (Cont.) SEPP Hooks**

| Hook Name | CPU | CPU | Memory (GB) | Memory (GB) |
|---|---|---|---|---|
| <helm-release-name>-pn32c-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-pn32c-svc-<post-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-pre-install | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<post-install> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<pre-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<post-upgrade> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<pre-rollback> | 1 | 1 | 1 | 1 |
| <helm-release-name>-config-mgr-svc-<post-rollback> | 1 | 1 | 1 | 1 |

**Note**

<helm-release-name> is the Helm release name.

# 2.2 Installation Sequence

This section describes preinstallation, installation, and postinstallation tasks for SEPP (SEPP, Roaming Hub, or Hosted SEPP).


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## 2.2.1 Preinstallation Tasks

Before installing SEPP, perform the tasks described in this section.

### 2.2.1.1 Downloading SEPP package

Perform the following procedure to download the Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP) release package from My Oracle Support:

1. Log in to My Oracle Support using the appropriate credentials.
2. Click the **Patches & Updates** tab to locate the patch.
3. In **Patch Search** console, click the **Product or Family (Advanced)** tab.
4. Enter `Oracle Communications Cloud Native Core - 5G` in **Product** field and select the product from the Product drop-down list.
5. From the **Release** drop-down, select **"Oracle Communications Cloud Native Core Security Edge Protection Proxy <release_number>".**

   Where, <release-number> indicates the required release number of Cloud Native Core, Security Edge Protection Proxy.
6. Click **Search.** The Patch Advanced Search Results list appears.
7. Select the required patch from the list. The **Patch Details** window appears.
8. Click **Download**. File Download window appears.
9. Click the `<p********_<release_number>_Tekelec>.zip` file to download the package. Where, <p********> is the MOS patch number and <release_number> is the release number of SEPP.

### 2.2.1.2 Pushing the SEPP Images to Customer Docker Registry

SEPP deployment package includes ready-to-use images and Helm charts to orchestrate containers in Kubernetes.

The following table lists the docker images for SEPP:

**Table 2-24 SEPP Images**

| Services | Image | Tag |
|---|---|---|
| <helm-release-name>-alternate_route | alternate_route | 25.2.110 |
| <helm-release-name>-common_config_hook | common_config_hook | 25.2.200 |
| <helm-release-name>-configurationinit | configurationinit | 25.2.200 |
| <helm-release-name>-mediation/ocmed-nfmediation | mediation/ocmed-nfmediation | 25.2.203 |
| <helm-release-name>-nf_test | nf_test | 25.2.205 |
| <helm-release-name>-nrf-client | nrf-client | 25.2.203 |
| <helm-release-name>-occnp/oc-app-info | occnp/oc-app-info | 25.2.208 |
| <helm-release-name>-occnp/oc-config-server | occnp/oc-config-server | 25.2.208 |
| <helm-release-name>-performance | occnp/oc-perf-info | 25.2.208 |
| <helm-release-name>-ocdebugtool/ocdebug-tools | ocdebugtool/ocdebug-tools | 25.2.204 |


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**Table 2-24 (Cont.) SEPP Images**

| Services | Image | Tag |
|---|---|---|
| <helm-release-name>-ocegress_gateway | ocegress_gateway | 25.2.110 |
| <helm-release-name>-ocingress_gateway | ocingress_gateway | 25.2.110 |
| <helm-release-name>-oocsepp-cn32c-svc | ocsepp-cn32c-svc | 25.2.200 |
| <helm-release-name>- ocsepp-cn32f-svc | ocsepp-cn32f-svc | 25.2.200 |
| <helm-release-name>-ocsepp-coherence-svc | ocsepp-coherence-svc | 25.2.200 |
| <helm-release-name>-ocsepp-config-mgr-svc | ocsepp-config-mgr-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pn32c-svc | ocsepp-pn32c-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pn32f-svc | ocsepp-pn32f-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pre-install-hook | ocsepp-pre-install-hook | 25.2.200 |
| <helm-release-name>-ocsepp-update-db | ocsepp-update-db | 25.2.200 |
| <helm-release-name>-ocsepp-configurationupdate | configurationupdate | 25.2.200 |

To push the images to the registry:

1. Navigate to the location where you want to install SEPP. Unzip the SEPP release package to retrieve the following CSAR package.
   The SEPP package is as follows:

   ```
   ReleaseName_csar_Releasenumber.zip
   ```

   Where:

   - ReleaseName is a name that is used to track this installation instance.
   - Releasenumber is the release number.

     For example:

   ```
   ocsepp_csar_25.2.200_0_0.zip
   ```

2. Unzip the SEPP package file to get SEPP docker image tar file:

   ```
   unzip ocsepp_csar_Releasenumber.zip
   ```

   For example:

   ```
   unzip ocsepp_csar_25.2.200_0_0.zip
   ```

3. The directory `ocsepp_csar_25.2.200_0_0.zip` consists of the following:

   ```
   ├─── Definitions
   │    ├─── ocsepp_cne_compatibility.yaml
   │    └─── ocsepp.yaml
   ├─── Files
   │    ├─── alternate_route-25.2.110.tar
   │    ├─── ChangeLog.txt
   │    ├─── common_config_hook-25.2.200.tar
   │    ├─── configurationinit-25.2.200.tar
   │    ├─── Helm
   ```


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```
│   │   ├── ocsepp-25.2.200.tgz
│   │   ├── ocsepp-network-policy-25.2.200.tgz
│   │   └── ocsepp-servicemesh-config-25.2.200.tgz
│   ├── Licenses
│   ├── mediation-ocmed-nfmediation-25.2.203.tar
│   ├── nf_test-25.2.205.tar
│   ├── nrf-client-25.2.203.tar
│   ├── occnp-oc-app-info-25.2.208.tar
│   ├── occnp-oc-config-server-25.2.208.tar
│   ├── occnp-oc-perf-info-25.2.208.tar
│   ├── ocdebugtool-ocdebug-tools-25.2.204.tar
│   ├── ocegress_gateway-25.2.110.tar
│   ├── ocingress_gateway-25.2.110.tar
│   ├── ocsepp-cn32c-svc-25.2.200.tar
│   ├── ocsepp-cn32f-svc-25.2.200.tar
│   ├── ocsepp-coherence-svc-25.2.200.tar
│   ├── ocsepp-config-mgr-svc-25.2.200.tar
│   ├── ocsepp-pn32c-svc-25.2.200.tar
│   ├── ocsepp-pn32f-svc-25.2.200.tar
│   ├── ocsepp-pre-install-hook-25.2.200.tar
│   ├── ocsepp-update-db-25.2.200.tar
│   ├── Oracle.cert
│   └── Tests
├── ocsepp.mf
├── Scripts
│   ├── ocsepp_alertrules_promha_25.2.200.yaml
│   ├── ocsepp_configuration_openapi_25.2.200.json
│   ├── ocsepp_custom_values_25.2.200.yaml
│   ├── ocsepp_custom_values_roaming_hub_25.2.200.yaml
│   ├── ocsepp_dashboard_25.2.200.json
│   ├── ocsepp_dashboard_promha_25.2.200.json
│   ├── ocsepp_network_policies_custom_values_25.2.200.yaml
│   ├── ocsepp-servicemesh-config-25.2.200.tgz
│   ├── ocsepp_alertrules_25.2.200.yaml
│   ├── ocsepp_mib_25.2.200.mib
│   ├── ocsepp_mib_tc_25.2.200.mib
│   └── toplevel.mib
│   └── ocsepp_oci_alertrules_25.2.200.zip
│   └── ocsepp_oci_dashboard_25.2.200.json
│   └── ocsepp_rollback_schema_25.2.200.sql
│   └── ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml
│   └── ocsepp_single_service_account_config_25.2.200.yaml
│   └── ocsepp_alertrules_rh_hosted_25.2.200.yaml
│   └── ocsepp_alertrules_promha_rh_hosted_25.2.200.yaml
└── TOSCA-Metadata
    └── TOSCA.meta
```

4. Open the `Files` folder and based on the container engine installed, run one of the following command to load the SEPP images. Load all the images that are listed in SEPP Images (2-18) Table:

   ```
   podman load --input /IMAGE_PATH/<microservicename-releasenumber>.tar

   docker load --input /IMAGE_PATH/<microservicename-releasenumber>.tar
   ```

   Where, IMAGE_PATH is the location where the SEPP docker image tar file is archived.

   Sample command:

   ```
   podman load --input /IMAGE_PATH/ocsepp-pn32c-svc-25.2.200.tar
   ```


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> **Note**
>
> The docker/podman load command needs to be executed seperately for each tar file/docker image.

5. Run one of the following commands to verify that the image is loaded:

```
docker images | grep ocsepp
```

```
podman images | grep ocsepp
```

> **Note**
>
> Verify the list of images shown in the output with the list of images shown in the table SEPP Images. If the list does not match, reload the image tar file.

6. Run one of the following commands to tag the images to the registry:

```
docker tag <image-name>:<image-tag> <docker-repo>/<image-name>:<image-tag>
```

```
podman tag <image-name>:<image-tag> <docker-repo>/<image-name>:<image-tag>
```

Sample Tag commands:

```
podman tag alternate_route:25.2.110 <customer repo>/
alternate_route:25.2.110
podman tag common_config_hook:25.2.200 <customer repo>/
common_config_hook:25.2.200
podman tag configurationinit:25.2.200 <customer repo>/
configurationinit:25.2.200
podman tag configurationupdate:25.2.200 <customer repo>/
configurationupdate:25.2.200
podman tag mediation/ocmed-nfmediation:25.2.203 <customer repo>/mediation/
ocmed-nfmediation:25.2.203
podman tag nf_test:25.2.205 <customer repo>/nf_test:25.2.205
podman tag nrf-client:25.2.203 <customer repo>/nrf-client:25.2.203
podman tag occnp/oc-app-info:25.2.208 <customer repo>/occnp/oc-app-
info:25.2.208
podman tag occnp/oc-config-server:25.2.208 <customer repo>/occnp/oc-config-
server:25.2.208
podman tag occnp/oc-perf-info:25.2.208 <customer repo>/occnp/oc-perf-
info:25.2.208
podman tag ocdebugtool/ocdebug-tools:25.2.204 <customer repo>/ocdebugtool/
ocdebug-tools:25.2.204
podman tag ocegress_gateway:25.2.110 <customer repo>/
ocegress_gateway:25.2.110
podman tag ocingress_gateway:25.2.110 <customer repo>/
ocingress_gateway:25.2.110
podman tag ocsepp-cn32c-svc:25.2.200 <customer repo>/ocsepp-cn32c-
svc:25.2.200
```


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```
podman tag ocsepp-cn32f-svc:25.2.200 <customer repo>/ocsepp-cn32f-
svc:25.2.200
podman tag ocsepp-coherence-svc:25.2.200 <customer repo>/ocsepp-coherence-
svc:25.2.200
podman tag ocsepp-config-mgr-svc:25.2.200 <customer repo>/ocsepp-config-
mgr-svc:25.2.200
podman tag ocsepp-pn32c-svc:25.2.200 <customer repo>/ocsepp-pn32c-
svc:25.2.200
podman tag ocsepp-pn32f-svc:25.2.200 <customer repo>/ocsepp-pn32f-
svc:25.2.200
podman tag ocsepp-pre-install-hook:25.2.200 <customer repo>/ocsepp-pre-
install-hook:25.2.200
podman tag ocsepp-update-db:25.2.200 <customer repo>/ocsepp-update-
db:25.2.200
```

7. Run one of the following commands to push the image to the registry:

```
docker push <docker-repo>/<image-name>:<image-tag>

podman push <docker-repo>/<image-name>:<image-tag>
```

Sample push commands:

```
podman push occne-repo-host:5000/alternate_route:25.2.110
podman push occne-repo-host:5000/common_config_hook:25.2.200
podman push occne-repo-host:5000/configurationinit:25.2.200
podman push occne-repo-host:5000/configurationupdate:25.2.200
podman push occne-repo-host:5000/mediation/ocmed-nfmediation:25.2.203
podman push occne-repo-host:5000/nf_test:25.2.205
podman push occne-repo-host:5000/nrf-client:25.2.203
podman push occne-repo-host:5000/occnp/oc-app-info:25.2.208
podman push occne-repo-host:5000/occnp/oc-config-server:25.2.208
podman push occne-repo-host:5000/occnp/oc-perf-info:25.2.208
podman push occne-repo-host:5000/ocdebugtool/ocdebug-tools:25.2.204
podman push occne-repo-host:5000/ocegress_gateway:25.2.110
podman push occne-repo-host:5000/ocingress_gateway:25.2.110
podman push occne-repo-host:5000/ocsepp-cn32c-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-cn32f-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-coherence-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-config-mgr-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pn32c-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pn32f-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pre-install-hook:25.2.200
podman push occne-repo-host:5000/ocsepp-update-db:25.2.200
```

> **Note**
>
> It is recommended to configure the Docker certificate before running the push command to access customer registry through HTTPS, otherwise docker push command may fail.


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# 2.2.1.3 Pushing the Roaming Hub and Hosted SEPP Images to Customer Docker Registry

Roaming Hub and Hosted SEPP deployment package includes ready-to-use images and Helm charts to orchestrate containers in Kubernetes.

The following table lists the docker images for Roaming Hub and Hosted SEPP:

**Table 2-25 Roaming Hub and Hosted SEPP**

| Services | Image | Tag |
|---|---|---|
| <helm-release-name>-alternate_route | alternate_route | 25.2.110 |
| <helm-release-name>-common_config_hook | common_config_hook | 25.2.200 |
| <helm-release-name>-configurationinit | configurationinit | 25.2.200 |
| <helm-release-name>-mediation/ocmed-nfmediation | mediation/ocmed-nfmediation | 25.2.203 |
| <helm-release-name>-nf_test | nf_test | 25.2.205 |
| <helm-release-name>-performance | occnp/oc-perf-info | 25.2.200 |
| <helm-release-name>-ocdebugtool/ocdebug-tools | ocdebugtool/ocdebug-tools | 25.2.204 |
| <helm-release-name>-ocegress_gateway | ocegress_gateway | 25.2.110 |
| <helm-release-name>-ocingress_gateway | ocingress_gateway | 25.2.110 |
| <helm-release-name>-oocsepp-cn32c-svc | ocsepp-cn32c-svc | 25.2.200 |
| <helm-release-name>- ocsepp-cn32f-svc | ocsepp-cn32f-svc | 25.2.200 |
| <helm-release-name>-ocsepp-coherence-svc | ocsepp-coherence-svc | 25.2.200 |
| <helm-release-name>-ocsepp-config-mgr-svc | ocsepp-config-mgr-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pn32c-svc | ocsepp-pn32c-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pn32f-svc | ocsepp-pn32f-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pre-install-hook | ocsepp-pre-install-hook | 25.2.200 |
| <helm-release-name>-ocsepp-update-db | ocsepp-update-db | 25.2.200 |
| <helm-release-name>-ocsepp-configurationupdate | configurationupdate | 25.2.200 |

> **Note**
>
> <helm-release-name> will be prefixed in each microservice name. Example: if Helm release name is "ocsepp", then cn32f-svc microservice name will be "ocsepp-cn32f-svc".

To push the images to the registry:

1. Navigate to the location where you want to install SEPP. Unzip the SEPP release package (<p********>_<release_number>_Tekelec.zip) to retrieve the following CSAR package. The SEPP package is as follows:

   ```
   ReleaseName_csar_Releasenumber.zip
   ```


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Where:

- ReleaseName is a name that is used to track this installation instance.
- Releasenumber is the release number.

  For example:

```
ocsepp_csar_25_2_200_0_0.zip
```

2. Unzip the SEPP package file to get SEPP docker image tar file:

```
unzip ReleaseName_csar_Releasenumber.zip
```

   For example:

```
unzip ocsepp_csar_25_2_200_0_0.zip
```

3. The directory `ocsepp_csar_25_2_200_0_0.zip` consists of the following:

```
├─── Definitions
│    ├─── ocsepp_cne_compatibility.yaml
│    └─── ocsepp.yaml
├─── Files
│    ├─── alternate_route-25.2.110.tar
│    ├─── ChangeLog.txt
│    ├─── common_config_hook-25.2.200.tar
│    ├─── configurationinit-25.2.200.tar
│    ├─── Helm
│    │    ├─── ocsepp-25.2.200.tgz
│    │    ├─── ocsepp-network-policy-25.2.200.tgz
│    │    └─── ocsepp-servicemesh-config-25.2.200.tgz
│    ├─── Licenses
│    ├─── mediation-ocmed-nfmediation-25.3.203.tar
│    ├─── nf_test-25.2.205.tar
│    ├─── nrf-client-25.2.203.tar
│    ├─── occnp-oc-app-info-25.2.208.tar
│    ├─── occnp-oc-config-server-25.2.208.tar
│    ├─── occnp-oc-perf-info-25.2.200.tar
│    ├─── ocdebugtool-ocdebug-tools-25.2.204.tar
│    ├─── ocegress_gateway-25.2.110.tar
│    ├─── ocingress_gateway-25.2.110.tar
│    ├─── ocsepp-cn32c-svc-25.2.200.tar
│    ├─── ocsepp-cn32f-svc-25.2.200.tar
│    ├─── ocsepp-coherence-svc-25.2.200.tar
│    ├─── ocsepp-config-mgr-svc-25.2.200.tar
│    ├─── ocsepp-pn32c-svc-25.2.200.tar
│    ├─── ocsepp-pn32f-svc-25.2.200.tar
│    ├─── ocsepp-pre-install-hook-25.2.200.tar
│    ├─── ocsepp-update-db-25.2.200.tar
│    ├─── Oracle.cert
│    └─── Tests
├─── ocsepp.mf
├─── Scripts
│    ├─── ocsepp_alertrules_promha_25.2.200.yaml
│    ├─── ocsepp_configuration_openapi_25.2.200.json
│    ├─── ocsepp_custom_values_25.2.200.yaml
│    ├─── ocsepp_custom_values_roaming_hub_25.2.200.yaml
│    ├─── ocsepp_dashboard_25.2.200.json
│    ├─── ocsepp_dashboard_promha_25.2.200.json
│    ├─── ocsepp_network_policies_custom_values_25.2.200.yaml
```


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```
│   ├── ocsepp-servicemesh-config-25.2.200.tgz
│   ├── ocsepp_alertrules_25.2.200.yaml
│   ├── ocsepp_mib_25.2.200.mib
│   ├── ocsepp_mib_tc_25.2.200.mib
│   └── toplevel.mib
│   └── ocsepp_oci_alertrules_25.2.200.zip
│   └── ocsepp_oci_dashboard_25.2.200.json
│   └── ocsepp_rollback_schema_25.2.200.sql
│   └── ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml
│   └── ocsepp_single_service_account_config_25.2.200.yaml
│   └── ocsepp_alertrules_rh_hosted_25.2.200.yaml
│   └── ocsepp_alertrules_promha_rh_hosted_25.2.200.yaml
└── TOSCA-Metadata
    └── TOSCA.meta
```

4. Open the `Files` folder based on the container engine installed, run one of the following command to load the SEPP images. Load all the images that are listed in Roaming Hub or Hosted SEPP(2-19) Table:

   ```
   podman load --input /IMAGE_PATH/<microservicename-releasenumber>.tar

   docker load --input /IMAGE_PATH/<microservicename-releasenumber>.tar
   ```

   Where, IMAGE_PATH is the location where the SEPP docker image tar file is archived.

   Sample command:

   ```
   podman load --input /IMAGE_PATH/ocsepp-pn32c-svc-25.2.200.tar
   ```

   > **Note**
   >
   > The docker/ podman load command needs to be executed seperately for each tar file/ docker image.

5. Run one of the following commands to verify that the image is loaded:

   ```
   docker images | grep ocsepp


   podman images | grep ocsepp
   ```

   > **Note**
   >
   > Verify the list of images shown in the output with the list of images shown in the table SEPP Images. If the list does not match, reload the image tar file.

6. Run one of the following commands to tag the images to the registry:

   ```
   docker tag <image-name>:<image-tag> <docker-repo>/<image-name>:<image-tag>


   podman tag <image-name>:<image-tag> <docker-repo>/<image-name>:<image-tag>
   ```


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Sample Tag commands:

```
podman tag alternate_route:25.2.110 <customer repo>/
alternate_route:25.2.110
podman tag common_config_hook:25.2.200 <customer repo>/
common_config_hook:25.2.200
podman tag configurationinit:25.2.200 <customer repo>/
configurationinit:25.2.200
podman tag configurationupdate:25.2.200 <customer repo>/
configurationupdate:25.2.200
podman tag mediation/ocmed-nfmediation:25.2.203 <customer repo>/mediation/
ocmed-nfmediation:25.2.203
podman tag nf_test:25.2.205 <customer repo>/nf_test:25.2.205
podman tag nrf-client:25.2.203 <customer repo>/nrf-client:25.2.203
podman tag occnp/oc-app-info:25.2.208 <customer repo>/occnp/oc-app-
info:25.2.208
podman tag occnp/oc-config-server:25.2.208 <customer repo>/occnp/oc-config-
server:25.2.208
podman tag occnp/oc-perf-info:25.2.200 <customer repo>/occnp/oc-perf-
info:25.2.200
podman tag ocdebugtool/ocdebug-tools:25.2.204 <customer repo>/ocdebugtool/
ocdebug-tools:25.2.204
podman tag ocegress_gateway:25.2.110 <customer repo>/
ocegress_gateway:25.2.110
podman tag ocingress_gateway:25.2.110 <customer repo>/
ocingress_gateway:25.2.110
podman tag ocsepp-cn32c-svc:25.2.200 <customer repo>/ocsepp-cn32c-
svc:25.2.200
podman tag ocsepp-cn32f-svc:25.2.200 <customer repo>/ocsepp-cn32f-
svc:25.2.200
podman tag ocsepp-coherence-svc:25.2.200 <customer repo>/ocsepp-coherence-
svc:25.2.200
podman tag ocsepp-config-mgr-svc:25.2.200 <customer repo>/ocsepp-config-
mgr-svc:25.2.200
podman tag ocsepp-pn32c-svc:25.2.200 <customer repo>/ocsepp-pn32c-
svc:25.2.200
podman tag ocsepp-pn32f-svc:25.2.200 <customer repo>/ocsepp-pn32f-
svc:25.2.200
podman tag ocsepp-pre-install-hook:25.2.200 <customer repo>/ocsepp-pre-
install-hook:25.2.200
podman tag ocsepp-update-db:25.2.200 <customer repo>/ocsepp-update-
db:25.2.200
```

7. Run one of the following commands to push the image to the registry:

```
docker push <docker-repo>/<image-name>:<image-tag>

podman push <docker-repo>/<image-name>:<image-tag>
```

Sample push commands:

```
podman push occne-repo-host:5000/alternate_route:25.2.110
podman push occne-repo-host:5000/common_config_hook:25.2.200
podman push occne-repo-host:5000/configurationinit:25.2.200
podman push occne-repo-host:5000/configurationupdate:25.2.200
```


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```
podman push occne-repo-host:5000/mediation/ocmed-nfmediation:25.2.203
podman push occne-repo-host:5000/nf_test:25.2.205
podman push occne-repo-host:5000/nrf-client:25.2.203
podman push occne-repo-host:5000/occnp/oc-app-info:25.2.208
podman push occne-repo-host:5000/occnp/oc-config-server:25.2.208
podman push occne-repo-host:5000/occnp/oc-perf-info:25.2.200
podman push occne-repo-host:5000/ocdebugtool/ocdebug-tools:25.2.204
podman push occne-repo-host:5000/ocegress_gateway:25.2.110
podman push occne-repo-host:5000/ocingress_gateway:25.2.110
podman push occne-repo-host:5000/ocsepp-cn32c-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-cn32f-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-coherence-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-config-mgr-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pn32c-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pn32f-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pre-install-hook:25.2.200
podman push occne-repo-host:5000/ocsepp-update-db:25.2.200
```

**Note**

- It is recommended to configure the Docker certificate before running the push command to access customer registry through HTTPS, otherwise, docker push command may fail.

## 2.2.1.4 Pushing the SEPP Images to OCI Docker Registry

SEPP deployment package includes ready-to-use images and Helm charts to orchestrate containers in Kubernetes.

The following table lists the docker images for SEPP:

**Table 2-26 SEPP Images**

| Services | Image | Tag |
|---|---|---|
| <helm-release-name>-alternate_route | alternate_route | 25.2.110 |
| <helm-release-name>-common_config_hook | common_config_hook | 25.2.200 |
| <helm-release-name>-configurationinit | configurationinit | 25.2.200 |
| <helm-release-name>-mediation/ocmed-nfmediation | mediation/ocmed-nfmediation | 25.2.203 |
| <helm-release-name>-nf_test | nf_test | 25.2.205 |
| <helm-release-name>-nrf-client | nrf-client | 25.2.203 |
| <helm-release-name>-occnp/oc-app-info | occnp/oc-app-info | 25.2.208 |
| <helm-release-name>-occnp/oc-config-server | occnp/oc-config-server | 25.2.208 |
| <helm-release-name>-performance | occnp/oc-perf-info | 25.2.208 |
| <helm-release-name>-ocdebugtool/ocdebug-tools | ocdebugtool/ocdebug-tools | 25.2.204 |
| <helm-release-name>-ocegress_gateway | ocegress_gateway | 25.2.110 |
| <helm-release-name>-ocingress_gateway | ocingress_gateway | 25.2.110 |
| <helm-release-name>-oocsepp-cn32c-svc | ocsepp-cn32c-svc | 25.2.200 |


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**Table 2-26 (Cont.) SEPP Images**

| Services | Image | Tag |
|---|---|---|
| <helm-release-name>- ocsepp-cn32f-svc | ocsepp-cn32f-svc | 25.2.200 |
| <helm-release-name>-ocsepp-coherence-svc | ocsepp-coherence-svc | 25.2.200 |
| <helm-release-name>-ocsepp-config-mgr-svc | ocsepp-config-mgr-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pn32c-svc | ocsepp-pn32c-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pn32f-svc | ocsepp-pn32f-svc | 25.2.200 |
| <helm-release-name>-ocsepp-pre-install-hook | ocsepp-pre-install-hook | 25.2.200 |
| <helm-release-name>-ocsepp-update-db | ocsepp-update-db | 25.2.200 |
| <helm-release-name>-ocsepp-configurationupdate | configurationupdate | 25.2.200 |

To push the images to the registry:

1. Navigate to the location where you want to install SEPP. Unzip the SEPP release package (<p********>_<release_number>_Tekelec.zip) to retrieve the following CSAR package. The SEPP package is as follows:

   ```
   ReleaseName_csar_Releasenumber.zip
   ```

   Where,

   - ReleaseName is a name that is used to track this installation instance.
   - Releasenumber is the release number.

     For example:

   ```
   ocsepp_csar_25_2_200_0_0.zip
   ```

2. Unzip the SEPP package file to get SEPP docker image tar file:

   ```
   unzip ocsepp_csar_Releasenumber.zip
   ```

   For example:

   ```
   unzip ocsepp_csar_25_2_200_0_0.zip
   ```

3. The directory `ocsepp_csar_25_2_200_0_0.zip` consists of the following:

   ```
   ├─── Definitions
   │    ├─── ocsepp_cne_compatibility.yaml
   │    └─── ocsepp.yaml
   ├─── Files
   │    ├─── alternate_route-25.2.110.tar
   │    ├─── ChangeLog.txt
   │    ├─── common_config_hook-25.2.200.tar
   │    ├─── configurationinit-25.2.200.tar
   │    ├─── Helm
   │    │    ├─── ocsepp-25.2.200.tgz
   │    │    ├─── ocsepp-network-policy-25.2.200.tgz
   │    │    └─── ocsepp-servicemesh-config-25.2.200.tgz
   │    ├─── Licenses
   │    ├─── mediation-ocmed-nfmediation-25.2.203.tar
   ```


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```
│   ├── nf_test-25.2.205.tar
│   ├── nrf-client-25.2.203.tar
│   ├── occnp-oc-app-info-25.2.208.tar
│   ├── occnp-oc-config-server-25.2.208.tar
│   ├── occnp-oc-perf-info-25.2.208.tar
│   ├── ocdebugtool-ocdebug-tools-25.2.204.tar
│   ├── ocegress_gateway-25.2.110.tar
│   ├── ocingress_gateway-25.2.110.tar
│   ├── ocsepp-cn32c-svc-25.2.200.tar
│   ├── ocsepp-cn32f-svc-25.2.200.tar
│   ├── ocsepp-coherence-svc-25.2.200.tar
│   ├── ocsepp-config-mgr-svc-25.2.200.tar
│   ├── ocsepp-pn32c-svc-25.2.200.tar
│   ├── ocsepp-pn32f-svc-25.2.200.tar
│   ├── ocsepp-pre-install-hook-25.2.200.tar
│   ├── ocsepp-update-db-25.2.200.tar
│   ├── Oracle.cert
│   └── Tests
├── ocsepp.mf

├── Scripts
│   ├── ocsepp_alertrules_promha_25.2.200.yaml
│   ├── ocsepp_configuration_openapi_25.2.200.json
│   ├── ocsepp_custom_values_25.2.200.yaml
│   ├── ocsepp_custom_values_roaming_hub_25.2.200.yaml
│   ├── ocsepp_dashboard_25.2.200.json
│   ├── ocsepp_dashboard_promha_25.2.200.json
│   ├── ocsepp_network_policies_custom_values_25.2.200.yaml
│   ├── ocsepp-servicemesh-config-25.2.200.tgz
│   ├── ocsepp_alertrules_25.2.200.yaml
│   ├── ocsepp_mib_25.2.200.mib
│   ├── ocsepp_mib_tc_25.2.200.mib
│   ├── toplevel.mib
│   ├── ocsepp_oci_alertrules_25.2.200.zip
│   ├── ocsepp_oci_dashboard_25.2.200.json
│   ├── ocsepp_rollback_schema_25.2.200.sql
│   ├── ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml
│   ├── ocsepp_single_service_account_config_25.2.200.yaml
│   ├── ocsepp_alertrules_rh_hosted_25.2.200.yaml
│   └── ocsepp_alertrules_promha_rh_hosted_25.2.200.yaml
└── TOSCA-Metadata
    └── TOSCA.meta
```

4. Open the `Files` folder and based on the container engine installed, run one of the following command to load the SEPP images. Load all the images that are listed in SEPP Images Table:

   ```
   podman load --input /IMAGE_PATH/<microservicename-releasenumber>.tar

   docker load --input /IMAGE_PATH/<microservicename-releasenumber>.tar
   ```

   Where, IMAGE_PATH is the location where the SEPP docker image tar file is archived.

   Sample command:

   ```
   podman load --input /IMAGE_PATH/ocsepp-pn32c-svc-25.2.200.tar
   ```

   > **Note**
   >
   > The docker/podman load command needs to be executed seperately for each tar file/docker image.


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5. Run one of the following commands to verify that the image is loaded:

```
docker images | grep ocsepp
```

```
podman images | grep ocsepp
```

> **Note**
>
> Verify the list of images shown in the output with the list of images shown in the table SEPP Images. If the list does not match, reload the image tar file.

6. Run the following commands to log in to the OCI Docker registry:

```
podman login -u <REGISTRY_USERNAME> -p <REGISTRY_PASSWORD> <REGISTRY_NAME>
```

```
docker login -u <REGISTRY_USERNAME> -p <REGISTRY_PASSWORD> <REGISTRY_NAME>
```

where,

- REGISTRY_NAME is `<Region_Key>.ocir.io`
- REGISTRY_USERNAME is `<Object Storage Namespace>/<identity_domain>/email_id`
- REGISTRY_PASSWORD is the Auth token generated by the user.

For more information about OCIR configuration and creating auth token, see *Cloud Native Core OCI Adaptor, NF Deployment in OCI Guide*.

- `<Object Storage Namespace>` is configured in OCI Console. To access it, navigate to **OCI Console> Governanace & Administration> Account Management> Tenenancy Details> Object Storage Namespace**.
- `<Identity Domain>` is the domain where the user currently is present.
- In OCI, each region is associated with a key. For the details about the `<Region_Key>`, refer to Regions and Availability Domains.

7. Run one of the following commands to tag the images to the registry:

```
docker tag <image-name>:<image-tag> <REGISTRY_NAME>/<Object Storage
Namespace>/<image-name>:<image-tag>
```

```
podman tag <image-name>:<image-tag> <REGISTRY_NAME>/<Object Storage
Namespace>/<image-name>:<image-tag>
```

Sample Tag commands:

```
podman tag alternate_route:25.2.110 <customer repo>/
alternate_route:25.2.110
podman tag common_config_hook:25.2.200 <customer repo>/
common_config_hook:25.2.200
podman tag configurationinit:25.2.200 <customer repo>/
```


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```
configurationinit:25.2.200
podman tag configurationupdate:25.2.200 <customer repo>/
configurationupdate:25.2.200
podman tag mediation/ocmed-nfmediation:25.2.203 <customer repo>/mediation/
ocmed-nfmediation:25.2.203
podman tag nf_test:25.2.205 <customer repo>/nf_test:25.2.205
podman tag nrf-client:25.2.203 <customer repo>/nrf-client:25.2.203
podman tag occnp/oc-app-info:25.2.208 <customer repo>/occnp/oc-app-
info:25.2.208
podman tag occnp/oc-config-server:25.2.208 <customer repo>/occnp/oc-config-
server:25.2.208
podman tag occnp/oc-perf-info:25.2.208 <customer repo>/occnp/oc-perf-
info:25.2.208
podman tag ocdebugtool/ocdebug-tools:25.2.204 <customer repo>/ocdebugtool/
ocdebug-tools:25.2.204
podman tag ocegress_gateway:25.2.110 <customer repo>/
ocegress_gateway:25.2.110
podman tag ocingress_gateway:25.2.110 <customer repo>/
ocingress_gateway:25.2.110
podman tag ocsepp-cn32c-svc:25.2.200 <customer repo>/ocsepp-cn32c-
svc:25.2.200
podman tag ocsepp-cn32f-svc:25.2.200 <customer repo>/ocsepp-cn32f-
svc:25.2.200
podman tag ocsepp-coherence-svc:25.2.200 <customer repo>/ocsepp-coherence-
svc:25.2.200
podman tag ocsepp-config-mgr-svc:25.2.200 <customer repo>/ocsepp-config-
mgr-svc:25.2.200
podman tag ocsepp-pn32c-svc:25.2.200 <customer repo>/ocsepp-pn32c-
svc:25.2.200
podman tag ocsepp-pn32f-svc:25.2.200 <customer repo>/ocsepp-pn32f-
svc:25.2.200
podman tag ocsepp-pre-install-hook:25.2.200 <customer repo>/ocsepp-pre-
install-hook:25.2.200
podman tag ocsepp-update-db:25.2.200 <customer repo>/ocsepp-update-
db:25.2.200
```

8. Run one of the following commands to push the image to the registry:

```
docker push <REGISTRY_NAME>/<Object Storage Namespace>/<image-name>:<image-tag>

podman push <REGISTRY_NAME>/<Object Storage Namespace>/<image-name>:<image-tag
```

Sample push commands:

```
podman push occne-repo-host:5000/alternate_route:25.2.110
podman push occne-repo-host:5000/common_config_hook:25.2.200
podman push occne-repo-host:5000/configurationinit:25.2.200
podman push occne-repo-host:5000/configurationupdate:25.2.200
podman push occne-repo-host:5000/mediation/ocmed-nfmediation:25.2.203
podman push occne-repo-host:5000/nf_test:25.2.205
podman push occne-repo-host:5000/nrf-client:25.2.203
podman push occne-repo-host:5000/occnp/oc-app-info:25.2.208
podman push occne-repo-host:5000/occnp/oc-config-server:25.2.208
podman push occne-repo-host:5000/occnp/oc-perf-info:25.2.208
podman push occne-repo-host:5000/ocdebugtool/ocdebug-tools:25.2.204
podman push occne-repo-host:5000/ocegress_gateway:25.2.110
```


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```
podman push occne-repo-host:5000/ocingress_gateway:25.2.110
podman push occne-repo-host:5000/ocsepp-cn32c-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-cn32f-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-coherence-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-config-mgr-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pn32c-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pn32f-svc:25.2.200
podman push occne-repo-host:5000/ocsepp-pre-install-hook:25.2.200
podman push occne-repo-host:5000/ocsepp-update-db:25.2.200
```

9. All the image repositories must be public. Run the following steps to make all image repositories public:
   a. Log in to OCI Console. Navigate to **OCI Console> Developer Services > Containers & Artifacts> Container Registry.**
   b. Select the root Compartment.
   c. In the **Repositories and Images** Seach option, the images will be listed. Select each image and click **Change to Public.** This step must be performed for all the images sequentially.

### 2.2.1.5 Verifying and Creating Namespace

This section explains how to verify and create a namespace in the system.

> **Note**
>
> This is a mandatory procedure, run this before proceeding further with the installation. The namespace created or verified in this procedure is an input for the next procedures.

To verify and create a namespace:

1. Run the following command to verify if the required namespace already exists in system:

   ```
   kubectl get namespaces
   ```

   In the output of the above command, if the namespace exists, continue with the Creating Service Account, Role and RoleBinding section.
2. If the required namespace is not available, create the namespace using the following command:

   ```
   kubectl create namespace <required namespace>
   ```

   Example:

   ```
   kubectl create namespace seppsvc
   ```

   Sample output:

   ```
   namespace/seppsvc created
   ```


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3. Update the namespace in the `ocsepp custom-values.yaml` file with the namespace created in the previous step.

   Example:

   Run the following kubectl command create the namespace seppsvc:

   ```
   kubectl create namespace seppsvc
   ```

   update the parameters : `global: nameSpace: seppsvc # NameSpace` where secret is deployed nameSpace: seppsvc.

**Naming Convention for Namespace**

The namespace should:

- start and end with an alphanumeric character.
- contain 63 characters or less.
- contain only alphanumeric characters or '-'.

> **Note**
>
> It is recommended to avoid using the prefix `kube-` when creating a namespace. The prefix is reserved for Kubernetes system namespaces.

## 2.2.1.6 Creating Service Account, Role, and RoleBinding

This section outlines the process for creating one or more service accounts. Users can choose to create a single service account manually or automatically with a custom name, or they can opt to have multiple microservice-specific accounts created automatically.

### 2.2.1.6.1 Manually Creating Service Account, Role, and Rolebinding

This section explains how to create and use a single service account, role, and rolebinding resources which can be used by all the microservices of SEPP. This is an optional procedure and is only needed, if the user wants to use a single service account, role,and rolebinding by all the microservices of SEPP.

1. Create a OCSEPP resource file:

   ```
   vi <ocsepp-resource-file>
   ```

   Example:

   ```
   vi ocsepp_single_service_account_config_<version>.yaml
   ```

2. Update the `ocsepp_single_service_account_config_<version>.yaml` file with the correct namespace by replacing seppsvc with the user defined SEPP's namespace:


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> **Note**
>
> The user have an option to update the name of service account, role, and rolebinding.

> **Note**
>
> If SEPP is deployed with ASM, the user must add the following annotation in the single service account: `certificate.aspenmesh.io/customFields: '{ "SAN": { "DNS": [<SEPP inter PLMN FQDN>, <SEPP intra PLMN FQDN>], "URI": [<SEPP inter PLMN FQDN>, <SEPP intra PLMN FQDN>] } }`
> Example:
>
> ```
> apiVersion: v1
> kind: ServiceAccount
> metadata:
>   annotations:
>     certificate.aspenmesh.io/customFields: '{ "SAN": { "DNS":
> ["sepp1.inter.oracle.com", "sepp1.intra.oracle.com"], "URI":
> ["sepp1.inter.oracle.com", "sepp1.intra.oracle.com"] } }'
>   name: sepp-sa
>   namespace: seppsvc
> ```

```
#sa-role-rolebinding.yaml
apiVersion: v1
kind: ServiceAccount
metadata:
  annotations: {}
  labels: {}
  name: sepp-sa
  namespace: seppsvc

---
apiVersion: rbac.authorization.k8s.io/v1
kind: Role
metadata:
  annotations: {}
  labels: {}
  name: sepp-role
  namespace: seppsvc
rules:
- apiGroups:
  - ""
  resources:
  - services
  - configmaps
  - pods
  - secrets
  - endpoints
```


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```
    - persistentvolumeclaims
    - pods/exec
    - serviceaccounts
    verbs:
    - get
    - watch
    - list
    - update
    - delete
    - deletecollection
    - create
    - patch
  # for cnDBtier
  - apiGroups:
    - apps
    resources:
    - deployments
    - statefulsets
    - replicasets
    verbs:
    - get
    - watch
    - list
    - update
    - delete
    - create
    - patch
  - apiGroups:
    - autoscaling
    resources:
    - horizontalpodautoscalers
    verbs:
    - get
    - watch
    - list
    - update
  # for job deletion
  - apiGroups:
    - batch
    resources:
    - jobs
    verbs:
    - get
    - delete
  - apiGroups:
    - ""
    resources:
    - events
    - pods/log
    verbs:
    - get
    - watch
    - list

  ---
  apiVersion: rbac.authorization.k8s.io/v1
```


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```
kind: RoleBinding
metadata:
  annotations: {}
  labels: {}
  name: sepp-rolebinding
  namespace: seppsvc
roleRef:
  apiGroup: rbac.authorization.k8s.io
  kind: Role
  name: sepp-role
subjects:
- kind: ServiceAccount
  name: sepp-sa
  namespace: seppsvc
```

3. Run the following command to create service account, role, and role binding:

   ```
   $ kubectl -n <SEPP namespace> create -f
   ocsepp_single_service_account_config_<version>.yaml
   ```

   For example:

   ```
   $ kubectl -n seppsvc create -f
   ocsepp_single_service_account_config_<version>.yaml
   ```

4. Update the `serviceAccountName` parameter in the `ocsepp_custom_values_<version>.yaml` file.

### 2.2.1.6.2 Automatically Creating Service Account, Role, and Rolebinding

This section describes how to automatically create service account, role, and role binding by enabling the Helm parameters.

To automate the creation of service account, role, and role binding, enable the following parameters:

- Global Flag (`global.autoCreateResources.enabled`): Controls the overall automation of resource creation. This flag is disabled by default and must be set to true to enable automation.
- Resource-specific Flag (`global.autoCreateResources.serviceAccount.create`): Controls ServiceAccount creation at the resource level. This flag is enabled by default and make sure it is set to true alongside the global flag to enable ServiceAccount automation. This flag is conditional on the global flag and will only take effect if the global flag is set to true. If the flag is disabled, you must create the service accounts manually. The role and role binding resources are created along with the service account as part of this automation.

The service account automation is disabled by default in the custom values yaml file. Perform the following steps to enable the service account automation:

> **Note**
>
> You must also perform the following steps during the upgrade procedure.


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1. Provide the `serviceAccountName` in the custom values yaml file to create the service account.
2. Enable the `autoCreateResources.enabled` parameter in the global section of the `ocsepp_custom_values_<version>.yaml` file.
   Example:

   ```
   autoCreateResources:
                  enabled: true
   ```

3. Enable the `serviceAccount.create` parameter in the global section of the `ocsepp_custom_values_<version>.yaml` file.
   Example:

   ```
   serviceAccount:
               create: true
   ```

4. Perform the Helm installation. The service account will be created with the name provided in the custom values yaml file.

The existing `serviceAccountName` field in the custom values yaml file is used for service account automation to minimize the changes in the custom values yaml file.

```
 serviceAccountName: &serviceAccountNameRef ""

       Example:
            serviceAccountName: &serviceAccountNameRef "singleserviceaccount"

autoCreateResources:
  enabled: true

  serviceAccount:
    create: true                                          # This internal
flag controls whether ServiceAccounts should be created automatically.
```

The role and role binding resources are created with the name that is provided as part of the automation. The service account automation is supported only for Helm.

The following table provides the service account creation behavior using different combinations:

**Table 2-27 Service Account Creation using Different Combinations**

| Parameter | serviceAccountName | Result |
|---|---|---|
| `autoCreateResources.enabled:true`<br>`serviceAccount.create:true` | Provided | Service account is created or updated with the provided serviceAccountName. |
| `autoCreateResources.enabled:true`<br>`serviceAccount.create:true` | Not provided | Service account is created or updated with .Release.name. |


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**Table 2-27 (Cont.) Service Account Creation using Different Combinations**

| Parameter | serviceAccountName | Result |
|---|---|---|
| `autoCreateResources.enabled:true`<br>`serviceAccount.create:false` | Provided | Service account is not created. |
| `autoCreateResources.enabled:true`<br>`serviceAccount.create:false` | Not provided | The deployment fails. The serviceAccountName is mandatory. |
| `autoCreateResources.enabled:false`<br>`serviceAccount.create:true or false` | Provided | The service account is not created. It must be created manually. |
| `autoCreateResources.enabled:false`<br>`serviceAccount.create:true or false` | Not Provided | Service account is created or updated with .Release.name |

**Note**

**Upgrade Process:**

If a customer is upgrading from an older component version that uses manually created service accounts (SAs) to a version that supports automatic SA creation (where SAs are generated automatically for each component), and they wish to transition to these automated service accounts, they must specify new SA names in the `ocsepp_custom_values_<version>.yaml` file. This will trigger the automatic creation of the new service accounts, roles, and role bindings via Helm charts. The customer will need to manually remove the old service accounts.

**Note**

**Error when `singleServiceAccountName` contains uppercase characters:**

```
failed to create resource: ServiceAccount "singleService" is invalid:
metadata.name: Invalid value: "singleService": a lowercase RFC 1123
subdomain must consist of lower case alphanumeric characters, '-' or '.',
and must start and end with an alphanumeric character (e.g. 'example.com',
regex used for validation is '[a-z0-9]([-a-z0-9]*[a-z0-9])?(\.[a-z0-9]([-
a-z0-9]*[a-z0-9])?)*')
```

## 2.2.1.7 Configuring Database, Creating Users, and Granting Permissions

This section explains how database administrators can create users and database in a single and multisite deployment.


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SEPP supports single database (provisional Database) and single type of user.

> **Note**
>
> - Before running the procedure for georedundant sites, ensure that the cnDBTier for georedundant sites is up and replication channels are enabled.
> - While performing a fresh installation, if SEPP is already deployed, purge the deployment and remove the database and users that were used for the previous deployment. For uninstallation procedure, see Uninstalling SEPP.
> - To install cnDBTier, refer *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*.

### cnDBTier Parameter Values

For Single Cluster, Single Instance (Single SEPP Instances on Dedicated cnDBTier Cluster) deployment model, the cnDBTier resources can be taken from `ocsepp_dbtier_<cnDBTier_version>_custom_values_<SEPP_version>.yaml` file.

Example: `ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml`

For Single Cluster, Multiple Instance (multiple SEPP instances on shared cnDBTier cluster), the cnDBTier parameters from cnDBTier Parameter Values Table should be updated in `ocsepp_dbtier_<cnDBTier_version>_custom_values_<SEPP_version>.yaml` file.

> **Note**
>
> Verify the value of the following parameters before deploying SEPP in 1+1 site GR with single cluster, multiple instance.

**Table 2-28 cnDBTier Parameter Values**

| Parameter | Default Values (in CV file) | New Values (to be Updated in CV file) |
|---|---|---|
| MaxNoOfTables | 1024 | 3000 |
| MaxNoOfAttributes | 5000 | 24000 |
| MaxNoOfOrderedIndexes | 1024 | 3700 |

### SEPP Users

SEPP supports a single type of user:

This user has a complete set of permissions. This user can perform create, alter, or drop operations on tables to perform install, upgrade, rollback, or delete operations.

### SEPP Database

SEPP Database contains configuration information. The same configuration must be done on each site by the operator. In case of multisite georedundant setups, each site must have a unique SEPP Database, which is replicated to other sites. SEPP sites can access only the information in their unique provisional database.

For example:


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- For Site 1: seppdb_site_1
- For Site 2: seppdb_site_1
- For Site 3: seppdb_site_1

#### 2.2.1.7.1 Single Site

This section explains how database administrator can create the database, users, and grant permissions to the users for single SEPP site.

Follow the below steps to manually create SEPP Database and MySQL user required for the deployment:

1. Log in to the machine that has permission to access the SQL nodes of NDB cluster.
2. Run the following command to log in to one of the `ndbappmysqld` node pods of the primary NDB cluster:

   Connect to the SQL nodes.

   ```
   kubectl exec -it ndbappmysqld-0 -n <cndb-namespace> -- bash
   ```

   where, `cndb-namespace` is the namespace in which cnDBTier is installed.
3. Log in to the MySQL prompt using root permission or user, which has permission to create users with conditions as mentioned (in the next step):

   Example:

   ```
   mysql -h127.0.0.1 -uroot -p<rootPassword>
   ```

   > **Note**
   >
   > This command varies between systems, path for MySQL binary, root user, and root password. After running this command, enter the password specific to the user mentioned in the command.

4. Check whether OCSEPP database user already exists. If the user does not exist, create an OCSEPP database user by running the following queries:
   a. Run the following command to to list the users:

      ```
      $ SELECT User FROM mysql.user;
      ```

   b. If the SEPP user does not exist, run the following command to create the new user:

      ```
      $ CREATE USER IF NOT EXISTS '<OCSEPP User Name>'@'%' IDENTIFIED BY
      '<OCSEPP User Password>';
      ```

      Example:

      ```
      $ CREATE USER IF NOT EXISTS 'seppusr'@'%' IDENTIFIED BY 'sepppasswd';
      ```


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> **Note**
>
> You must create the user on all the SQL nodes for all georedundant sites.

5. Check if OCSEPP database already exists. If it does not exist, run the following commands to create an OCSEPP database and provide permissions to OCSEPP username created in the previous step:

> **Note**
>
> **Naming Convention for SEPP Database**
>
> As the SEPP instances cannot share the same database, user must provide a unique name to the SEPP database in the cnDBTier. The recommended format for SEPP database and SEPP-backup database name is as follows:
>
> `<database-name>_<site-name>_<NF_INSTANCE_ID>` where "-" in NF_INSTANCE_ID is replaced by "_".
>
> Example: seppdb_site1_9faf1bbc_6e4a_4454_a507_aef01a101a06
>
> The name of the database must:
>
> - starts and ends with an alphanumeric character
> - contains a maximum of 63 characters
> - contains only alphanumeric characters or '_'

   a. Run the following command to check if database exists:

      ```
      $ show databases;
      ```

   b. If database does not exist, run the following command for database creation:

      ```
      $ CREATE DATABASE IF NOT EXISTS <OCSEPP Database>;
      ```

      Example:

      ```
      $ CREATE DATABASE IF NOT EXISTS seppdb;
      ```

   c. If backup database does not exist, run the following command for database creation:

      ```
      $ CREATE DATABASE IF NOT EXISTS <OCSEPP Backup Database>;
      ```

      Example:

      ```
      CREATE DATABASE IF NOT EXISTS seppbackupdb;
      ```


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> **Note**
>
> Ensure that you use the same database names while creating database that you have used in the global parameters of `ocsepp_custom_values_<version>.yaml` file. Following is an example of what are the database names configured in the `ocsepp_custom_values_<version>.yaml` file:
>
> ```
> global:seppDbName: "seppdb"
> global:leaderPodDbName: "seppdb"
> global:networkDbName: "seppdb"
> global:nrfClientDbName: "seppdb"
>
> Backup Database
>   global:seppBackupDbName: "seppbackupdb"
> ```

6. a. Run the following command to grant permission to user to SEPP Database:

   ```
   $ GRANT SELECT,INSERT,CREATE,ALTER,DROP,LOCK TABLES,CREATE TEMPORARY
   TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON <OCSEPP Database>.* TO
   '<OCSEPP User Name>'@'%';
   ```

   Example:

   ```
   GRANT SELECT, INSERT, CREATE, ALTER, DROP, LOCK TABLES, CREATE
   TEMPORARY TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON seppdb.* TO
   'seppusr'@'%';
   ```

   b. Run the following command to grant permission to user for SEPP backup db:

   ```
   $ GRANT SELECT,INSERT,CREATE,ALTER,DROP,LOCK TABLES,CREATE TEMPORARY
   TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON <OCSEPP backup Database>.*
   TO '<OCSEPP User Name>'@'%';
   ```

   Example:

   ```
   GRANT SELECT, INSERT, CREATE, ALTER, DROP, LOCK TABLES, CREATE
   TEMPORARY TABLES, DELETE, UPDATE, REFERENCES, EXECUTE ON seppbackupdb.*
   TO 'seppusr'@'%';
   ```

   c. Run the following command to grant permission for MySQL db:

   ```
   $ GRANT SELECT,INSERT,CREATE,ALTER,DROP,LOCK TABLES,CREATE TEMPORARY
   TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON mysql.* TO '<OCSEPP User
   Name>'@'%';
   ```


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Example:

```
GRANT SELECT, INSERT, CREATE, ALTER, DROP, LOCK TABLES, CREATE
TEMPORARY TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON mysql.* TO
'seppusr'@'%';
```

7. Run the following command to grand the permission to NDB_STORED_USER:

   ```
   GRANT NDB_STORED_USER ON *.* TO '<OCSEPP User Name>'@'%' WITH GRANT OPTION;
   ```

   Example:

   ```
   GRANT NDB_STORED_USER ON *.* TO 'seppusr'@'%' WITH GRANT OPTION;
   ```

8. Run the following command to flush the privileges:

   ```
   flush privileges;
   ```

9. Run the following command to verify SEPP database grants were correctly created:

   ```
   show grants for '<sepp user>'@'%';
   ```

   Example:

   ```
   show grants for 'seppusr'@'%';

   +-----------------------------------------------------------------------------
   ------------------------------------------------------------------------------
   ------+
   | Grants for seppusr@% |
   +-----------------------------------------------------------------------------
   ------------------------------------------------------------------------------
   ------+
   | GRANT USAGE ON *.* TO `seppusr`@`%` |
   | GRANT NDB_STORED_USER ON *.* TO `seppusr`@`%` WITH GRANT OPTION |
   | GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER,
   CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE ON `mysql`.* TO
   `seppusr`@`%` |
   | GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER,
   CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE ON `seppbackupdb`.* TO
   `seppusr`@`%` |
   | GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER,
   CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE ON `seppdb`.* TO
   `seppusr`@`%` |
   +-----------------------------------------------------------------------------
   ------------------------------------------------------------------------------
   ------+
   ```

10. Exit from MySQL prompt and SQL nodes.

### 2.2.1.7.2 Multisite

This section explains how database administrator can create the database, users, and grant permissions to the users for multisite deployment.


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Follow the below steps to manually create SEPP Database and MySQL user required for the deployment:

1. Log in to the machine that has permission to access the SQL nodes of NDB cluster.
2. Run the following command to log in to one of the `ndbappmysqld` node pods of the primary NDB cluster:

   Connect to the SQL nodes.

   ```
   kubectl exec -it ndbappmysqld-0 -n <cndb-namespace> -- bash
   ```

   where, `cndb-namespace` is the namespace in which CNDB is installed.
3. Log in to the MySQL prompt using root permission or user, which has permission to create users with conditions as mentioned (in the next step):

   Example:

   ```
   mysql -h127.0.0.1 -uroot -p<rootPassword>
   ```

   > **Note**
   >
   > This command varies between systems, path for MySQL binary, root user, and root password. After running this command, enter the password specific to the user mentioned in the command.

4. Check whether SEPP database user already exists. If the user does not exist, create an SEPP database user by running the following queries:
   a. Run the following command to to list the users:

      ```
      $ SELECT User FROM mysql.user;
      ```

   b. If the SEPP user does not exist, run the following command to create the new user :

      ```
      $ CREATE USER IF NOT EXISTS '<OCSEPP User Name>'@'%' IDENTIFIED BY
      '<OCSEPP User Password>';
      ```

      Example:

      ```
      $ CREATE USER IF NOT EXISTS 'seppusr'@'%' IDENTIFIED BY 'sepppasswd';
      ```

   > **Note**
   >
   > You must create the user on all the SQL nodes for all georedundant sites.

5. Check if SEPP database already exists. If it does not exist, run the following commands to create an SEPP database and provide permissions to SEPP username created in the previous step:


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> **Note**
>
> **Naming Convention for SEPP Database**
>
> As the SEPP instances cannot share the same database, user must provide a unique name to the SEPP database in the cnDBTier. The recommended format for SEPP database and SEPP-backup database name is as follows:
>
> `<database-name>_<site-name>_<NF_INSTANCE_ID>` where "-" in NF_INSTANCE_ID is replaced by "_".
>
> Example: seppdb_site1_9faf1bbc_6e4a_4454_a507_aef01a101a06
>
> The name of the database must:
>
> - starts and ends with an alphanumeric character
> - contains a maximum of 63 characters
> - contains only alphanumeric characters or '_'

> **Note**
>
> Create database for each site. For Site-2 or Site-3, ensure that the database name is different from the previous site names.

a. Run the following command to check if database exists:

```
$ show databases;
```

b. If database does not exist, run the following command for database creation:

```
$ CREATE DATABASE IF NOT EXISTS <OCSEPP Database>;
```

Example:

```
$ CREATE DATABASE IF NOT EXISTS seppdb;
```

c. If backup database does not exist, run the following command for database creation:

```
$ CREATE DATABASE IF NOT EXISTS <SEPP Backup Database>;
```

Example:

```
CREATE DATABASE IF NOT EXISTS seppbackupdb;
```


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> **Note**
>
> Ensure that you use the same database names while creating database that you have used in the global parameters of `ocsepp_custom_values_<version>.yaml` file. Following is an example of what are the database names configured in the `ocsepp_custom_values_<version>.yaml` file:
>
> ```
> global:seppDbName: "seppdb"
> global:leaderPodDbName: "seppdb"
> global:networkDbName: "seppdb"
> global:nrfClientDbName: "seppdb"
>
> Backup Database
>   global:seppBackupDbName: "seppbackupdb"
> ```

6. a. Run the following command to grant permission to user to SEPP DB:

   ```
   $ GRANT SELECT,INSERT,CREATE,ALTER,DROP,LOCK TABLES,CREATE TEMPORARY
   TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON <OCSEPP Database>.* TO
   '<OCSEPP User Name>'@'%';
   ```

   Example:

   ```
   GRANT SELECT, INSERT, CREATE, ALTER, DROP, LOCK TABLES, CREATE
   TEMPORARY TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON seppdb.* TO
   'seppusr'@'%';
   ```

   b. Run the following command to grant permission to user for backup db:

   ```
   $ GRANT SELECT,INSERT,CREATE,ALTER,DROP,LOCK TABLES,CREATE TEMPORARY
   TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON <OCSEPP backup Database>.*
   TO '<OCSEPP User Name>'@'%';
   ```

   Example:

   ```
   GRANT SELECT, INSERT, CREATE, ALTER, DROP, LOCK TABLES, CREATE
   TEMPORARY TABLES, DELETE, UPDATE, REFERENCES, EXECUTE ON seppbackupdb.*
   TO 'seppusr'@'%';
   ```

   c. Run the following command to grant permission for MySQL db:

   ```
   $ GRANT SELECT,INSERT,CREATE,ALTER,DROP,LOCK TABLES,CREATE TEMPORARY
   TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON mysql.* TO '<OCSEPP User
   Name>'@'%';
   ```


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Example:

```
GRANT SELECT, INSERT, CREATE, ALTER, DROP, LOCK TABLES, CREATE
TEMPORARY TABLES,DELETE,UPDATE,REFERENCES,EXECUTE ON mysql.* TO
'seppusr'@'%';
```

7. Run the following command to grand the permission to NDB_STORED_USER:

   ```
   GRANT NDB_STORED_USER ON *.* TO '<OCSEPP User Name>'@'%' WITH GRANT OPTION;
   ```

   Example:

   ```
   GRANT NDB_STORED_USER ON *.* TO 'seppusr'@'%' WITH GRANT OPTION;
   ```

8. Run the following command to flush the privileges:

   ```
   flush privileges;
   ```

9. Run the following command to verify SEPP database grants were correctly created:

   ```
   show grants for '<sepp user>'@'%';
   ```

   Example:

   ```
   show grants for 'seppusr'@'%';

   +-----------------------------------------------------------------------------
   ------------------------------------------------------------------------------
   ------+
   | Grants for seppusr@% |
   +-----------------------------------------------------------------------------
   ------------------------------------------------------------------------------
   ------+
   | GRANT USAGE ON *.* TO `seppusr`@`%` |
   | GRANT NDB_STORED_USER ON *.* TO `seppusr`@`%` WITH GRANT OPTION |
   | GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER,
   CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE ON `mysql`.* TO
   `seppusr`@`%` |
   | GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER,
   CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE ON `seppbackupdb`.* TO
   `seppusr`@`%` |
   | GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER,
   CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE ON `seppdb`.* TO
   `seppusr`@`%` |
   +-----------------------------------------------------------------------------
   ------------------------------------------------------------------------------
   ------+
   ```

10. Exit from MySQL prompt and SQL nodes.

## 2.2.1.8 Configuring Kubernetes Secrets for Accessing Database

This section explains how to configure Kubernetes secrets for accessing SEPP database.


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1. Run the following command to create a Kubernetes secret for the SEPP users:

   ```
   kubectl create secret generic <OCSEPP User secret name> --from-
   literal=mysql-username=<OCSEPP MySQL Database User Name> --from-
   literal=mysql-password=<OCSEPP Mysql User Password > -n <Namespace>
   ```

   Where,

   - <OCSEPP User secret name> is the secret name of the user.
   - <OCSEPP MySQL Database User Name> is the username of the ocsepp MySQL user.
   - <OCSEPP MySQL User Password> is the password of the ocsepp MySQL user.
   - <Namespace> is the namespace of SEPP deployment.

   > **Note**
   >
   > Note down the command used during the creation of Kubernetes secret. This command is used for updating the secrets in future.

   Example:

   ```
   $ kubectl create secret generic ocsepp-mysql-cred  --from-literal=mysql-
   username=seppusr --from-literal=mysql-password=sepppasswd  -n seppsvc
   ```

2. Run the following command to verify the secret created:

   ```
   $ kubectl describe secret <OCSEPP User secret name> -n <Namespace>
   ```

   Where,

   - <OCSEPP User secret name> is the secret name of the user.
   - <Namespace> is the namespace of SEPP deployment.

     For example:

   ```
   $ kubectl describe secret ocsepp-mysql-cred -n seppsvc
   ```

   Sample output:

   ```
   Name:  ocsepp-mysql-cred
   Namespace: seppsvc
   Labels: <none>
   Annotations: <none>
   Type: Opaque
   Data
   ====
   mysql-password: 10 bytes
   mysql-username: 7 bytes
   ```


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> **Note**
>
> If the secret name is anything other than ocsepp-mysql-cred, update the following parameter values in the `ocsepp_custom_values_<version>.yaml` file before deploying:
>
> - `global:dbCredSecretName: &dbCredSecretNameRef 'ocsepp-mysql-cred'`
> - `global:privilegedDbCredSecretName: &privDbCredSecretNameRef 'ocsepp-mysql- cred'`

3. To update the Kubernetes secret, update the command used in step 1 with string "--dryrun -o yaml" and "kubectl replace -f - -n <Namespace>". After the update is performed, use the following command:

   ```
   $ kubectl create secret generic <OCSEPP User secret name> --
   fromliteral=mysql-username=<OCSEPP MySQL Database User Name> --
   fromliteral=mysql-password=<OCSEPP Mysql User Password> --dryrun -o yaml -
   n <Namespace> | kubectl replace -f - -n <Namespace>
   ```

   Where,

   - <OCSEPP User secret name> is the secret name of the user.
   - <OCSEPP MySQL Database User Name> is the username of the ocsepp MySQL user.
   - <OCSEPP MySQL User Password> is the password of the ocsepp MySQL user.
   - <Namespace> is the namespace of SEPP deployment.

4. Run the updated command. The following message is displayed:

   ```
   secret/<OCSEPP User secret name> replaced
   ```

   Where, <OCSEPP User secret name> is the updated secret name of the application user.

   Example:

   ```
   secret/ocsepp-mysql-cred replaced
   ```

## 2.2.1.9 Configuring Kubernetes Secret for Enabling HTTPS

This section explains the steps to configure HTTPS at Ingress and Egress Gateways.

### 2.2.1.9.1 Configuring Secrets at N32 Egress and Ingress Gateway

This section explains the steps to configure secrets for enabling HTTP over TLS in N32 Ingress and Egress Gateways. This procedure must be performed before deploying SEPP.


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> **Note**
>
> The passwords for TrustStore and KeyStore are stored in respective password files.

To create Kubernetes secret for HTTP over TLS, the following files are required:

- ECDSA private key and CA signed certificate of SEPP (if initialAlgorithm is ES256)
- or, RSA private key and CA signed certificate of SEPP (if initialAlgorithm is RSA256)
- TrustStore password file
- KeyStore password file
- CA certificate

> **Note**
>
> - Creation process for private keys, certificates, and passwords is on discretion of user/operator.
> - f the certificates are not available, then create them following the instructions given in the 'Creating Private Keys and Certificates for Gateways' section.

You can manage Kubernetes secrets for enabling HTTPS in SEPP using one of the following methods:

- Managing secrets through OCCM
- Managing secrets manually

### Managing Secrets Through OCCM

To create the secrets using OCCM, see "Managing Certificates" in *Oracle Communications Cloud Native Core, Certificate Management User Guide*.

The secrets created by OCCM are then patched to add keyStore password and trustStore password files by running the following commands:

1. To patch the secrets created with the keyStore password file:

   ```
   TLS_CRT=$(base64 < "key.txt" | tr -d '\n')
   kubectl patch secret server-primary-ocsepp-secret-occm -n seppsvc -p
   "{\"data\":{\"key.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `key.txt` is the password file that contains KeyStore password.
   - `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

2. To patch the secrets created with the trustStore password file:

   ```
   TLS_CRT=$(base64 < "trust.txt" | tr -d '\n')
   kubectl patch secret server-primary-ocsepp-secret-occm -n seppsvc -p
   "{\"data\":{\"trust.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,


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- `trust.txt` is the password file that contains TrustStore password.
- `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

> **Note**
>
> To monitor the lifecycle management of the certificates through OCCM, do not patch the Kubernetes secrets manually to update the TLS certificate or keys. It must be done through the OCCM GUI.

**Managing Secrets Manually**

1. Run the following command to create secret:

```
$ kubectl create secret generic <ocsepp-n32-secret> --
fromfile=<ssl_ecdsa_private_key.pem> --from-
file=<rsa_private_key_pkcs1.pem> --fromfile=<trust.txt> --from-
file=<key.txt> --from-file=<caroot.cer> --
fromfile=<ssl_rsa_certificate.crt> --from-file=<ssl_ecdsa_certificate.crt>
-n <Namespace of SEPP deployment>
```

Where,

```
<ocsepp-n32-secre> is the secret name for n32-egress-gateway and n32-
ingress-agteway.
<ssl_ecdsa_private_key.pem> is the ECDSA private key.
<rsa_private_key_pkcs1.pem> is the RSA private key.
<trust.txt> is the SSL Truststore file.
<key.txt> is the SSL Keystore file.
<caroot.cer> is the CA root certificate authority
<ssl_rsa_certificate.crt> is the SSL RSA certificate.
<ssl_ecdsa_certificate.crt> is the SSL ECDSA certificate.
<Namespace> of SEPP deployment.
```

> **Note**
>
> - Note down the command used during the creation of Kubernetes secret, this command will be used for updates in future.
> - It is recommended to use the same secret name as mentioned in the example. In case you change <ocsepp-n32-secret>, then update the `k8SecretName` parameter under n32-ingress-gateway and n32-egress-gateway section in the `ocsepp_custom_values_<version>.yaml`. For more information, see the n32-ingress-gateway and n32-egress-gateway section.

Example:

```
kubectl create secret generic ocsepp-n32-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
```


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```
file=rsa_certificate.crt --from-file=ssl_ecdsa_private_key.pem --from-
file=ocsepp.cer -n seppsvc
```

2. Run the following command to verify the secret:

   ```
   $ kubectl describe secret <ocsepp-n32-secret> -n <Namespace>
   ```

   Where, `<ocsepp-n32-secret>` is the secret name for n32-egress-gateway and n32-ingress-agteway and <Namespace> is the namespace of SEPP deployment.
   Example:

   ```
   $ kubectl describe secret ocsepp-n32-secret -n seppsvc
   ```

> **Note**
>
> If the certificates are not available, then create them following the instructions given in the 'Creating Private Keys and Certificates for Gateways' section.

**Hosted SEPP Mode**

This section explains the steps to configure secrets for enabling HTTP over TLS in N32 Ingress and Egress Gateways. This procedure must be performed before deploying SEPP.

> **Note**
>
> The passwords for TrustStore and KeyStore are stored in respective password files.

To create Kubernetes secret for HTTP over TLS, the following files are required:

- ECDSA private key and CA signed certificate of SEPP (if initialAlgorithm is ES256)
- or, RSA private key and CA signed certificate of SEPP (if initialAlgorithm is RSA256)
- TrustStore password file
- KeyStore password file
- CA certificate

> **Note**
>
> - Creation process for private keys, certificates, and passwords is on discretion of user/operator.
> - f the certificates are not available, then create them following the instructions given in the 'Creating Private Keys and Certificates for Gateways' section.

You can manage Kubernetes secrets for enabling HTTPS in SEPP using one of the following methods:

- Managing secrets through OCCM
- Managing secrets manually


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### Managing Secrets Through OCCM

To create the secrets using OCCM, see "Managing Certificates" in *Oracle Communications Cloud Native Core, Certificate Management User Guide*.

The secrets created by OCCM are then patched to add keyStore password and trustStore password files by running the following commands:

1. To patch the secrets created with the keyStore password file:

   ```
   TLS_CRT=$(base64 < "key.txt" | tr -d '\n')
   kubectl patch secret server-primary-ocsepp-secret-occm -n seppsvc -p
   "{\"data\":{\"key.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `key.txt` is the password file that contains KeyStore password.
   - `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

2. To patch the secrets created with the trustStore password file:

   ```
   TLS_CRT=$(base64 < "trust.txt" | tr -d '\n')
   kubectl patch secret server-primary-ocsepp-secret-occm -n seppsvc -p
   "{\"data\":{\"trust.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `trust.txt` is the password file that contains TrustStore password.
   - `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

> **Note**
>
> To monitor the lifecycle management of the certificates through OCCM, do not patch the Kubernetes secrets manually to update the TLS certificate or keys. It must be done through the OCCM GUI.

### Managing Secrets Manually

1. Run the following command to create secret:

   ```
    kubectl create secret generic <ocsepp-n32-secret>
   --from-file=ssl_ecdsa_private_key.pem
   --from-file=rsa_private_key_pkcs1.pem
   --from-file=trust.txt
   --from-file=key.txt
   --from-file=caroot.cer
   --from-file=rsa_certificate.crt
   --from-file=ssl_ecdsa_certificate.crt
   --from-file=ocsepp.cer
   --from-
   file=internal_fqdn.mcc111.mnc123.3gppnetwork_ssl_ecdsa_private_key.pem
   --from-
   file=internal_fqdn.mcc111.mnc123.3gppnetwork_rsa_private_key_pkcs1.pem
   ```


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```
--from-file=internal_fqdn.mcc111.mnc123.3gppnetwork_trust.txt
--from-file=internal_fqdn.mcc111.mnc123.3gppnetwork_key.txt
--from-file=bundle1.cer
--from-file=internal_fqdn.mcc111.mnc123.3gppnetwork_rsa_certificate.crt
--from-
file=internal_fqdn.mcc111.mnc123.3gppnetwork_ssl_ecdsa_certificate.crt
--from-file=internal_fqdn.mcc111.mnc123.3gppnetwork_ocsepp.cer
--from-file=external_fqdn1.mcc123.mnc90.cer -n <namespace>
```

Where,

```
<ocsepp-n32-secre> is the secret name for n32-egress-gateway and n32-
ingress-agteway.
'ocsepp-n32-igw-secret' is the secret name for n32-ingress-gateway
'ocsepp-n32-egw-secret' is the secret name for n32-egress-gateway
<hosted_fqdn_ssl_ecdsa_private_key.pem> is the ECDSA private key for the
hosted partner.
<hosted_fqdn_rsa_private_key_pkcs1.pem> is the RSA private key for the
hosted partner.
<hosted_fqdn_trust.txt> is the SSL Truststore file for the hosted partner.
<hosted_fqdn_key.txt> is the SSL Keystore file for the hosted partner.
<hosted_fqdn_caroot.cer> is the CA root certificate authority for the
hosted partner.
<hosted_fqdn_ssl_rsa_certificate.crt> is the SSL RSA certificate for the
hosted partner.
<hosted_fqdn_ssl_ecdsa_certificate.crt> is the SSL ECDSA certificate for
the hosted partner.

<external_fqdn_ssl_ecdsa_private_key.pem> is the ECDSA private key exposed
towards the roaming partner.
<external_fqdn_rsa_private_key_pkcs1.pem> is the RSA private key exposed
towards the roaming partner.
<external_fqdn_trust.txt> is the SSL Truststore file exposed towards the
roaming partner.
<external_fqdn_key.txt> is the SSL Keystore file exposed towards the
roaming partner.
<external_fqdn_caroot.cer> is the CA root certificate authority exposed
towards the roaming partner.
<external_fqdn_ssl_rsa_certificate.crt> is the SSL RSA certificate exposed
towards the roaming partner.
<external_fqdn_ssl_ecdsa_certificate.crt> is the SSL ECDSA certificate
exposed towards the roaming partner.
<Namespace> of SEPP deployment.
```

and rest are the default certificates that are created for the SEPP.


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> **Note**
>
> - Note down the command used during the creation of Kubernetes secret, this command will be used for updates in future.
> - It is recommended to use the same secret name as mentioned in the example. In case you change <ocsepp-n32-igw-secret> and <ocsepp-n32-egw-secret>, then update the `k8SecretName` parameter under n32-ingress-gateway and n32-egress-gateway section in the `ocsepp_custom_values_<version>.yaml`. For more information, see the n32-ingress-gateway and n32-egress-gateway section.
> - Hosted Partners with multiple FQDN can have different set of client certificates and CA bundle. In Hosted SEPP mode, user must add the client certificate of all hosted partners in the <ocsepp-n32-igw-secret> and <ocsepp-n32-egw-secret>.
> - SAN values present in the certificate should match the FQDNs configured in the multi FQDN configuration on n32 ingress gateway and n32 egress gateway.

Example:

```
kubectl create secret generic ocsepp-n32-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_private_key.pem --from-
file=ocsepp.cer -n seppsvc
```

2. Run the following command to verify the secret:

   ```
   $ kubectl describe secret <ocsepp-n32-secret> -n <Namespace>
   ```

   Where, `<ocsepp-n32-secret>` is the secret name for n32-egress-gateway and n32-ingress-agteway and <Namespace> is the namespace of SEPP deployment.
   Example:

   ```
   $ kubectl describe secret ocsepp-n32-secret -n seppsvc
   ```

> **Note**
>
> If the certificates are not available, then create them following the instructions given in the 'Creating Private Keys and Certificates for Gateways' section.

### 2.2.1.9.2 Configuring Secrets at PLMN Egress and Ingress Gateway

This section explains the steps to configure secrets for enabling HTTPS/HTTP over TLS in Public Land Mobile Network (PLMN) Ingress and Egress Gateways. This procedure must be performed before deploying SEPP.


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> **Note**
>
> The passwords for TrustStore and KeyStore are stored in respective password files.

To create kubernetes secret for HTTPS/HTTP over TLS, the following files are required:

- ECDSA private key and CA signed certificate of SEPP, if initialAlgorithm is ES256
- RSA private key and CA signed certificate of SEPP, if initialAlgorithm is RS256
- TrustStore password file
- KeyStore password file
- Certificate chain for trust store
- Signed server certificate or Signed client certificate

> **Note**
>
> The creation process for private keys, certificates, and passwords are at the discretion of the user or operator.

You can manage Kubernetes secrets for enabling HTTPS in SEPP using one of the following methods:

- Managing secrets through OCCM
- Managing secrets manually

#### Managing Secrets Through OCCM

To create the secrets using OCCM, see "Managing Certificates" in *Oracle Communications Cloud Native Core, Certificate Management User Guide*.

The secrets created by OCCM are then patched to add keyStore password and trustStore password files by running the following commands:

1. To patch the secrets created with the keyStore password file:

   ```
   TLS_CRT=$(base64 < "key.txt" | tr -d '\n')
   kubectl patch secret server-primary-seppsvc-secret-occm -n seppsvc -p
   "{\"data\":{\"key.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `key.txt` is the password file that contains KeyStore password.
   - `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

2. To patch the secrets created with the trustStore password file:

   ```
   TLS_CRT=$(base64 < "trust.txt" | tr -d '\n')
   kubectl patch secret server-primary-ocsepp-secret-occm -n seppsvc -p
   "{\"data\":{\"trust.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `trust.txt` is the password file that contains TrustStore password.


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- `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

> **Note**
>
> To monitor the lifecycle management of the certificates through OCCM, do not patch the Kubernetes secrets manually to update the TLS certificate or keys. It must be done through the OCCM GUI.

### Managing Secrets Manually

1. Run the following command to create secret:

```
$ kubectl create secret generic <ocsepp-plmn-secret> --
fromfile=<ssl_ecdsa_private_key.pem> --from-
file=<rsa_private_key_pkcs1.pem> --fromfile=<trust.txt> --from-
file=<key.txt> --from-file=<caroot.cer> --
fromfile=<ssl_rsa_certificate.crt> --from-file=<ssl_ecdsa_certificate.crt>
-n <Namespace of SEPP deployment>
```

Where,

```
<ocsepp-plmn-secret> is the secret name for plmn-egress-gateway and plmn-
ingress-gateway.
<ssl_ecdsa_private_key.pem> is the ECDSA private key.
<rsa_private_key_pkcs1.pem> is the RSA private key.
<trust.txt> is the SSL Truststore file.
<key.txt> is the SSL Keystore file.
<caroot.cer> is the CA root certificate authority
<ssl_rsa_certificate.crt> is the SSL RSA certificate.
<ssl_ecdsa_certificate.crt> is the SSL ECDSA certificate.
<Namespace> of SEPP deployment.
```


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> **Note**
>
> - Note down the command used during the creation of kubernetes secret, this command will be used for updates in future.
> - It is recommended to use the same secret name as mentioned in the example. In case you change `<ocsepp-plmn-secret>`, then update the `k8SecretName` parameter under `plmn-ingress-gateway` and `plmn-egress-gateway` section in the `ocsepp-custom-values-<version>.yaml` file. For more information, see the plmn-ingress-gateway and plmn-egress-gateway section.
> - For multiple CA root partners, the SEPP CA certificate should contain the CA information in the particular format. The CAs of the roaming partners should be concatenated in the single file separated by eight hyphens as given below:
>
> ```
> CA1 content
> --------
> CA2 content
> --------
> CA3 content
> ```

Example:

```
kubectl create secret generic ocsepp-plmn-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n seppsvc
```

2. Run the following command to verify the secret:

```
$ kubectl describe secret <ocsepp-plmn-secret> -n <Namespace>
```

Where,

```
<ocsepp-plmn-secret> is the secret name for plmn-egress-gateway and plmn-
ingress-gateway.
<Namespace> is the namespace of SEPP deployment.
```

Example:

```
$ kubectl describe secret  ocsepp-plmn-secret -n seppsvc
```

### Hosted SEPP Mode

This section explains the steps to configure secrets for enabling HTTPS/HTTP over TLS in Public Land Mobile Network (PLMN) Ingress and Egress Gateways. This procedure must be performed before deploying SEPP.


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> **Note**
>
> The passwords for TrustStore and KeyStore are stored in respective password files.

To create kubernetes secret for HTTPS/HTTP over TLS, the following files are required:

- ECDSA private key and CA signed certificate of SEPP, if initialAlgorithm is ES256
- RSA private key and CA signed certificate of SEPP, if initialAlgorithm is RS256
- TrustStore password file
- KeyStore password file
- Certificate chain for trust store
- Signed server certificate or Signed client certificate

> **Note**
>
> The creation process for private keys, certificates, and passwords are at the discretion of the user or operator.

You can manage Kubernetes secrets for enabling HTTPS in SEPP using one of the following methods:

- Managing secrets through OCCM
- Managing secrets manually

### Managing Secrets Through OCCM

To create the secrets using OCCM, see "Managing Certificates" in *Oracle Communications Cloud Native Core, Certificate Management User Guide*.

The secrets created by OCCM are then patched to add keyStore password and trustStore password files by running the following commands:

1. To patch the secrets created with the keyStore password file:

   ```
   TLS_CRT=$(base64 < "key.txt" | tr -d '\n')
   kubectl patch secret server-primary-seppsvc-secret-occm -n seppsvc -p
   "{\"data\":{\"key.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `key.txt` is the password file that contains KeyStore password.
   - `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

2. To patch the secrets created with the trustStore password file:

   ```
   TLS_CRT=$(base64 < "trust.txt" | tr -d '\n')
   kubectl patch secret server-primary-ocsepp-secret-occm -n seppsvc -p
   "{\"data\":{\"trust.txt\":\"${TLS_CRT}\"}}"
   ```

   Where,

   - `trust.txt` is the password file that contains TrustStore password.


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- `server-primary-ocsepp-secret-occm` is the secret created by OCCM.

> **Note**
>
> To monitor the lifecycle management of the certificates through OCCM, do not patch the Kubernetes secrets manually to update the TLS certificate or keys. It must be done through the OCCM GUI.

### Managing Secrets Manually

1. Run the following command to create secret:

```
$ kubectl create secret generic <ocsepp-plmn-secret> --
fromfile=<ssl_ecdsa_private_key.pem> --from-
file=<rsa_private_key_pkcs1.pem> --fromfile=<trust.txt> --from-
file=<key.txt> --from-file=<caroot.cer> --
fromfile=<ssl_rsa_certificate.crt> --from-file=<ssl_ecdsa_certificate.crt>
-n <Namespace of SEPP deployment>
```

Where,

```
<ocsepp-plmn-secret> is the secret name for plmn-egress-gateway and plmn-
ingress-gateway.
'ocsepp-plmn-igw-secret' is the secret name for plmn-ingress-gateway
'ocsepp-plmn-egw-secret' is the secret name for plmn-egress-gateway
<ssl_ecdsa_private_key.pem> is the ECDSA private key.
<rsa_private_key_pkcs1.pem> is the RSA private key.
<trust.txt> is the SSL Truststore file.
<key.txt> is the SSL Keystore file.
<caroot.cer> is the CA root certificate authority
<ssl_rsa_certificate.crt> is the SSL RSA certificate.
<ssl_ecdsa_certificate.crt> is the SSL ECDSA certificate.
<Namespace> of SEPP deployment.
```


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**Note**

- Note down the command used during the creation of kubernetes secret, this command will be used for updates in future.
- It is recommended to use the same secret name as mentioned in the example. In case you change `<ocsepp-plmn-secret>`, then update the `k8SecretName` parameter under `plmn-ingress-gateway` and `plmn-egress-gateway` section in the `ocsepp-custom-values-<version>.yaml` file. For more information, see the plmn-ingress-gateway and plmn-egress-gateway sections.
- For multiple CA root partners, the SEPP CA certificate should contain the CA information in the particular format. The CAs of the roaming partners should be concatenated in the single file separated by eight hyphens as given below:

```
CA1 content
--------
CA2 content
--------
CA3 content
```

Example for PLMN Egress Gateway:

```
kubectl create secret generic ocsepp-plmn-egw-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n seppsvc
```

Example for PLMN Ingress Gateway:

```
kubectl create secret generic ocsepp-plmn-igw-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n seppsvc
```

2. Run the following command to verify the secret:

```
$ kubectl describe secret <ocsepp-plmn-secret> -n <Namespace>
```

Where,

```
<ocsepp-plmn-secret> is the secret name for plmn-egress-gateway and plmn-
ingress-gateway.
<Namespace> is the namespace of SEPP deployment.
```

Example:

```
$ kubectl describe secret  ocsepp-plmn-secret -n seppsvc
```


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## 2.2.1.10 SEPP Compatibility with Kubernetes, CNE and, Kyverno Policies

This section explains about SEPP compatibility with Kubernetes, CNE and, Kyverno Policies.

1. If Istio or Aspen Service Mesh (ASM) is installed on CNE, run the following command to patch the "disallow-capabilities" clusterpolicy of CNE and exclude the NF namespace before the NF deployment:

   ```
   kubectl patch clusterpolicy disallow-capabilities --type "json" -p
   '[{"op":"add","path":"/spec/rules/0/exclude/any/0/resources/
   namespaces/-","value":"<namespace of NF>"}]'
   ```

   where, namespace of NF is the SEPP namespace used for deployment.
   Example:

   ```
   kubectl patch clusterpolicy disallow-capabilities --type "json" -p
   '[{"op":"add","path":"/spec/rules/0/exclude/any/0/resources/
   namespaces/-","value":"seppsvc"}]'
   ```

2. Run the following command to verify that cluster policuies are updates with the SEPP namespace in exclude list:

   ```
   kubectl get clusterpolicies disallow-capabilities -oyaml
   ```

   Example:

   ```
   spec:
     background: true
     failurePolicy: Ignore
     rules:
     - exclude:
         any:
         - resources:
             kinds:
             - Pod
             - DaemonSet
             namespaces:
             - kube-system
             - occne-infra
             - rook-ceph
             - seppsvc
   ```

## 2.2.1.11 Configuring SEPP to Support Aspen Service Mesh

> **Note**
>
> From Release 25.2.200 onwards, SEPP ASM is only supported for incoming traffic on config manager and PLMN Ingress Gateway and outgoing traffic from PLMN Egress Gateway.


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SEPP leverages Aspen Service Mesh (ASM) for all the external TLS communication. The service mesh integration provides inter-NF communication and allows API gateway co-working with service mesh. The service mesh integration supports the services by deploying a special sidecar proxy in supported pods to intercept all the network communication between microservices.

Supported ASM version:1.21.6, 1.14.6

For ASM installation and configuration, refer to official Aspen Service Mesh website for details.

Aspen Service Mesh (ASM) configurations are categorized as follows:

- **Control Plane**: It involves adding labels or annotations to inject sidecar. The control plane configurations are part of the NF Helm chart.
- **Data Plane**: It helps in traffic management, such as handling NF call flows by adding Service Entries (SE), Destination Rules (DR), Envoy Filters (EF), and other resource changes such as apiVersion change between different versions. This configuration is done manually by considering each NF requirement and ASM deployment. This configuration can be done using `ocsepp_servicemesh_config_custom_values_<version>.yaml` file.

### Data Plane Configuration

Data Plane configuration consists of following Custom Resource Definitions (CRDs):

- Service Entry (SE)
- Destination Rule (DR)
- Envoy Filter (EF)
- Peer Authentication (PA)
- Virtual Service (VS)

> **Note**
>
> Use `ocsepp_servicemesh_config_custom_values_<version>.yaml` file and Helm charts to add or remove CRDs that you may require due to ASM upgrades to configure features across different releases.

The data plane configuration is applicable in the following scenarios:

- **Service Entry:** Enables adding additional entries into Sidecar's internal service registry, so that auto-discovered services in the mesh can access or route to these manually specified services. A service entry describes the properties of a service (DNS name, VIPs, ports, protocols, endpoints).
- **Destination Rule:** Defines policies that apply to traffic intended for service after routing has occurred. These rules specify configuration for load balancing, connection pool size from the sidecar, and outlier detection settings to detect and evict unhealthy hosts from the load balancing pool.
- **Envoy Filters:** Sidecars rewrite the header with its own default value. Therefore, the headers from back-end services are lost. You require Envoy Filters to help in passing the headers from back-end services to use it as it is, for eg. server header.
- **Peer Authentication:** Used for service-to-service authentication to verify the client making the connection. This template can be used to change the default mTLS mode on the deployment. It allows values such as STRICT, PERMISSIVE, and DISABLE.


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- **Virtual Service:** Defines a set of traffic routing rules to apply when a host is addressed. Each routing rule defines matching criteria for the traffic of a specific protocol. If the traffic is matched, then it is sent to a named destination service (or subset or version of it) defined in the registry.

### Service Mesh Configuration File

The following are supported fields in CRD:

- Service Entry
  - hosts
  - exportTo
  - location
  - addresses
  - ports.name
  - ports.number
  - ports.protocol
- Destination Rule
  - host
  - mode
  - name
  - exportTo
- Envoy Filters
  - labelselector
  - applyTo
  - filtername
  - operation
  - typeconfig
  - configkey
  - configvalue
- Peer Authentication
  - name
  - labelselector
  - tlsmode
- Virtual Service
  - name
  - prefix
  - host
  - destinationhost
  - port
  - exportTo


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- attempts

For more information about the CRDs and the parameters, see Aspen Service Mesh.

A sample `ocsepp_servicemesh_config_custom_values_<version>.yaml` is available in Custom_Templates file. For downloading the file, see Customizing SEPP.

### 2.2.1.11.1 Predeployment Configurations

This section explains the predeployment configuration procedure to install SEPP with Service Mesh support.

> **Note**
>
> From Release 25.2.200 onwards, SEPP ASM is only supported with DB services depoyed in either non-ASM or one side ASM modes.

**Prerequisites**

Ensure that ASM is deployed on the cluster. Validate the following parameters:

1. Run the following command to verify the `certificateCustomFields` parameter value in ASM deployed namespace. This parameter should be set to true.

   ```
   kubectl describe  cm istio-sidecar-injector -n <namespace in which ASM is
   deployed>| grep "certificateCustomFields"
   ```

   Example:

   ```
   kubectl describe cm istio-sidecar-injector -nistio-system | grep
   "certificateCustomFields"
   ```

   Output:

   ```
    "certificateCustomFields": true,
   ```

2. If this parameter is set to false, update the ASM charts to set it to true and perform an upgrade.

   ```
   ./manifests/charts/istio-control/istio-discovery/values.yaml
           certificateCustomFields: true
   ```

3. Run the following command to verify that `istio-base` and `istiod` are installed in the cluster.

   ```
   helm ls -nistio-system
   ```

   Example:

   ```
   helm ls -nistio-system
   NAME            NAMESPACE       REVISION
   UPDATED                                 STATUS
   ```


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```
CHART                    APP VERSION
istio-base      istio-system    1               2024-12-20
10:31:27.240210738 +0000 UTC deployed        base-1.14.6-am1
1.14.6-am1
istiod          istio-system    1               2024-12-20
10:32:45.905279498 +0000 UTC deployed        istiod-1.14.6-am1
1.14.6-am1
```

**Predeployment Configuration**

Follow the predeployment configuration procedure as mentioned below:

1. Creating SEPP namespace
   a. Run the following command to verify if the required namespace already exists in the system:

      ```
      kubectl get namespaces
      ```

   b. In the output of the above command, check if required namespace is available. If not available, then create the namespace using the following command:

      ```
      kubectl create namespace <namespace>
      ```

      Where,

      `<Namespace>` is the SEPP namespace.

      Example:

      ```
      kubectl create namespace seppsvc
      ```

**SEPP Specific Changes**

In the `ocsepp_custom_values_<version>.yaml`, do the following changes:

1. Modify `serviceMeshCheck` flag from false to true in all the sections.
2. In the PLMN Ingress Gateway section, do the following:
   a. change `initssl` to false.
   b. change `enableIncomingHttp` to true.
   c. change `enableIncomingHttps` to false.
3. In the PLMN Egress Gateway section, do the following:
   a. change `initssl` to false.
   b. change `enableOutgoingHttps` to false.

## 2.2.1.11.2 Installation of ASM Configuration Charts

This section explains the installation of ASM configuration charts.
In the `ocsepp_servicemesh_config_custom_values_<version>.yaml` file, do the following changes:

1. Create a destination rule to establish a connection between OCSEPP and cnDBTier. Sample template is given below:


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> **Note**
>
> - If the DB does not have istio sidecar injection, then create the destination rule.
> - for one side ASM feature, a destination rule has to be created for alternate route service.
> - If the user is running ATS testcases, then a destination rule has to be created for pn32f service, else skip this step.

**Destination Rules (for DB):**

```
- host: "<db-service-fqdn>.<db-namespace>.svc.<domain>"
  mode: DISABLE
  name: ocsepp-db-service-dr
  exportTo: |-
    [ "." ]
  namespace: seppsvc
```

**Destination Rules (for Alternate route service):**

```
 - host: "<ocsepp-release-name>-alternate-route.<namespace>.svc.<domain>"
   mode: DISABLE
   name: ocsepp-ar-svc-dr
   exportTo: |-
     [ "." ]
```

**Destination Rules (for pn32f, this is ATS specific):**

```
   - host: "<ocsepp-release-name>-pn32f-svc.<namespace>.svc.<domain>"
     mode: DISABLE
     name: ocsepp-pn32f-svc-dr
     exportTo: |-
       [ "." ]
```

where,

- host is the complete hostname of DB sevice or pn32f or alternate route.
- <ocsepp-release-name> is the Helm release name used while deploying SEPP.
- namespace is the Namespace in which SEPP will be deployed.

  For example, mysql-connectivity-service.seppsvc.occne-24-2-cluster-user1"

**DestinationRule section:**

```
apiVersion: networking.istio.io/v1alpha3
kind: DestinationRule
metadata:
  name: ocsepp-db-service-dr
```


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```
  namespace: <ocsepp-namespace>
spec:
  exportTo:
  - "."
  host: "<db-service-fqdn>.<db-namespace>.svc.<domain>"          #
Example:  mysql-connectivity-service.seppsvc.svc.cluster.local"
  trafficPolicy:
    tls:
      mode: DISABLE
```

2. Modify the service entry in pod networking, so that the pods can access Kubernetes api-server. Update the following parameters value:
   - hosts
   - addresses

   **kube-api-se**

```
apiVersion: networking.istio.io/v1alpha3
kind: ServiceEntry
metadata:
  name: kube-api-server
  namespace: <ocsepp-namespace>
spec:
  hosts:
  - kubernetes.default.svc.<domain> # domain can be extracted using
kubectl -n kube-system get configmap kubeadm-config -o yaml | grep -i
dnsDomain
  exportTo:
  - "."
  addresses:
  - <20.96.0.1> # cluster IP of kubernetes api server, can be extracted
using  this command --  kubectl get svc -n default
  location: MESH_INTERNAL
  ports:
  - number: 443
    name: https
    protocol: HTTPS
  resolution: NONE
```

3. PeerAuthentication is created for the namespace with default mTLS mode as PERMISSIVE. If user wants to configure, modify the following parameter to STRICT or DISABLE.

```
 tlsmode: STRICT
```

   A sample template is as follows:
   **peerauth**

```
apiVersion: security.istio.io/v1beta1
kind: PeerAuthentication
metadata:
 name: ocsepp-peerauthentication
spec:
 selector:
```


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```
  matchLabels:
   app.kubernetes.io/part-of: ocsepp
 mtls:
  mode: PERMISSIVE
```

> **Note**
>
> - After the successful deployment, you can change the PeerAuthentication mtls mode to STRICT from PERMISSIVE and perform Helm upgrade.
> - Ensure that spec.selector.matchLabels must be `app.kubernetes.io/part-of: ocsepp` value. User should not change it.

4. **Optional:** Uncomment the SE section below, if deploying OCSEPP in ASM mode (only for ATS):

```
apiVersion: networking.istio.io/v1beta1
kind: ServiceEntry
metadata:
  name: stub-serviceentry
  namespace: seppsvc
spec:
  exportTo:
  - '*'
  hosts:
  - '*.svc.cluster.local'
  - '*.3gppnetwork.org'
  location: MESH_INTERNAL
  ports:
  - name: http2
    number: 8080
    protocol: HTTP2
  resolution: NONE
```

5. Envoy filter will be deployed with the following default configuration:

```
envoyFilters_v_19x_111x:
  - name: serverheaderfilter
    configpatch:
      - applyTo: NETWORK_FILTER
        filtername: envoy.filters.network.http_connection_manager
        operation: MERGE
        typeconfig: type.googleapis.com/
envoy.extensions.filters.network.http_connection_manager.v3.HttpConnectionM
anager
        configkey: server_header_transformation
        configvalue: PASS_THROUGH
```

6. Run the following command to verify if all CRDs are installed:

```
kubectl get <CRD-Name> -n <Namespace>
```


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Where,

- CRD-Name are the resource names
- Namespace is the namespace in which SEPP should be deployed

Example:

```
kubectl get se,dr,peerauthentication,envoyfilter,vs -n seppsvc
```

> **Note**
>
> Any modification to the existing CRDs or adding CRDs can be done by updating the `ocsepp_servicemesh_config_custom_values_<version>.yaml` file and running Helm upgrade.

7. Run the following command to install ASM specific resources in your namespace:

```
helm install -f ocsepp_servicemesh_config_custom_values_<version>.yaml
<release-name> ocsepp-servicemesh-config-<version>.tgz --namespace <sepp
namespace>
```

Example:

```
helm install -f ocsepp_servicemesh_config_custom_values_25.2.200.yaml
ocsepp-servicemesh ocsepp-servicemesh-config-25.2.200.tgz --namespace
seppsvc
```

### 2.2.1.11.3 Deploying SEPP with ASM

This section explains how to deploy SEPP using ASM.

1. Create namespace label for auto sidecar injection to automatically add the sidecars in all of the pods spawned in SEPP namespace:

```
kubectl label ns <ocsepp-namespace> istio-injection=enabled
```

Example:

```
kubectl label ns seppsvc istio-injection=enabled
```

2. Run the following command to verify that label is applied on the namespace:

```
kubectl describe ns seppsvc
```

Output:

```
Name:         seppsvc
Labels:       istio-injection=enabled
              kubernetes.io/metadata.name=seppsvc
```


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```
Annotations:  <none>
Status:       Active
```

3. Update `ocsepp_custom_values_<version>.yaml` with the following:
   a. Update the following sidecar resource configuration in allResources section of customExtension in global section:
      - sidecar.istio.io/proxyCPULimit: "2"
      - sidecar.istio.io/proxyMemoryLimit: 1Gi
      - sidecar.istio.io/proxyCPU: 200m
      - sidecar.istio.io/proxyMemory: 128Mi

```
customExtension:
  allResources:
    labels: {}
    annotations:
      sidecar.istio.io/proxyCPULimit: "2"
      sidecar.istio.io/proxyMemoryLimit: 1Gi
      sidecar.istio.io/proxyCPU: 200m
      sidecar.istio.io/proxyMemory: 128Mi
  lbServices:
    labels: {}
    annotations: {}
  lbDeployments:
    labels: {}
    annotations: {}
  nonlbServices:
    labels: {}
    annotations: {}
  nonlbDeployments:
    labels: {}
    annotations: {}
```

   b. To scrape metrics from SEPP pods, add oracle.com/cnc: "true" annotation under lbDeployments and nonlbDeployments section of customExtension in global section:

> **Note**
>
> This step is required only if OSO is deployed.

```
customExtension:
  allResources:
    labels: {}
    annotations: {}
  lbServices:
    labels: {}
    annotations: {}
  lbDeployments:
    labels: {}
    annotations:
```


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```
    oracle.com/cnc: "true"
nonlbServices:
  labels: {}
  annotations: {}
nonlbDeployments:
  labels: {}
  annotations:
    oracle.com/cnc: "true"
```

4. To deploy and use SEPP with ASM, ensure to use `ocsepp_custom_values_<version>.yaml` file while performing helm install or upgrade. The file must have all the necessary changes mentioned in the Predeployment Configurations section for deploying SEPP with ASM.

### 2.2.1.11.4 Postdeployment Configuration

This section explains the postdeployment configurations.

> **Note**
>
> The following steps are not required if SEPP is deployed only in ATS mode.

1. In the `ocsepp_servicemesh_config_custom_values_<version>.yaml` file, do the following:
   a. Uncomment the section and add values for virtual service as follows:
      i. Uncomment the following sections to disable Istio retries on 503 response code for each microservice as needed:

```
#Uncomment the below virtualservices to disable istio retries when
503 is received. User can add for services as per below templates.
#NOTE: Replace <ocsepp-release-name> with OCSEPP release name
  - name: no-istio-retries-for-plmn-ingress-gateway
    prefix: "/"
    host: <ocsepp-ocsepp-release-name>-plmn-ingress-gateway
    destinationhost: <ocsepp-release-name>-plmn-ingress-gateway
    port: 80
    attempts: "0"
    exportTo: |-
      [ "." ]

  - name: no-istio-retries-for-plmn-egress-gateway
    prefix: "/"
    host: <ocsepp-release-name>-plmn-egress-gateway
    destinationhost: <ocsepp-release-name>-plmn-egress-gateway
    port: 8080
    attempts: "0"
    exportTo: |-
      [ "." ]

  - name: no-istio-retries-for-config-mgr-svc
    host: <ocsepp-release-name>-config-mgr-svc
    destinationhost: <ocsepp-release-name>-config-mgr-svc
    attempts: "0"
```


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```
exportTo: |-
  [ "." ]
```

2. The above changes will be done on C SEPP as well as on P SEPP. Ensure correct values are populated on both sides.
3. Run the following command to add these changes:

   ```
   helm upgrade -f ocsepp_servicemesh_config_custom_values_<version>.yaml
   <release-name> ocsepp-servicemesh-config-25.2.200.tgz --namespace <ns>
   ```

   Example:

   ```
   helm upgrade -f ocsepp_servicemesh_config_custom_values_25.2.200.yaml
   ocsepp-servicemesh ocsepp-servicemesh-config-25.2.200.tgz --namespace
   seppsvc
   ```

   **Enable Inter-NF communication**

   For every new NF participating in call flows when SEPP is a client, DestinationRule, and ServiceEntry must be created in SEPP namespace to enable communication. Following is the inter-NF communication with SEPP:

   - SEPP to NRF communication ( for registration and heartbeat) Create CRDs as mentioned in above step.

   **OSO deployment**

1. If OSO is deployed with service mesh, add this annotation in OSO `ocoso_csar_vzw_<release-number>_prom_custom_values.yaml` file file to exclude outbound ports of all the SEPP services.
   Example:

   ```
   traffic.sidecar.istio.io/excludeOutboundPorts: 9090, 9093, 9094, 8085,
   9091,
   8091, 9000, 8081
   ```

   > **Note**
   >
   > This is applicable only when OSO is deployed with istio side car.

For more information on OSO deployment, see *Oracle Communications Operations Services Overlay Installation and Upgrade Guide* and *Oracle Communications Operations Services Overlay User Guide*.

## 2.2.1.11.5 Deleting Service Mesh

This section describes the steps to disable or delete the service mesh.

To disable service mesh, run the following command:

```
kubectl label --overwrite namespace seppsvc istio-injection=disabled
```

To verify if service mesh is disabled, run the following command:


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```
kubectl get se,dr,peerauthentication,envoyfilter,vs -n seppsvc
```

To delete service mesh, run the following command:

```
helm delete <helm-release-name> -n <namespace>
```

Where,

- <helm-release-name> is the release name used by the helm command. This release name must be the same as the release name used for ServiceMesh.
- <namespace> is the deployment namespcae used by Helm command.

For example:

```
helm delete ocsepp-servicemesh -n seppsvc
```

> **Note**
>
> The changes due to the disabling of service mesh will be reflected only if SEPP is redeployed.

## 2.2.1.12 Configuring Network Policies

Kubernetes network policies allow you to define ingress or egress rules based on Kubernetes resources such as Pod, Namespace, IP, and Port. These rules are selected based on Kubernetes labels in the application. These network policies enforce access restrictions for all the applicable data flows except communication from Kubernetes node to pod for invoking container probe.

> **Note**
>
> Configuring network policies is an optional step. Based on the security requirements, network policies may or may not be configured.

For more information on network policies, see https://kubernetes.io/docs/concepts/services-networking/network-policies/.

> **Note**
>
> - If the traffic is blocked or unblocked between the pods even after applying network policies, check if any existing policy is impacting the same pod or set of pods that might alter the overall cumulative behavior.
> - If changing default ports of services such as Prometheus, Database, Jaegar, or if Ingress or Egress Gateway names are overridden, update them in the corresponding network policies.

**Configuring Network Policies**

The following are the various operations that can be performed for network policies:


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### 2.2.1.12.1 Installing Network Policies

**Prerequisite**

Network Policies are implemented by using the network plug-in. To use network policies, you must use a networking solution that supports Network Policy.

> **Note**
>
> For a fresh installation, it is recommended to install Network Policies before installing SEPP. However, if SEPP is already installed, you can still install the Network Policies.

To install network policy:

1. Open the `ocsepp_network_policies_custom_values_<version>.yaml` file provided in the release package zip file. For downloading the file, see Downloading SEPP Package, Pushing the SEPP Images to Customer Docker Registry, and Pushing the Roaming Hub or Hosted SEPP Images to Customer Docker Registry.
2. The file is provided with the default network policies. If required, update the `ocsepp_network_policies_custom_values_<version>.yaml` file. For more information on the parameters, see the Configuration Parameters for network policy parameter table.


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**Note**

- To run ATS, uncomment the following policies from `ocsepp_network_policies_custom_values_<version>.yaml` file:
  - allow-ingress-traffic-to-notification
  - allow-egress-ats
  - allow-ingress-ats
- To connect with CNC Console, update the below parameter in the `allow-ingress-from-console` policy in the `ocsepp_network_policies_custom_values_<version>.yaml` file:
  - `kubernetes.io/metadata.name`: <namespace in which CNCC is deployed>
- To copy messages from plmn-ingress-gateway and n32-ingress-gateway to kafka broker in Data Director, update the below parameter in the `allow-egress-to-data-director-from-igw` policy in the `ocsepp_network_policies_custom_values_<version>.yaml` file:
  - `kubernetes.io/metadata.name`: <namespace in which kafka broker is present>
- In `allow-ingress-prometheus` and `allow-egress-to-prometheus` policies, `kubernetes.io/metadata.name` parameter must contain the value for the namespace where Prometheus is deployed, and `app.kubernetes.io/name` parameter value should match the label from Prometheus pod.
- The following Network Policies require modification for ASM deployment. The required modifications are mentioned in the comments in `ocsepp_custom_values_network_policies.yaml` file. Update the policies as per the comments.
  - allow-ingress-sbi-n32-igw
  - allow-ingress-sbi-plmn-igw

3. Run the following command to install the network policies:

```
helm install <helm-release-name> <network-policy>/ -n <namepsace> -f
      <custom-value-file>
```

For Example:

```
helm install ocsepp-network-policy
        ocsepp-network-policy-25.2.200/ -n seppsvc -f
        ocsepp_network_policies_custom_values_25.2.200.yaml
```

Where,

- `helm-release-name`: ocsepp-network-policy helm release name.
- `custom-value-file`: ocsepp-network-policy custom value file.
- `namespace`: SEPP namespace.
- `network-policy`: location where the network-policy package is stored.


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> **Note**
>
> - Connections that were created before installing network policy and still persist are not impacted by the new network policy. Only the new connections would be impacted.
> - If you are using ATS suite along with network policies, it is required to install the SEPP and ATS in the same namespace.

### 2.2.1.12.2 Upgrading Network Policies

To add, delete, or update network policy:

1. Modify the `ocsepp_network_policies_custom_values_<version>.yaml` file to update, add, and delete the network policy.
2. Run the following command to upgrade the network policies:

```
helm upgrade <helm-release-name> <network-policy>/ -n <namespace> -f <custom-value-file>
```

For Example:

```
helm upgrade ocsepp-network-policy
        ocsepp-network-policy-<version>/ -n seppsvc -f
        ocsepp_network_policies_custom_values_<version>.yaml
```

Where,

- `helm-release-name`: ocsepp-network-policy Helm release name.
- `custom-value-file`: ocsepp-network-policy custom value file.
- `namespace`: SEPP namespace.
- `network-policy`: location where the network-policy package is stored

### 2.2.1.12.3 Verifying Network Policies

Run the following command to verify that the network policies have been applied successfully:

```
kubectl get <helm-release-name> -n <namespace>
```

For Example:

```
kubectl get ocsepp-release-network-policy -n seppsvc
```

Where,

- `helm-release-name`: ocsepp-network-policy Helm release name
- `namespace`: SEPP namespace


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Sample output:

```
NAME                                POD-
SELECTOR                                                    AGE
allow-egress-database               app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        2m35s
allow-egress-dns                    app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        2m35s
allow-egress-jaeger                 app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        2m35s
allow-egress-k8-api                 app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        2m35s
allow-egress-to-prometheus          app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        7s
allow-egress-to-sepp-pods           app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        2m35s
allow-ingress-from-console          app.kubernetes.io/name=config-mgr-
svc                                        2m35s
allow-ingress-from-sepp-pods        app.kubernetes.io/part-
of=ocsepp                                  2m35s
allow-ingress-prometheus            app.kubernetes.io/part-
of=ocsepp                                  2m35s
allow-ingress-sbi-n32-igw           app.kubernetes.io/name=n32-ingress-
gateway                                    2m35s
allow-ingress-sbi-plmn-igw          app.kubernetes.io/name=plmn-ingress-
gateway                                   2m35s
deny-egress-all-except-egw          app.kubernetes.io/name notin (n32-egress-
gateway,plmn-egress-gateway)        2m35s
deny-ingress-all                    app.kubernetes.io/part-
of=ocsepp                                  2m35s
```

### 2.2.1.12.4 Uninstalling Network Policies

1. Run the following command to uninstall the network policies:

```
helm uninstall <helm-release-name> -n<namespace>
```

For Example:

```
helm uninstall ocsepp-network-policy -n seppsvc
```

> **Note**
>
> While using the debug container, it is recommended to uninstall the network policies or update them as required to establish the connections.

### 2.2.1.12.5 Configuration Parameters for Network Policies

This section includes information about the supported Kubernetes resource and configuration parameters for configuring Network Policies.


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**Table 2-29 Supported Kubernetes Resource for Configuring Network Policies**

| Parameter | Description | Details |
|---|---|---|
| `apiVersion` | This is a mandatory parameter.<br>Specifies the Kubernetes version for access control.<br>**Note:** This is the supported API version for network policy. This is a read-only parameter. | **DataType:** String<br>**Default Value:** networking.k8s.io/v1 |
| `kind` | This is a mandatory parameter.<br>Represents the kind of REST resource this object represents.<br>**Note:** This is a read only parameter. | **DataType:** String<br>**Default Value:** NetworkPolicy |

**Table 2-30 Configuration Parameters for Network Policies**

| Parameter | Description | Details |
|---|---|---|
| `metadata.name` | This is a mandatory parameter.<br>Specifies a unique name for the network policy. | **DataType:** String<br>**Default Value:** {{ .metadata.name }} |
| `spec.{}` | This is a mandatory parameter.<br>This consists of all the information needed to define a particular network policy in the given namespace.<br>Note: SEPP supports the spec parameters defined in Kubernetes Resource Category. | **DataType:** Object<br>**Default Value:** NA |

For more information about this functionality, see "Network Policies" in the *Cloud Native Core, Security Edge Protection Proxy User Guide*.

## 2.2.1.13 Configuring Traffic Segregation

This section provides information on how to configure Traffic Segregation in SEPP. For description of " Traffic Segregation" feature, see " Traffic Segregation" section in "SEPP Supported Features " chapter of *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide* .

Various networks can be created at the time of CNE cluster installation. The following things can be customized at the time of the cluster installation using `cnlb.ini` file provided as part of CNE installation.

1. Number of network pools
2. Number of Egress IPs
3. Number of Service IPs/Ingress IPs
4. External IPs/subnet

For more information, see *Oracle Communications Cloud Native Core, Cloud Native Environment User Guide*.

To use one or multiple interfaces, you must configure annotations in the `deployment.customExtension.annotations` parameter of the `ocsepp_custom_values_<version>.yaml` file.


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### Configuration at Ingress Gateway

Use the following annotation to configure network segregation at ingress-side in `ocsepp_custom_values_<version>.yaml`:

**Annotation for a single interface**

```
k8s.v1.cni.cncf.io/networks: default/<network interface>@<network interface>
oracle.com.cnc/cnlb: '[{"backendPortName": "<igw port name>", "cnlbIp":
"<external IP>","cnlbPort":"<port number>"}]'
```

Here,

- `k8s.v1.cni.cncf.io/networks`: Contains all the network attachment information the pod uses for network segregation.
- `oracle.com.cnc/cnlb`: To define service IP and port configurations that the deployment will employ for ingress load balancing.
  Where,
  - `cnlbIp` is the front-end IP utilized by the application.
  - `cnlbPort` is the front-end port used in conjunction with the CNLB IP for load balancing.
  - `backendPortName` is the backend port name of the container that needs load balancing, retrievable from the deployment or pod spec of the application.

**Sample annotation for a single interface:**

```
k8s.v1.cni.cncf.io/networks: default/nf-sig1-int8@nf-sig1-int8
oracle.com.cnc/cnlb: '[{"backendPortName": "igw-port", "cnlbIp":
"10.123.155.16","cnlbPort":"80"}]'
```

**Sample annotation for multiport:**

```
        k8s.v1.cni.cncf.io/networks: default/nf-oam-int5@nf-oam-int5
        oracle.com.cnc/cnlb: '[{"backendPortName": "query", "cnlbIp":
"10.75.180.128","cnlbPort": "80"}, {"backendPortName": "admin", "cnlbIp":
"10.75.180.128", "cnlbPort":"16687"}]''
```

In the above example, each item in the list refers to a different backend port name with the same CNLB IP, but the ports for the front end are distinct.

Ensure that the backend port name aligns with the container port name specified in the deployment's specification, which needs to be load balanced from the port list. The CNLB IP represents the external IP of the service, and cnlbPort is the external-facing port:

```
ports:
- containerPort: 16686
  name: query
  protocol: TCP
- containerPort: 16687
  name: admin
  protocol: TCP
```


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**Configuration at Egress Gateway**

Use the following annotation to configure network segregation at egress-side in `ocsepp_custom_values_<version>.yaml`:

**Sample annotation for a single interface:**

```
k8s.v1.cni.cncf.io/networks: default/nf-sig-egr1@nf-sig-egr1
```

**Sample annotation for a multiple interface:**

```
k8s.v1.cni.cncf.io/networks: default/nf-oam-egr1@nf-oam-egr1,default/nf-sig-egr1@nf-sig-egr1
```

> **Note**
>
> - The network attachments will be deployed as a part of cluster installation only.
> - The network attachment name should be unique for all the pods.

For information about the above mentioned annotations, see "Configuring Cloud Native Load Balancer (CNLB)" in *Oracle Communications Cloud Native Core, Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide*.

## 2.2.2 Installation Tasks

This section provides installation procedures to install Security Edge Protection Proxy (SEPP) using Command Line Interface (CLI).

Before installing SEPP, you must complete Prerequisites and Preinstallation Tasks for both the deployment methods.

### 2.2.2.1 Installing SEPP Package

To install the SEPP package:

1. Navigate to the Helm directory which is a part of Files directory of unzipped csar package. Run the following command:

   ```
   cd Files/Helm
   ```

2. Run the following command to verify the SEPP Helm charts in the Helm directory:

   ```
   ls
   ```

   The output must be:

   - `ocsepp-25.2.200.tgz`
   - `ocsepp-network-policy-25.2.200.tgz`
   - `ocsepp-servicemesh-config-25.2.200.tgz`


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3. Customize the `ocsepp_custom_values_25.2.200.yaml` file with the required deployment parameters. See Customizing SEPP section to customize the file. For more information about predeployment parameter configurations, see Predeployment Configuration tasks.

> **Note**
>
> Customize the `ocsepp_custom_values_25.2.200.yaml` file for SEPP deployment. See Customizing SEPP section for the details of the parameters. Some of the mandatory parameters are:
>
> - `dockerRegistry`
> - `namespace`
> - `mysql.primary.host`
> - SEPP inter and intra FQDN (`nfFqdnRef, viaHeaderSeppViaInterFqdn, viaHeaderSeppViaIntraFqdn, intraPlmnFqdn, sanValues`).

> **Note**
>
> - In case of multisite georedundant setups, configure nfInstanceId uniquely for each SEPP site.
> - Ensure the nfInstanceId configuration in the global section is same as that in the appProfile section of NRF client. `- dockerRegistry: occne-repo-host:5000`

4. Run the following command to install SEPP:

```
helm install <helm-release> ocsepp-25.2.200.tgz --namespace <k8s namespace> -f <path to ocsepp_customized_values.yaml>
```

Example:

```
helm install ocsepp-release ocsepp-25.2.200.tgz --namespace seppsvc -f ocsepp_custom_values_25.2.200.yaml
```


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> **Note**
>
> - Ensure the following:
>
>  `<helm-release>` must not exceed 20 characters.
>  `namespacename` is the deployment namespace used by helm command.
>
>  `custom_values.yaml` file name is the name of the custom values yaml file (including location).
> - **Timeout duration:** Timeout duration is an optional parameter that can be used in the Helm install command. If it is not specified, the default value will be 5m (5 minutes) in Helm3. It sets the time to wait for any individual Kubernetes operation (like Jobs for hooks). The default value is 5ms. If the helm install command fails at any point to create a Kubernetes object, it will internally call the purge to delete after the timeout value (default: 300s). Here, timeout value is not for overall installation but automatic purge on installation failure.
> - In Georedundant deployment, if you want to add or remove a site, refer to Adding a Site to an Existing SEPP Georedundant Site and Removing a Site to from an Existing Georedundant Deployment.

> **Caution**
>
> Do not exit from `helm install` command manually. After running the `helm install` command, it takes some time to install all the services. In the meantime, you must not press "ctrl+c" to come out from `helm install` command. It leads to some anomalous behavior.

### 2.2.2.2 Installing Roaming Hub and Hosted SEPP

This section describes how to install Roaming Hub and Hosted SEPP in the Cloud Native Environment.

> **Note**
>
> This is applicable only for Roaming Hub and Hosted SEPP installation.

1. Navigate to the Helm directory which is a part of Files directory of unzipped csar package. Run the following command:

   ```
   cd Files/Helm
   ```

2. Run the following command to verify the SEPP Helm charts in the Helm directory:

   ```
   ls
   ```

   The output must be:

   - `ocsepp-25.2.200.tgz`


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- `ocsepp-network-policy-25.2.200.tgz`
- `ocsepp-servicemesh-config-25.2.200.tgz`

3. Customize the `ocsepp_custom_values_25.2.200.yaml` file with the required deployment parameters. See Customizing SEPP section to customize the file. For more information about predeployment parameter configurations, see Predeployment Configuration tasks. For more details about enabling and configuring Hosted SEPP mode, refer to ' Hosted SEPP' section of *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*.
4. Run the following command to install SEPP:

   ```
   helm install <helm-release> ocsepp-25.2.200.tgz --namespace <k8s
   namespace> -f <path to ocsepp_custom_values_roaming_hub_25.2.200.yaml>
   ```

   Example:

   ```
   helm install ocsepp-release ocsepp-25.2.200.tgz --namespace seppsvc -f
   ocsepp_custom_values_roaming_hub_25.2.200.yaml
   ```

**Note**

- Ensure the following:

  `<helm-release>` must not exceed 20 characters.
  `namespacename` is the deployment namespace used by helm command.

  `custom_values.yaml` file name is the name of the custom values yaml file (including location).
- **Timeout duration:** Timeout duration is an optional parameter that can be used in the Helm install command. If it is not specified, the default value will be 5m (5 minutes) in Helm3. It sets the time to wait for any individual Kubernetes operation (like Jobs for hooks). The default value is 5ms. If the helm install command fails at any point to create a Kubernetes object, it will internally call the purge to delete after the timeout value (default: 300s). Here, timeout value is not for overall installation but automatic purge on installation failure.
- In Georedundant deployment, if you want to add or remove a site, refer to Adding a Site to an Existing SEPP Georedundant Site and Removing a Site to from an Existing Georedundant Deployment.

**Caution**

Do not exit from `helm install` command manually. After running the `helm install` command, it takes some time to install all the services. In the meantime, you must not press "ctrl+c" to come out from `helm install` command. It leads to some anomalous behavior.


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## 2.2.3 Postinstallation Tasks

This section explains the postinstallation tasks for SEPP.

### 2.2.3.1 Verifying Installation

To verify the installation:

1. To verify the deployment status, open a new terminal and run the following command:

   ```
   $ watch kubectl get pods -n <SEPP namespace>
   ```

   The pod status gets updated at regular intervals.
2. Run the following command to verify the installation status:

   ```
   helm status <helm-release> -n <SEPP namespace>
   ```

   Example:

   ```
   helm status ocsepp-release -n seppsvc
   ```

   Where,

   - `<helm-release>` is the Helm release name of SEPP.
   - `<SEPP namespace>` is the namespace of SEPP deployment.

   If the deployment is successful, then the status is displayed as `deployed`.

   Sample output:

   ```
   NAME: ocsepp-release
   LAST DEPLOYED: Sat Jan 11 20:08:03 2025
   NAMESPACE: seppsvc
   STATUS: deployed
   REVISION: 1
   ```
3. Run the following command to check the status of the services:

   ```
   kubectl -n <SEPP namespace> get services
   ```

   Example:

   ```
     kubectl -n seppsvc get services
   ```
4. Run the following command to check the status of the pods:

   ```
   $ kubectl get pods -n <SEPP namespace>
   ```

   The value in the `STATUS` column of all the pods must be `Running`.


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The value in the READY column of all the pods must be n/n, where n is the number of containers in the pod.

Example:

```
$ kubectl get pods -n seppsvc


NAME                                                READY   STATUS    RESTARTS   AGE
ocsepp-release-appinfo-55b8d4f687-wqtgj                     1/1
Running   0     141m
ocsepp-release-cn32c-svc-64cd9c555c-ftd8z                   1/1
Running   0     113m
ocsepp-release-cn32f-svc-dd886fbcc-xr2z8                    1/1
Running   0     4m4s
ocsepp-release-config-mgr-svc-6c8ddf4c4f-lb4zj              1/1
Running   0     141m
ocsepp-release-n32-egress-gateway-5b575bbf5f-z5bbx          2/2
Running   0     131m
ocsepp-release-n32-ingress-gateway-76874c967b-btp46         2/2
Running   0     131m
ocsepp-release-ocpm-config-65978858dc-t4t5k                 1/1
Running   0     141m
ocsepp-release-performance-67d76d9d58-llwmt                 1/1
Running   0     141m
ocsepp-release-plmn-egress-gateway-6dc4759cc7-wn6r8         2/2
Running   0     31m
ocsepp-release-plmn-ingress-gateway-56c9b45658-hfcxx        2/2
Running   0     131m
ocsepp-release-pn32c-svc-57774fdc4-2qpvx                    1/1
Running   0     141m
ocsepp-release-pn32f-svc-586cd87c7b-pxk6m                   1/1
Running   0     3m47s
ocsepp-release-sepp-nrf-client-nfdiscovery-65747884cd-qblqn 1/1
Running   0     141m
ocsepp-release-sepp-nrf-client-nfmanagement-5dd6ff98d6-cr7s7 1/1
Running   0     141m
ocsepp-release-nf-mediation-74bd4dc799-d9ks2                1/1
Running   0     141m
ocsepp-release-coherence-svc-54f7987c4b-wv4h7               1/1
Running   0     141m
```


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> **Note**
>
> - Take a backup of the following files that are required during fault recovery:
>   - Updated `ocsepp_custom_values_<version>.yaml` file
>   - Updated Helm charts
>   - Secrets, certificates, and keys that are used during installation
> - If the installation is not successful or you do not see the status as Running for all the pods, perform the troubleshooting steps provided in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide.*

## 2.2.3.2 Performing Helm Test

This section describes how to perform sanity check for SEPP installation through Helm test. The pods to be checked should be based on the namespace and label selector configured for the Helm test configurations.

Helm Test is a feature that validates successful installation of SEPP and determines if the NF is ready to take traffic.

This test also checks for all the PVCs to be in bound state under the Release namespace and label selector configured.

> **Note**
>
> Helm Test can be performed only on Helm3.

Perform the following Helm test procedure:

1. Configure the Helm test configurations under the global parameters section of the `ocsepp_custom_values_<version>.yaml` file as follows:

```
#helm test configuration
test:
  imageRepository: occne-repo-host:5000
  nfName: ocsepp
  image:
    name: nf_test
    tag: 25.2.200
    pullPolicy: Always
  config:
    logLevel: INFO
    # Configure timeout in SECONDS.
    # Estimated total time required for SEPP deployment and helm test
command completion
    timeout: 240
  resources:
    requests:
      cpu: 1
      memory: 1Gi
      #ephemeral-storage: 70Mi
    limits:
```


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```
    cpu: 1
    memory: 1Gi
    #ephemeral-storage: 1Gi
  complianceEnable: true
  k8resources:
    - horizontalpodautoscalers/v1
    - deployments/v1
    - configmaps/v1
    - prometheusrules/v1
    - serviceaccounts/v1
    - poddisruptionbudgets/v1
    - roles/v1
    - services/v1
    - rolebindings/v1
```

2. Run the following Helm test command:

   ```
   helm test <helm-release> -n <namespace>
   ```

   Where,

   `<helm-release>` is the release name.

   `<namspace>` is the deployment namespace where SEPP is installed.

   Example:

   ```
   helm test ocsepp-release -n seppsvc
   ```

   Sample Output:

   ```
   [admusr@cnejac0101-bastion-2 ocsepp-22.4.0-0]$  helm test ocsepp-release -
   n seppsvc
   NAME: ocsepp-release
   LAST DEPLOYED: Fri Aug 19 04:56:36 2022
   NAMESPACE: seppsvc
   STATUS: deployed
   REVISION: 1
   TEST SUITE:     ocsepp-release
   Last Started:   Fri Aug 19 05:02:03 2022
   Last Completed: Fri Aug 19 05:02:26 2022
   Phase:          Succeeded
   ```

If the Helm test fails, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide.*

## 2.2.3.3 Taking the Back Up

Take a backup of the following files, which are required during fault recovery:

- Current custom-values.yaml file from which you are upgrading
- Updated `ocsepp_custom_values_<version>.yaml` file
- Updated Helm charts
- Secrets, certificates, and keys that are used during installation.


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- Updated `ocsepp_servicemesh_config_custom_values_<version>.yaml` file.
- Updated `ocsepp_custom_values_<version>.yaml` file.

### 2.2.3.4 Alert Configuration

This section describes the measurement based Alert rules configuration for SEPP. The Alert Manager uses the Prometheus measurements values as reported by microservices in conditions under alert rules to trigger alerts.

**Note**

Alert file is packaged with SEPP custom templates. Perform the following steps before configuring alert file:

1. Download the SEPP CSAR package from MOS. For more information, refer Downloading SEPP section.
2. Unzip the SEPP CSAR package file to get the `ocsepp_alertrules_promha_<version>.yaml` and `ocsepp_alertrules_<version>.yaml` files.
3. By default, kubernetes_namespace or namespace is configured as Kubernetes namespace in which SEPP is deployed. Default value of Kubernetes namespace is "sepp-namespace". Update it to the namesapace in which SEPP is deployed.
4. Set the namespace parameter in `ocsepp_alertrules_promha_<release version>.yaml` file to SEPP Namespace.

   That is, set `Namespace` as `<SEPP Namespace>`
   Example:

   ```
   namespace="sepp-namespace" Where namespace name is ‘sepp-namespace’
   ```

5. Set the kubernetes_namespace parameter in `ocsepp_alertrules_<release version>.yaml` file to SEPP Namespace.

   That is, set `kubernetes_namespace` as `<SEPP Namespace>`
   Example:

   ```
   kubernetes_namespace="sepp-namespace" Where kubernetes_namespace
   name is ‘sepp-namespace’
   ```

6. Set the deployment parameter in `ocsepp_alertrules_promha_<release version>.yaml` and `ocsepp_alertrules_<release version>.yaml` file.

   That is, set `app_kubernetes_io_part_of` as `"<deployment name>"`
   Example:

   ```
   app_kubernetes_io_part_of="ocsepp”, Where deployment name is
   'ocsepp'
   ```


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#### 2.2.3.4.1 Configuring Alerts for CNE 1.8.x and Previous Versions

The following procedure describes how to configure the SEPP alerts for CNE version 1.8.x and previous versions:

1. Run the following command to find the config map to configure alerts in the Prometheus server:

   ```
   kubectl get configmap -n <Namespace>
   ```

   where, <Namespace> is the prometheus server namespace used in helm install command.
2. Run the following command to take backup of current config map of prometheus server:

   ```
   kubectl get configmaps <NAME>-server -o yaml -n <Namespace> > /tmp/
   tempConfig.yaml
   ```

   where, <Namespace> is the prometheus server namespace used in helm install command. For example, assuming chart name is "prometheus-alert", so "_NAME_-server" becomes "prometheus-alert-server", run the following command to find the config map:

   ```
   kubectl get configmaps prometheus-alert-server -o yaml -n prometheus-
   alert2 > /tmp/tempConfig.yaml
   ```
3. Run the following command to check if alertssepp is present in the tempConfig.yaml file:

   ```
   cat /tmp/t_mapConfig.yaml  | grep alertssepp
   ```
4. Run the following command to delete the alertssepp entry from the `t_mapConfig.yaml` file, if the alertssepp is present:

   ```
   sed -i '/etc\/config\/alertssepp/d' /tmp/t_mapConfig.yaml
   ```
5. Run the following command to add the alertssepp entry in the t_mapConfig.yaml file, if the alertssepp is not present:

   ```
   sed -i '/rule_files:/a\    \- /etc/config/alertssepp'  /tmp/
   t_mapConfig.yaml
   ```
6. Run the following command to reload the config map with the modifed file:

   ```
   kubectl replace configmap <Name> -f /tmp/t_mapConfig.yaml
   ```
7. Run the following command to add seppAlertRules.yaml file into prometheus config map under filename of SEPP alert file :

   ```
   kubectl patch configmap <Name> -n <Namespace> --type merge --patch
   "$(cat <PATH>/seppAlertRules.yaml)"
   ```
8. Restart prometheus-server pod.
9. Verify the alerts in prometheus GUI.


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> **Note**
>
> Prometheus takes about 20 seconds to apply the updated Config map.

### 2.2.3.4.2 Configuring Alerts for CNE 1.9.x and Higher Versions

The following procedure describes how to configure the SEPP alerts for OCCNE 1.9.x and higher versions:

1. Run the following command to apply the Prometheus rules Custom Resource Definition (CRD):

   ```
   kubectl apply -f <file_name> -n <sepp namespace>
   ```

   Where,

   - <file_name> is the SEPP alerts file
   - <sepp namespace> is the SEPP namespace

   Example:

   ```
   $ kubectl apply -f ocsepp_alerting_rules_promha.yaml -n seppsvc
   ```

2. Run the following command to check if SEPP alert file is added to Prometheus rules:

   ```
   $ kubectl get prometheusrules --namespace <namespace>
   ```

   Example:

   ```
   $ kubectl get prometheusrules --namespace seppsvc
   ```

3. Log in to Prometheus GUI and verify the alerts section.

> **Note**
>
> The Prometheus server takes an updated config map that is automatically reloaded after approximately 60 seconds. Refresh the Prometheus GUI to confirm that the SEPP alerts have been reloaded.

### 2.2.3.4.3 Configuring SEPP Alerts for non-OCCNE Versions

Alerts are automated by using Helm upgrade command with the Helm chart provided as part of SEPP software package. For information to download OSO software package, see *Oracle Communications, Cloud Native Core, Operations Services Overlay Installation and Upgrade Guide*. The alert automation process is as follows:

1. A new `oso-alr-config` Helm chart is provided as part of OSO package.
2. The `oso-alr-config` Helm chart must be deployed once OSO is installed.
3. This separate Helm chart allows the Helm install command to run with or without an input alert file.
   Command and example for without alert file:


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Command:

```
helm install <oso-alr-config-release-name>
<ocoso_alr_config_csar_<version>_alert_config_charts.tgz> -f
<ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml> -n
<oso_namespace>
```

Example:

```
helm install oso-alr-config
ocoso_alr_config_csar_<version>_alert_config_charts.tgz -f
ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml -n oso
```

4. Command and example for with alert file:
   Command:

```
helm install <oso-alr-config-release-name>
<ocoso_alr_config_csar_<version>_alert_config_charts.tgz> -f
<ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml> -f
ocsepp_alertrules_<version>.yaml -n <oso_namespace>
```

   Example:

```
helm install oso-alr-config
ocoso_alr_config_csar_<version>_alert_config_charts.tgz -f
ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml -f
ocsepp_alertrules_<version>.yaml  -n oso
```

5. When the `oso-alr-config` Helm chart installation is completed then the `oso-alr-config` is ready to use.
6. Run Helm upgrade, if you are enabling this feature after SEPP deployment. Run the following Helm upgrade command in `oso-alr-config` file to apply SEPP alert file:

```
 helm upgrade oso-alr-config
ocoso_alr_config_csar_<version>_alert_config_charts.tgz -f
ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml -f
ocsepp_alertrules_<version>.yaml -n oso
```

7. Once the Helm upgrade is completed, you can view the alerts file that is applied to OSO Prometheus ConfigMap. This can be viewed in the Prometheus Graphical User Interface (GUI).
8. You can also update the changes in the same alert file and perform a Helm upgrade. The alert file will be updated with the latest changes.

Perform the following steps to clear the alerts:

1. An empty `ocsepp_empty_alertrules.yaml` file is delivered as part of SEPP software package. You must provide this `ocsepp_empty_alertrules.yaml` file during the Helm upgrade.


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2. This ocsepp_empty_alertrules.yaml file is used to remove all the alerts using the Helm upgrade command by providing ocsepp_empty_alertrules.yaml file as an input file. This removes the alerts from the OSO **Prometheus ConfigMap** and **Prometheus GUI** and keeps the references under rule_files "/etc/config/alertssepp" and the alert rules will be empty "alertssepp: { }".
3. For example, a sample Helm upgrade command to clean up alert rules is as follows:
   Command:

   ```
   $ helm upgrade <oso-alr-config-release-name>
   <ocoso_alr_config_csar_<version>_alert_config_charts.tgz> -f
   <ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml> -f
   ocsepp_empty_alertrules.yaml -n <oso_namespace>
   ```

   Example:

   ```
   $ helm upgrade oso-alr-config
   ocoso_alr_config_csar_<version>_alert_config_charts.tgz -f
   ocoso_alr_config_csar_<version>_alert_config_custom_values.yaml -f
   ocsepp_empty_alertrules.yaml -n oso
   ```

Sample empty alert file is as follows:

```
apiVersion: v1
data:
  alertssepp: |
    {}
```

### 2.2.3.4.4 Configuring Alerts in OCI

The following procedure describes how to configure the SEPP alerts for OCI. The OCI supports metric expressions written in MQL (Metric Query Language) and thus, requires a new SEPP alert file for configuring alerts in OCI observability platform.

The following are the steps:

1. Run the following command to extract the .zip file:

   ```
   unzip ocsepp_oci_alertrules_<version>.zip
   ```

   The ocsepp_oci and ocsepp_oci_resources folders are available in the zip file.

   > **Note**
   >
   > The zip file is available in the Scripts folder of CSAR package.

2. Open the ocsepp_oci folder, in the notifications.tf file, update the parameter endpoint with the email id of the user.
3. Open the ocsepp_oci_resources folder, in the notifications.tf file, update the parameter endpoint with the email id of the user.


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4. Log in to the OCI Console.

> **Note**
>
> For more details about logging in to the OCI, refer to Signing In to the OCI Console.

5. Open the navigation menu and select **Developer Services**. The **Developer Services** window appears on the right pane.
6. Under the **Developer Services**, select **Resource Manager**.
7. Under **Resource Manager**, select **Stacks**. The **Stacks** window appears.
8. Click **Create Stack**.
9. Select the default **My Configuration** radio button.
10. Under Stack configuration, select the folder radio button and upload the `ocsepp_oci` folder.
11. Enter the **Name** and **Description** and select the **compartment**.
12. Select the latest Terraform version from the **Terraform version** drop-down.
13. Click **Next**. The **Edit Stack** screen appears.
14. Enter the required inputs to create the SEPP alerts or alarms and click **Save** and **Run Apply.**
15. Verify that the alarms are created in the Alarm Definitions screen (**OCI Console> Observability & Management> Monitoring>Alarm Definitions**) provided.
    The required inputs are:
    - **Alarms Configuration**
      - **Compartment Name** - Choose name of compartment from the drop-down
      - **Metric namespace** - Metric namespace that the user provided while deploying OCI Adaptors.
      - **Topic Name** - Any user configurable name. Must contain fewer than 256 characters. Only alphanumeric characters plus hyphens (-) and underscores (_) are allowed.
      - **Message Format** - Keep it as **ONS_OPTIMIZED**. (This is pre-populated)
      - **Alarm is_enabled** - Keep it as **True**. (This is pre-populated)
16. The steps 6 to 15 must be repeated for uploading the `ocsepp_oci_resources` folder. Here, **Metric namespace** will be pre-populated.

For more details, see *Oracle Communications Cloud Native Core, OCI Adaptor Deployment Guide*.


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# 3
# Customizing SEPP

This chapter provides information about customizing SEPP deployment in a cloud native environment.

The SEPP deployment is customized by overriding the default values of various configurable parameters in the `ocsepp_custom_values_25.2.200.yaml` file.

1. Navigate to the Scripts directory under the unzipped csar package. For more information on how to download the package from MOS, see Downloading SEPP package.
2. The following files are used to customize the deployment parameters during installation:
   - `ocsepp_custom_values_25.2.200.yaml`: This file is used to customize the deployment parameters during SEPP installation.
   - `ocsepp_custom_values_roaming_hub_25.2.200.yaml`: This file is used to customize the deployment parameters during Roaming Hub installation.
   - `ocsepp_dashboard_promha_25.2.200.json`: SEPP KPI and metrics representation template that should be loaded on Grafana (CNE 1.9 and Above).
   - `ocsepp_oci_dashboard_25.2.200.json`: This file is used by OCIs Logging Analytics Dashboard service for creating SEPPs metrics dashboard.
   - `ocsepp_dashboard_25.2.200.json`: SEPP KPI and metrics representation template that should be loaded on Grafana (Non CNE/OCI environment).
   - `ocsepp_alertrules_promha_25.2.200.yaml`: This file is used for Prometheus for CNE 1.9.0 and later or CNE with Prometheus Operator.
   - `ocsepp_oci_alertrules_25.2.200.zip`: This file is used by OCIs Resource Mananger (RM) stack to create SEPP alarms in OCI.
   - `ocsepp_alertrules_25.2.200.yaml`: This file is used for Prometheus.
   - `ocsepp_alertrules_rh_hosted_25.2.200.yaml`: This file is used for Prometheus. This is applicable for Roaming Hub and Hosted SEPP mode.
   - `ocsepp_alertrules_promha_rh_hosted_25.2.200.yaml`: This file is used for Prometheus for CNE 1.9.0 and later or CNE with Prometheus Operator. This is applicable for Roaming Hub and Hosted SEPP mode.
   - `ocsepp_mib_tc_25.2.200.mib`: This is considered as SEPP top level MIB file, where the Objects and their data types are defined.
   - `ocsepp_mib_25.2.200.mib`: This file fetches the Objects from the top level MIB file and based on the Alert notification, these objects can be selected for display.
   - `toplevel.mib`: This file contains TEKELEC top level reg definitions.
   - `ocsepp_configuration_openapi_25.2.200.json`: This file is OPEN API specification for SEPP configuration.
   - `ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml`: This file is used to customize the cnDBTier parameters during SEPP installation.


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- `ocsepp_single_service_account_config_25.2.200.yaml`: This file is used to create a single service account, role, and rolebinding which can be used by all the microservices of SEPP.
- `ocsepp_network_policies_custom_values_25.2.200.yaml`: This file is used while configuring network policies.
- `ocsepp_servicemesh_config_custom_values_25.2.200.yaml`: This file is used while configuring ASM Data Plane.
- `ocsepp_rollback_schema_25.2.200.sql`

3. Customize the `ocsepp_custom_values_25.2.200.yaml` file.
4. Save the updated `ocsepp_custom_values_25.2.200.yaml` file in the Helm chart directory.
5. Customize the `ocsepp_servicemesh_config_custom_values_25.2.200.yaml` file, in case ASM Data Plane must be configured. For sample file, see Configuring SEPP to Support ASM.
6. Save the updated `ocsepp_servicemesh_config_custom_values_25.2.200.yaml` file in the helm chart directory.
7. Customize the `ocsepp_network_policy_custom_values_25.2.200.yaml` file, in case network policies must be configured.
8. Save the updated `ocsepp_network_policy_custom_values_25.2.200.yaml` file in the helm chart directory.

# 3.1 Configurable Parameters

This section includes information about the configuration parameters of SEPP.

SEPP allows customization of parameters for the different microservices and related settings.

> **Note**
>
> - Mandatory parameters must be configured before the SEPP deployment.
> - By default, the plmn-egress-gateway has a single 'default' route. To enable alternate routing, user must configure alternate routes manually through CNC Console or REST API. For more information, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide* and *Oracle Communications Cloud Native Core, Security Edge Protection Proxy REST Specification Guide.*

## 3.1.1 Global Parameters

This section includes information about the global parameters of the SEPP.


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> **Note**
>
> The user can add multiple Network Load Balancer (NLB) annotations under the global section in the following format:
>
> ```
> global:
>   customExtension:
>     lbServices:
>       annotations:
>          oci-network-load-balancer.oraclecloud.com/security-list-
> management-mode: All
>          oci.oraclecloud.com/load-balancer-type: nlb
> ```
>
> All the services of type Load Balancer gets these annotations. User can also add annotations specific to a service under NF microservice section. The annotation example given here is OCI specific. It must be customized as per the platform.

**Table 3-1 Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `dockerRegistry` | This is a mandatory parameter. This is the name of the docker registry where SEPPs docker images are available. | Data Type: String<br>Range: It may contain lowercase letters, digits, and separators. A separator is defined as a period, one or two underscores, or one or more dashes.<br>Default Value: reg-1 |
| `dbCredSecretName` | This is a mandatory parameter. This attribute specifies the name of the Kubernetes secret object containing database` credentials. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| `nameSpace` | This is a mandatory parameter. This attribute specifies the name of the deployed NF. | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| `asm.serviceMeshCheck` | This is a mandatory parameter.<br>To enable ASM for all services - change flag to true<br>ASM setup: When serviceMeshCheck is enabled signature validation of certificate is skipped. There is no need to configure the certificate or the secret. | Data Type: Boolean<br>Range: true false<br>Default Value: false |
| `asm.istioSidecarQuitUrl` | This is a mandatory parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/quitquitquit |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| asm.istioSidecarReadyUrl | This is a mandatory parameter.<br>The sidecar (istio ready url)when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/ready |
| mysql.primary.host | This is a mandatory parameter.<br>This attribute specifies the IP address or hostname of the primary database connection service.<br>SEPP connects to the primary database connection service. If the primary database connection service is unavailable, then SEPP connects to the secondary database connection service. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| mysql.primary.port | This is a mandatory parameter. This attribute specifies the port that is used while connecting to primary database connection service. | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |
| mysql.secondary.host | This is a mandatory parameter.<br>This attribute specifies the IP address or hostname of the secondary database connection service.<br>SEPP connects to the secondary database connection service only if the primary database connection service is unavailable. It again switches to the primary database connection service once it is available. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| mysql.secondary.port | This is a mandatory parameter. This attribute specifies the port that is used while connecting to secondary database connection service. | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |
| seppDbName | This is a mandatory parameter.<br>It is the name of SEPP database. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| seppBackupDbName | This is a mandatory parameter. It is the name of SEPP Backup database. Defines backupdb name where backup will be created during upgrade | Data Type: String<br>Range: NA<br>Default Value: seppbackupdb |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| seppDbEngine | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or INNODB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| nfTypeMsgCpy | This is an optional Parameter.<br>Identifies a type of producer NF. | Data Type: String<br>Range: NA<br>Default Value: SEPP |
| nfInstanceIdMsgCpy | This is an optional Parameter.<br>Identifies a producer NF Instance. | Data Type: String<br>Range: NA<br>Default Value: 9faf1bbc-6e4a-4454-a507-aef01a101a06 |
| hookJob.weight.subscription | When multiple resources are declared in a hook, they are executed sequentially. If hook weights are specified, execution follows the weight order (from negative to positive). Without weights, the execution order is not guaranteed. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| mediationService | This is a mandatory parameter.<br>It is a flag to enable/disable mediation microservice. If set to true, mediation microservice will be deployed otherwise, it will not be deployed. | Data Type: Bolean<br>Range: true or false<br>Default Value: false |
| seppCoherenceServiceEnabled | This is a mandatory parameter.<br>It is a flag to enable/disable coherence service. If set to true, coherence microservice will be deployed otherwise, it will not be deployed. | Data Type: Bolean<br>Range: true or false<br>Default Value: false |
| nrfClientHost | This is a mandatory parameter.<br>This parameter defines the service name of NRF Client NF discovery. It sends a UDR discovery request to the NRF to retrieve the UDR profile required for the Category-3 Previous Location Check feature. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-release-sepp-nrf-client-nfdiscovery |
| nrfClientPort | This parameter defines the port number of NRF Client NF discovery service. It sends a UDR discovery request to the NRF to retrieve the UDR profile required for the Category-3 Previous Location Check feature. | Data Type: Integer<br>Range: NA<br>Default Value: 5910 |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| supiPattern | This parameter defines the regular expression to extract the SUPI range from UDR Profile to select the FQDN which stores the information for the UE's falling in SUPI Range. | Data Type: String<br>Range: NA<br>Default Value:<br>(?<=imsi-)[0-9]{15} |
| test.imageRepository | This is a mandatory parameter.<br>Name of the Repository. | Data Type: String<br>Range: NA<br>Default Value:reg-1 |
| test.nfName | This is a mandatory parameter.<br>NF name on which the Helm test is performed. For SEPP, the default value is SEPP and is used in container name as suffix. | Data Type: String<br>Range: NA<br>Default Value: ocsepp |
| test.image.name | This is a mandatory parameter.<br>Image name for the Helm test container image. | Data Type: String<br>Range: NA<br>Default Value: <release version> |
| test.image.tag | This is a mandatory parameter.<br>Image version tag for Helm test.<br>Image tag to be used for Helm test container. | Data Type: String<br>Range: NA<br>Default Value: <release version> |
| test.image.pullpolicy | This is a mandatory parameter.<br>Image pull policy. | Data Type: String<br>Range:<br>Always, IfNotPresent, Never<br>Default Value: Always |
| test.config.logLevel | This is a mandatory parameter.<br>Log level for Helm test pod. | Data Type: String<br>Range:<br>WARN<br>INFO<br>DEBUG<br>Default Value: WARN |
| test.config.timeout | This is a mandatory parameter.<br>Option timeout is the total time required for deployment of SEPP and Helm test to take place for checking the readiness probe of SEPP pods. If the timeout value exceeds, Helm test is considered as failure. | Data Type: Integer<br>Range: Min-0, Max:65535 Unit: seconds<br>Unit: seconds<br>Default Value: 180 |
| test.complianceEnable | This is a mandatory parameter.<br>This field performs compliance check for each Kubernetes resource and Indicates whether or not the Kubernetes logging feature is enabled. | Data Type: Bolean<br>Range: True or False<br>Default Value: True |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `test.k8resources` | This is a mandatory parameter.<br>Kubernetes resources for which the API version information needs to be fetched. | Data Type: String<br>Default Value: horizontalpodautoscalers/v1<br>• deployments/v1<br>• configmaps/v1<br>• prometheusrules/v1<br>• serviceaccounts/v1<br>• poddisruptionbudgets/v1<br>• roles/v1<br>• services/v1<br>• rolebindings/v1 |
| `nrfClientEnabled` | This is a mandatory parameter.<br>Whether nrf client services are required or not.<br>If mode is nrfClientDisable / Roaming Hub then this value should be set to false. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| `test.limits.memory` | This is an optional parameter.<br>Specifies the maximum memory allocated. | Data Type: String<br>Default Value: 1Gi |
| `podSecurityPolicy` | This is a mandatory parameter.<br>This parameter allows for default security policies to be set on the cluster. | Data Type: String<br>Range: DISABLED, ENABLED<br>Default Value: DISABLED |
| `securityContextData` | This is a mandatory parameter.<br>This parameter enables security Context settings such as runAsNonRoot, readOnlyRootFilesystem, runAsUser, runAsGroup. | Data Type: Boolean<br>Range: DISABLED, ENABLED<br>Default Value: ENABLED |
| `runAsNonRoot` | This is a mandatory parameter.<br>This parameter is used to prevent containers from being run as the root user. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| `readOnlyRootFilesystem` | This is a mandatory parameter.<br>This setting is used to prevent write access to a container's root filesystem.<br>**Note:**<br>The parameter readOnlyRootFilesystem should be false for non occne setups- OKE, OCI etc. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `allowPrivilegeEscalation` | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. allowPrivilegeEscalation is always set to true when the container:<br>• is run as privileged.<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `privileged` | This is a mandatory parameter.<br>Provides mediation containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `runAsUser` | This is a mandatory parameter.<br>This setting in Kubernetes is used to specify the user ID that should be used to run a container. | Data Type: Integer<br>Default Value: 10012 |
| `runAsGroup` | This is a mandatory parameter.<br>This setting specifies the group ID under which the container's main process should run. | Data Type: Integer<br>Default Value: 10012 |
| `extraContainers` | This is a mandatory parameter.<br>The flag can be used to enable or disable injecting extra container. | Data Type: String<br>Range: DISABLED, ENABLED<br>Default Value: DISABLED |
| `debugToolContainerMemoryLimit` | This is a mandatory parameter.<br>Memory limit for debug tool container. | Data Type: String<br>Range: NA<br>Default Value: 4Gi |
| `extraContainersImageDetails.image` | This is a mandatory parameter.<br>Docker image name. | Data Type: String<br>Range: NA<br>Default Value: ocdebugtool/ocdebug-tools |
| `extraContainersImageDetails.tag` | This is a mandatory parameter.<br>Docker image tag. | Data Type: String<br>Range: NA<br>Default Value: debug_container_tag |
| `extraContainersImageDetails.imagePullPolicy` | This is a mandatory parameter.<br>Image Pull Policy. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| `extraContainersVolumesTpl.name` | This is a mandatory parameter.<br>Name of the volume for debug tool logs storage. | Data Type: String<br>Range: NA<br>Default Value: debug-tools-dir |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `extraContainersVolumesTpl.emptyDir.medium` | This is a mandatory parameter.<br>Where emptyDir volume is stored. | Data Type: String<br>Range: Memory<br>Default Value: Memory |
| `extraContainersVolumesTpl.emptyDir.sizeLimit` | This is a mandatory parameter.<br>emptyDir volume size. | Data Type: String<br>Default Value: |
| `extraContainersTpl.command` | This is a mandatory parameter.<br>String array used for container command. | Data Type: String Array<br>Range:<br>/bin/sleep<br>infinity<br>Default Value:<br>/bin/sleep<br>infinity |
| `extraContainersTpl.name` | This is a mandatory parameter.<br>Name of the container. | Data Type: String<br>Range: tools<br>Default Value: tools |
| `extraContainersTpl.resources.requests.ephemeral-storage` | This is a mandatory parameter.<br>Specifies the maximum amount of compute resources permitted, including limits on ephemeral storage.<br>. | Data Type: String<br>Range: NA<br>Default Value: 512 Mi |
| `extraContainersTpl.resources.requests.cpu` | This is a mandatory parameter.<br>CPU requests | Data Type: Integer<br>Range: NA<br>Default Value: 0.5 |
| `extraContainersTpl.resources.requests.memory` | This is a mandatory parameter.<br>Memory requests. | Data Type: String<br>Range: NA<br>Default Value: |
| `extraContainersTpl.resources.limits.ephemeral-storage` | This is a mandatory parameter.<br>Limits define the maximum amount of compute resources allowed, including constraints on ephemeral storage. | Data Type: String<br>Range: NA<br>Default Value: 512 Mi |
| `extraContainersTpl.resources.limits.cpu` | This is a mandatory parameter.<br>CPU requests | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `extraContainersTpl.resources.limits.memory` | This is a mandatory parameter.<br>Memory requests | Data Type: String<br>Range: NA<br>Default Value: |
| `extraContainersTpl.securityContext.allowPrivilegeEscalation` | This is a mandatory parameter.<br>AllowPrivilegeEscalation controls whether a process can gain more privileges than its parent process. This flag directly controls if the no_new_privs flag will be set on the container process. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `extraContainersTpl.securityContext.capabilities.drop` | This is a mandatory parameter.<br>securityContext.capabilities is the capabilities to add/drop when running containers. Defaults to the default set of capabilities granted by the container runtime.<br>Removed capabilities. | Data Type: String<br>Range: ALL<br>Default Value: ALL |
| `extraContainersTpl.securityContext.capabilities.add` | This is a mandatory parameter.<br>securityContext.capabilities is the capabilities to add/drop when running containers. Defaults to the default set of capabilities granted by the container runtime.<br>Added capabilities. | Data Type: String<br>Range:<br>NET_RAW<br>NET_ADMIN<br>Default Value:<br>NET_RAW<br>NET_ADMIN |
| `extraContainersTpl.securityContext.runAsUser` | This is an mandatory parameter.<br>The UID to run the entrypoint of the container process. | Data Type: String<br>Range: NA<br>Default Value: |
| `extraContainersTpl.volumeMounts.mountPath` | This is an mandatory parameter.<br>For mounting the volume. | Data Type: String<br>Range: NA<br>Default Value: /tmp/tools |
| `extraContainersTpl.volumeMounts.name` | This is an mandatory parameter.<br>Name of the directory for debug tool logs storage | Data Type: String<br>Range: NA<br>Default Value: debug-tools-dir |
| `debugToolContainerMemoryLimit` | This is an optional parameter.<br>Indicates the memory assigned for the debug tool container. | Data Type: String<br>Default Value: 4Gi<br>Range: NA |
| `extraContainersVolumesTpl` | This is an optional parameter.<br>Specifies the extra container template for the debug tool volume. | Data Type: array<br>Default Value: NA<br>Range: NA |
| `extraContainersVolumesTpl.name` | This is an optional parameter.<br>Indicates the name of the volume for debug tool logs storage. | Data Type: array<br>Default Value: debug-tools-dir<br>Range: NA |
| `extraContainersVolumesTpl.emptyDir.medium` | This is an optional parameter.<br>Indicates the location where `emptyDir` volume is stored. | Data Type: array<br>Default Value: Memory<br>Range: NA |
| `extraContainersVolumesTpl.emptyDir.sizeLimit` | This is an optional parameter.<br>Indicates the `emptyDir` volume size. | Data Type: array<br>Default Value: Memory<br>Range: NA |
| `customExtension.allResources.labels` | This is an optional parameter.<br>Custom Labels that need to be added to all the SEPP Kubernetes resources | Data Type: String<br>Range: NA<br>Default Value: null |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| customExtension.allResources.annotations | This is an optional parameter.<br>Custom Annotations that need to be added to all the OCSEPP Kubernetes resources. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.lbServices.labels | This is an optional parameter. Custom Labels that needs to be added to OCSEPP Services that are considered as Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.lbServices.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to OCSEPP Services that are considered as Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.lbDeployments.labels | This is an optional parameter.<br>Custom Labels that needs to be added to OCSEPP Deployments that are associated to a Service which is of Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.lbDeployments.annotations | This is an optional Parameter. Custom Annotations that needs to be added to OCSEPP deployments that are associated to a Service which is of Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: {} |
| customExtension.nonlbServices.labels | This is an optional parameter.<br>Custom Labels that needs to be added to OCSEPP Services that are considered as not Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.nonlbServices.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to OCSEPP Services that are considered as not Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.nonlbDeployments.labels | This is an optional parameter.<br>Custom Labels that needs to be added to OCSEPP Deployments that are associated to a Service which is not of Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: null |
| customExtension.nonlbDeployments.annotations | This is an optional Parameter.<br>Custom Annotations that needs to be added to OCSEPP deployments that are associated to a Service which is not of Load Balancer type. | Data Type: String<br>Range: NA<br>Default Value: {} |
| KubernetesResource.container.prefix | This is an optional Parameter.<br>Value that will be prefixed to all the container names of OCSEPP. | Data Type: String<br>Range: NA<br>Default Value: null |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `KubernetesResource.container.suffix` | This is an optional Parameter.<br>Value that will be suffixed to all the container names of OCSEPP. | Data Type: String<br>Range: NA<br>Default Value: null |
| `configMgrPort` | This is a mandatory parameter.<br>SEPP config manager port number. | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| `hookJobResources.limits.cpu` | This is a mandatory parameter.<br>This parameter indicates the resources that are given to hook jobs running for each microservice. Resource requirements (limit of CPU). | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| `hookJobResources.limits.memory` | This is a mandatory parameter.<br>This parameter indicates the resources that are given to hook jobs running for each microservice. Resource requirements (limit of memory). | Data Type: Integer<br>Range: NA<br>Default Value: 2Gi |
| `hookJobResources.requests.cpu` | This is a mandatory parameter.<br>This parameter indicates the resources that are given to hook jobs running for each microservice. Resource Requirements (requests of CPU). | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `hookJobResources.requests.memory` | This is a mandatory parameter.<br>This parameter indicates the resources that are given to hook jobs running for each microservice. Resource requirements(requests of memory). | Data Type: Integer<br>Range: NA<br>Default Value: 2Gi |
| `enableOpenTelemetry` | This is an optional parameter.<br>For enabling the open Telemetry for all SEPP services. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `allowPrivilegeEscalation` | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. allowPrivilegeEscalation is always set to true when the container:<br>• is run as privileged.<br>• has CAP_SYS_ADMIN. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `privileged` | This is a mandatory parameter.<br>Provides mediation containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `serviceAccountName` | This is an optional parameter.<br>This parameter povides the name of the already created single service account to be used by all the SEPP microservice. It has to be created by the user. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `atsSpecificDeployment` | This is a mandatory parameter. This parameter is set to true if the SEPP is deploying for internal lab testing through ATS and not for production environment. Based on this variable certain timeout values will be set dynamically which are needed for ATS to run. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `atsSpecificTimeouts.n32fCacheRefreshTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets the following timeout values for cn32f and pn32f microservice of SEPP:<br>• cacheRefreshTimeout<br>• securityCacheRefreshTimeout<br>• topologyhidingCacheRefreshTimeout<br>• nrfDiscoveryCacheRefreshTimeout | Data Type: Integer<br>Range:<br>Default Value:1000 |
| `atsSpecificTimeouts.n32fRequestTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets requestTimeout for cn32f and pn32f microservices of SEPP. | Data Type: Integer<br>Range:NA<br>Default Value: 2000 |
| `atsSpecificTimeouts.egwRequestTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets requestTimeout for n32-egress-gateway and plmn-egress-gateway microservices of SEPP. | Data Type: Integer<br>Range:<br>Default Value: 2000 |
| `atsSpecificTimeouts.igwRequestTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets requestTimeout for n32-ingress-gateway microservice of SEPP. | Data Type: Integer<br>Range:<br>Default Value: 5000 |
| `atsSpecificTimeouts.pn32fEvictSanHeaderCacheDelay` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets evictSanHeaderCacheDelay for pn32f microservice of SEPP. | Data Type: Integer<br>Range:<br>Default Value: 100 |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| atsSpecificTimeouts.configMgrEgwRerouteAttempts | This is a mandatory parameter (if atsSpecificDeployment is set to true).<br>This parameter sets sbiRoutingErrorActionSets attempts of config-mgr service in case of alternate routing. | Data Type: Integer<br>Range:<br>Default Value: 3 |
| seppLciEnabledN32Ingress | This is a mandatory parameter. If this parameter is set to true, LCI Header support over n32-ingress-gateway is enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| seppOciEnabledN32Ingress | This is a mandatory parameter. If this parameter is set to true, OCI Header support over n32-ingress-gateway will be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| seppLciEnabledPlmnIngress | This is a mandatory parameter. If this parameter is set to true, LCI Header support over plmn-ingress-gateway will be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| seppOciEnabledPlmnIngress | This is a mandatory parameter. If this parameter is set to true, OCI Header support over plmn-ingress-gateway will be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| egwPeerMonitoringThreshold | This is a mandatory parameter.<br>This parameter is used to set success or failure threshold in peer monitoring configuration for proactive status update. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| global.tlsVersionSupportForKubeApiServer.enabled | This is a mandatory parameter. This parameter enables TLS 1.3 for communication between SEPP services and Kubernetes API server.<br>When the parameter is set to true, SEPP Services communicate with the Kubernetes API server using configured version in global.tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion<br>When the parameter is set to false, SEPP Services communicate with the Kubernetes API server using only TLS 1.2. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| global.tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion | This is a mandatory parameter.<br>This parameter defines the TLS version to be used. | Data Type: String<br>Range: TLSv1.3 or TLSv1.2<br>Default Value: TLSv1.3 |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| `global.tlsVersionSupportForKubeApiServer.cipherSuites` | This is a mandatory parameter.<br>This parameter list of CiperSuites used for the configured TLS version. Using this parameter, you can configure the required CiperSuites. | Data Type: String<br>Range:<br>If kubeApiServerTlsVersion is set to TLSv1.3, then use the following ciphers<br>`- TLS_AES_256_GCM_SHA384`<br>`- TLS_AES_128_GCM_SHA256`<br>`- TLS_CHACHA20_POLY1305_SHA256`<br>If kubeApiServerTlsVersion is set to TLSv1.2, then use the following ciphers<br>`- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256`<br>`- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256`<br>`- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256`<br>Default Value: TLS_AES_256_GCM_SHA384,TLS_AES_128_GCM_SHA256,TLS_CHACHA20_POLY1305_SHA256 |
| `autoCreateResources.enabled` | This is a mandatory parameter.<br>This flag is used to enable the auto creation of resources. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `autoCreateResources.serviceAccount.create` | This is a mandatory parameter.<br>This flag enables the auto creation of single service account if the name is provided and individual service accounts if not. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| `global.seppSbiTimerTimezone` | This is an optional parameter.<br>This flag is used to configure Timezone mode for SBI timer logic for all gateway services. | **Data Type**: String<br>**Default Value**: GMT<br>**Range**: GMT,ANY |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| global.seppMaxRspTimerEnabled | This is an optional parameter.<br>This global flag is used to enable or disable Support for Max-Response Timer Header feature for calculating request timeout in OCSEPP for all gateway services. | **Data Type**: boolean<br>**Default Value**: false<br>**Range**: NA |
| global.sniHeaderName | This is a conditional parameter.<br>This parameter indicates the SNI header name for SEPP services to read. | Data Type: String<br>Range: String<br>Default Value: x-sni-value |
| global.hostedSepp | This is a mandatory parameter.<br>This flag enables the Hosted SEPP mode. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| **Local Profile** | | |
| localProfile.name | This is a mandatory parameter.<br>SEPP Local Profile Name. | Data Type: String<br>Range: NA<br>Default Value: SEPP-1 |
| localProfile.plmnIdList | This is a mandatory parameter.<br>List of local PLMN IDs supported by this network. List is in the form of MCC and MNC.Currently, in MNO SEPP mode, the deployment and configuration supports a single serving PLMN, with maximum 30 PLMN IDs mapped to that PLMN for identification and routing purposes.<br>This parameter can be set to [] for Hosted SEPP Mode | Data Type: String<br>Range count: Minimum 1 and maximum 30 PLMNs<br>Default Value: [{"mcc": "332","mnc": "221"}] |
| localProfile.sbiTargetApiRootSupported | This is a mandatory parameter.<br>This parameter signifies whether 3gpp-sbitargte-api-root-header is supported by this SEPP or not. | Data Type: Boolean<br>Range: True or False<br>Default Value: True (for Oracle SEPP) |
| localProfile.n32cHandshakePlmnIdListValidationEnabled | This parameter is used to enable or disable PLMN ID List Validation in Exchange Capability Request/Response. | Data Type: Boolean<br>Range: True or False<br>Default Value: True (for Oracle SEPP) |
| localProfile.n32cHandshakePlmnIdListValidationType | This parameter indicate PLMN ID List Validation Type in Exchange Capability Request/Response. | Data Type: String<br>Range: SUBSET/ STRICT<br>Default Value: SUBSET |
| localProfile.n32cHandshakePlmnIdListSend | Indicates whether the list of PLMN IDs can be sent in the exchange capability request to Remote SEPP. | Data Type: Boolean<br>Range: True or False<br>Default Value: True for SEPP mode and False for Roaming hub mode. |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| localProfile.sanValidationRequired | This is an optional parameter.<br>SAN validation is enabled for incoming capability-exchange handshake request or not. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| localProfile.domain | This is a mandatory parameter.<br>SEPP Local Domain. | Data Type: String<br>Range: NA<br>Default Value: svc.cluster.com |
| localProfile.seppViaVersion | This is a mandatory parameter.<br>The version number of the SEPP local profile. | Data Type: String<br>Range: NA<br>Default Value: 2.0 |
| localProfile.viaHeaderSeppViaInterFqdn | This is a mandatory parameter.<br>This parameter is used to configure the inter FQDN for Network and will be used in via header N32F message to be sent to Remote SEPP. | Data Type: String<br>Range: NA<br>Default Value: 2.0 SEPP-sepp2.inter.oracle.com |
| localProfile.viaHeaderSeppViaIntraFqdn | This is a mandatory parameter.<br>This parameter is used to configure the intra FQDN for Network and will be used in via header N32F message to be sent to NF in home network. | Data Type: String<br>Range: NA<br>Default Value: 2.0 SEPP-ocsepp-plmn-ingress-gateway.DEPLOYMENT_NAMESPACE |
| localProfile.interPlmnFqdn | This is a mandatory parameter.<br>SEPP FQDN for Inter PLMN Access. This value should match with FQDN in ssl.conf file used for creating certificate. | Data Type: String<br>Range: NA<br>Default Value: sepp1.inter.oracle.com |
| localProfile.intraPlmnFqdn | This is a mandatory parameter.<br>SEPP FQDN for Intra PLMN Access. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-ingress-gateway.DEPLOYMENT_NAMESPACE |
| localProfile.supportedSecurityCapabilityList | This is a mandatory parameter.<br>SEPP supported security capability (Only TLS is supported in this release). | Data Type: String<br>Range: NA<br>Default Value: TLS |
| localProfile.apiPrefix | This is an optional parameter.<br>SEPP apiPrefix. | Data Type: String<br>Range: NA<br>Default Value: "" |
| localProfile.retryInterval | This is a mandatory parameter.<br>SEPP Audit retry interval (For handshake Retry). | Data Type: Integer<br>Range: NA<br>Default Value: 300000 (In milli seconds) |


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**Table 3-1 (Cont.) Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| localProfile.maxRetry | This is a mandatory parameter.<br>SEPP Audit Max retry count (for handshake retry), Default is -1 means infinite. | Data Type: Integer<br>Range: -1 means no limit on retry count. Mean infinite.<br>Default Value: -1 |
| localProfile.nfInstanceId | This is a mandatory parameter.<br>SEPP NF Instance Id. | Data Type: String<br>Range: NA<br>Default Value: 9faf1bbc-6e4a-4454-a507-aef01a101a06 |
| global.localProfile.EnhancedLoggingNFType | This is a mandatory parameter. Specifies the nfType of SEPP that is used as NF type. | **Data type**: String<br>**Default Value**: SEPP |
| global.localProfile.maxDetailsLength | This is an optional parameter. This attribute determines the maximum length limit of compiled error string by SEPP in the details field. | **Data type**: Integer<br>**Range:**100-3000<br>**Default Value**: 500 |
| global.nfFqdn | This is a mandatory parameter. Indicates the fully qualified domain name (FQDN) of SEPP. | **Data type**: String<br>**Default Value**: sepp2.inter.oracle.com |

## 3.1.2 cn32c-svc

This section includes information about the cn32c-svc parameters of the SEPP.

**Table 3-2 cn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32c-svc.extraContainers | This is a mandatory parameter.<br>Use 'extraContainers' attribute to control the usage of extra container(DEBU G tool).<br># If assigned with ENABLED or USE_GLOBAL_V ALUE, then ensure "extraContainers Tpl" Yaml chunk is defined<br># at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| cn32c-svc.image.repository | This is a mandatory parameter.<br>Repo location of image. | Data Type: String<br>Range: NA<br>Default Value: reg-1 |
| cn32c-svc.image.name | This is a mandatory parameter.<br>Name of image. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-cn32f-svc |


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**Table 3-2 (Cont.) cn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32c-svc.image.tag | This is a mandatory parameter.<br>Tag of image. | Data Type: String<br>Range: NA<br>Default Value: helm-tag |
| cn32c-svc.image.pullPolicy | This is a mandatory parameter.<br>This setting indicates if the image needs to be pulled or not. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| cn32c-svc.minReplicas | This is a mandatory parameter.<br>Minimum Number of Replicas. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| cn32c-svc.maxReplicas | This is a mandatory parameter.<br>Maximum num of replicas of pod. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| cn32c-svc.log.root | This is a mandatory parameter.<br>Root log level. | Data Type: String<br>Range: WARN, INFO, DEBUG , ERROR<br>Default Value: ERROR |
| cn32c-svc.log.sepp | This is a mandatory parameter.<br>Sepp sepecific log level. | Data Type: String<br>Range: WARN, INFO, DEBUG, ERROR<br>Default Value: ERROR |
| cn32c-svc.resources.limit.cpu | This is a mandatory parameter.<br>Resource Requirements(limit of cpu) | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| cn32c-svc.resources.limit.memory | This is a mandatory parameter.<br>Resource Requirements(limit of memory). | Data Type: Integer<br>Range: NA<br>Default Value: 2Gi |
| cn32c-svc.resources.requests.cpu | This is a mandatory parameter.<br>Resource Requirements(requested cpu). | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| cn32c-svc.resources.requests.memory | This is a mandatory parameter.<br>Resource Requirements(requested memory). | Data Type: Integer<br>Range: NA<br>Default Value: 2Gi |
| cn32c-svc.resources.target.averageCpuUtil | This is a mandatory parameter.<br>Resource Requirements(avg cpu utilisation). | Data Type: Integer<br>Range: NA<br>Default Value: 70 |
| cn32c-svc.maxSurge | This is a mandatory parameter.<br>The number of pods that can be created above the desired amount of pods during an update | Data Type: Integer<br>Range: NA<br>Default Value: 25% |
| cn32c-svc.maxUnavailable | This is a mandatory parameter.<br>The number of pods that can be unavailable during an update. | Data Type: Integer<br>Range: NA<br>Default Value: 0% |


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**Table 3-2 (Cont.) cn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32c-svc.pdbMaxUnavailable | This is a mandatory parameter.<br>PDB limits the number of Pods of a replicated application that are down simultaneously from voluntary disruptions. | Data Type: Integer<br>Range: NA<br>Default Value: 25% |
| cn32c-svc.bodyInTraceEnabled | This is an optional parameter.<br>Enables openTelemetry trace for Body. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32c-svc.openTelemetry.jaeger.httpExporter.host | This is an optional parameter.<br>openTelemetry host | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| cn32c-svc.openTelemetry.jaeger.httpExporter.port | This is an optional parameter.<br>openTelemetry port | Data Type: Integer<br>Range: NA<br>Default Value: 4318 |
| cn32c-svc.openTelemetry.jaeger.logSpans | This is an optional parameter.<br>openTelemetry logspans | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32c-svc.openTelemetry.jaeger.probabilisticSamplingRate | This is an optional parameter.<br>Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 (Note: it means 50%) |
| cn32c-svc.nameSpace | This is a mandatory parameter.<br>This parameter is used for displaying namespace and corresponding service name from where the traces are generated. | Data Type: String<br>Range: NA<br>Default Value: Value will be deployment namespace as per custom-values.yaml file. |
| cn32c-svc.enableOpenTelemetry | This is an optional parameter.<br>This parameter enables the openTelemetry. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32c-svc.service.active.svcPortHttp | This is a mandatory parameter.<br>It defines the http port for cn32c service. | Data Type: Integer<br>Range: NA<br>Default Value: 8081 |
| cn32c-svc.service.active.svcPortHttps | This is a mandatory parameter.<br>It defines the https port for cn32c service. | Data Type: Integer<br>Range: NA<br>Default Value: 8082 |
| cn32c-svc.service.active.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 8085 |
| cn32c-svc.service.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to cn32c specific Service. | Data Type: String<br>Range: NA<br>Default Value: { } |


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**Table 3-2 (Cont.) cn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32c-svc.service.customExtension.anotations | This is an optional parameter.<br>Custom Annotations that needs to be added to cn32c specific Services. | Data Type: String<br>Range: NA<br>Default Value: { } |
| cn32c-svc.deployment.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to cn32c specific Deployment | Data Type: String<br>Range: NA<br>Default Value: { } |
| cn32c-svc.deployment.customExtension.annotations | This is an optional parameter.Custom Annotations that needs to be added to cn32c specific Deployment. | Data Type: String<br>Range: NA<br>Default Value: { } |
| cn32c-svc.resources.requests.ephemeralStorage | This is an optional parameter.<br>pods and containers can require ephemeral storage for their operation. | Data Type: String<br>Range: depends on cluster resources<br>Default Value: 70Mi |
| cn32c-svc.resources.limits.ephemeralStorage | This is an optional parameter.<br>Pods use ephemeral local storage for scratch space, caching, and logs. | Data Type: String<br>Range: depends on cluster Resources<br>Default Value: 1Gi |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | Data Type: Integer<br>Default Value: 30000ms |
| cn32c-svc.startupProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| cn32c-svc.startupProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| cn32c-svc.startupProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-2 (Cont.) cn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32c-svc.startupProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| cn32c-svc.startupProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| cn32c-svc.readinessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| cn32c-svc.readinessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| cn32c-svc.readinessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| cn32c-svc.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| cn32c-svc.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-2 (Cont.) cn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32c-svc.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| cn32c-svc.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| cn32c-svc.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 5<br>Range: NA |
| cn32c-svc.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| cn32c-svc.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 5<br>Range: NA |
| cn32c.sniHeaderName | This is a conditional parameter.<br>This parameter indicates the SNI header name for SEPP services to read. | Data Type: String<br>Range: String<br>Default Value: x-sni-value |

## 3.1.3 pn32c-svc

This section includes information about the pn32c-svc parameters of the SEPP.


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**Table 3-3 pn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32c-svc.extraContainers | This is a mandatory parameter.<br>Use 'extraContainers' attribute to control the usage of extra container(DEBU G tool).<br># If assigned with ENABLED or USE_GLOBAL_V ALUE, then ensure "extraContainers Tpl" Yaml chunk is defined<br># at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: ENUM<br>Range : DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| pn32c-svc.image.repository | This is a mandatory parameter.Repo location of image | Data Type: String<br>Range : NA<br>Default Value: reg-1 |
| pn32c-svc.image.name | This is a mandatory parameter.Name of image | Data Type: String<br>Range : NA<br>Default Value: ocsepp-pn32c-svc |
| pn32c-svc.image.tag | This is a mandatory parameter.Tag of image | Data Type: String<br>Range : NA<br>Default Value: helm-tag |
| pn32c-svc.image.pullPolicy | This is a mandatory parameter.This setting indicates if the image needs to be pulled or not | Data Type: String<br>Range : NA<br>Default Value: Always |
| pn32c-svc.minReplicas | This is a mandatory parameter.Minimum Number of Replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range : NA<br>Default Value: 2 |
| pn32c-svc.maxReplicas | This is a mandatory parameter.Maximum num of replicas of pod to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range : NA<br>Default Value: 2 |
| pn32c-svc.maxSurge | This is a mandatory parameter.<br>The number of pods that can be created above the desired amount of pods during an update | Data Type: Integer<br>Range : NA<br>Default Value: 25% |
| pn32c-svc.maxUnavailable | This is a mandatory parameter.<br>The number of pods that can be unavailable during an update | Data Type: Integer<br>Range : NA<br>Default Value: 0% |
| pn32c-svc.pdbMaxUnavailable | This is a mandatory parameter.<br>PDB limits the number of Pods of a replicated application that are down simultaneously from voluntary disruptions. | Data Type: Integer<br>Range : NA<br>Default Value: 25% |


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**Table 3-3 (Cont.) pn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32c-svc.log.root | This is a mandatory parameter.<br>Root log level | Data Type: String<br>Range: WARN, INFO, DEBUG, ERROR<br>Default Value: ERROR |
| pn32c-svc.log.sepp | This is a mandatory parameter.<br>Sepp specific log level | Data Type: String<br>Range: WARN, INFO, DEBUG, ERROR<br>Default Value: ERROR |
| pn32c-svc.resources.limit.cpu | This is a mandatory parameter.<br>Resource Requirements(limit of cpu) | Data Type: Integer<br>Range : NA<br>Default Value: 2 |
| pn32c-svc.resources.limit.memory | This is a mandatory parameter.<br>Resource Requirements(limit of memory) | Data Type: String<br>Range : NA<br>Default Value: 2Gi |
| pn32c-svc.resources.requests.cpu | This is a mandatory parameter.<br>Resource Requirements(requested cpu) | Data Type: Integer<br>Range : NA<br>Default Value: 1 |
| pn32c-svc.resources.requests.memory | This is a mandatory parameter.<br>Resource Requirements(requested memory) | Data Type: String<br>Range : NA<br>Default Value: 1Gi |
| pn32c-svc.resources.target.averageCpuUtil | This is a mandatory parameter.<br>Resource Requirements(avg cpu utilisation) | Data Type: Integer<br>Range : NA<br>Default Value: 50 |
| pn32c-svc.service.active.svcPortHttp | This is a mandatory parameter.<br>It defines the http port for pn32c service | Data Type: Integer<br>Range : NA<br>Default Value: 8083 |
| pn32c-svc.service.active.svcPortHttps | This is a mandatory parameter.<br>It defines the https port for pn32c service | Data Type: Integer<br>Range : NA<br>Default Value: 8084 |
| pn32c-svc.service.active.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range : NA<br>Default Value: 8085 |
| pn32c-svc.configs.sanHeaderName | This is a mandatory parameter.<br>Header name to use to pick SAN values at PN32F | Data Type: String<br>Range : NA<br>Default Value: x-custom-ingress-client-identity |
| pn32c-svc.configs.extractSANRegex | This is a mandatory parameter.<br>Regex expression to use to extract SAN values at PN32F | Data Type: String<br>Range : NA<br>Default Value: SAN=(.*)\\s |


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**Table 3-3 (Cont.) pn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32c-svc.configs.extractSANDelimiter | This is a mandatory parameter.<br>Delimiter used for extracting SAN values at PN32F | Data Type: String<br>Range : NA<br>Default Value: "," |
| pn32c-svc.jaegerTracingEnabled | This is an optional parameter.<br>Enable Jaeger trace | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32c-svc.bodyInTraceEnabled | This is an optional parameter.<br>Enable Jaeger trace for Body | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32c-svc.openTelemetry.jaeger.httpExporter.host | This is an optional parameter.<br>openTelemetry host | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| pn32c-svc.openTelemetry.jaeger.httpExporter.port | This is an optional parameter.<br>openTelemetry port | Data Type: Integer<br>Range: NA<br>Default Value: 4318 |
| pn32c-svc.openTelemetry.jaeger.logSpans | This is an optional parameter.<br>openTelemetry logspans | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32c-svc.openTelemetry.jaeger.probabilisticSamplingRate | This is an optional parameter.<br>Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 (Note: it means 50%) |
| pn32c-svc.nameSpace | This is a mandatory parameter.<br>This parameter is used for displaying namespace and corresponding service name from where the traces are generated. | Data Type: String<br>Range: NA<br>Default Value: Value will be deployment namespace as per custom-values.yaml file. |
| pn32c-svc.enableOpenTelemetry | This is an optional parameter.<br>This parameter enables the openTelemetry. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32c-svc.service.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to pn32c specific Services | Data Type: String<br>Range : NA<br>Default Value: |
| pn32c-svc.service.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to pn32c specific Services | Data Type: String<br>Range : NA<br>Default Value: |
| pn32c-svc.deployment.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to pn32c specific Deployment | Data Type: String<br>Range : NA<br>Default Value: |


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**Table 3-3 (Cont.) pn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| `pn32c-svc.deployment.customExtension.annotations` | This is an optional parameter.<br>Custom Annotations that needs to be added to pn32c specific Deployment | Data Type: String<br>Range : NA<br>Default Value: |
| `pn32c-svc.resources.requests.ephemeralStorage` | This is an optional parameter.<br>pods and containers can require ephemeral storage for their operation. | Data Type: String<br>Range: depends on cluster resources<br>Default Value: 75Mi |
| `pn32c-svc.resources.limits.ephemeralStorage` | This is an optional parameter.<br>Pods use ephemeral local storage for scratch space, caching, and logs. | Data Type: String<br>Range: depends on cluster Resources<br>Default Value: 1Gi |
| `dbCheckRefreshTimeout` | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | Data Type: Integer<br>Default Value: 30000ms |
| `pn32c-svc.startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `pn32c-svc.startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `pn32c-svc.startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `pn32c-svc.startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |


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**Table 3-3 (Cont.) pn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32c-svc.startupProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| pn32c-svc.readinessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| pn32c-svc.readinessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| pn32c-svc.readinessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| pn32c-svc.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| pn32c-svc.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-3 (Cont.) pn32c-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32c-svc.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| pn32c-svc.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| pn32c-svc.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 5<br>Range: NA |
| pn32c-svc.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| pn32c-svc.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 5<br>Range: NA |
| pn32c.sniHeaderName | This is a conditional parameter.<br>This parameter indicates the SNI header name for SEPP services to read. | Data Type: String<br>Range: String<br>Default Value: x-sni-value |

## 3.1.4 cn32f-svc

This section includes information about the cn32f-svc parameters of the SEPP.


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**Table 3-4 cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.extraContainers | This is a mandatory parameter.<br>Use 'extraContainers' attribute to control the usage of extra container(DEBU G tool).<br># If assigned with ENABLED or USE_GLOBAL_V ALUE, then ensure "extraContainers Tpl" Yaml chunk is defined<br># at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| cn32f-svc.image.repository | This is a mandatory parameter.Repo location of image | Data Type: String<br>Range : NA<br>Default Value: reg-1 |
| cn32f-svc.image.name | This is a mandatory parameter.Name of image | Data Type: String<br>Range : NA<br>Default Value: ocsepp-cn32f-svc |
| cn32f-svc.image.tag | This is a mandatory parameter.Tag of image | Data Type: String<br>Range : NA<br>Default Value: helm-tag |
| cn32f-svc.image.pullPolicy | This is a mandatory parameter.This setting indicates if the image needs to be pulled or not | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| cn32f-svc.minReplicas | This is a mandatory parameter.Minimum Number of Replicas for cn32f service | Data Type: Integer<br>Range : NA<br>Default Value: 14 |
| cn32f-svc.maxReplicas | This is a mandatory parameter.Maximum num of replicas for cn32f service | Data Type: Integer<br>Range : NA<br>Default Value: 14 |
| cn32f-svc.log.root | This is a mandatory parameter.Root log level | Data Type: String<br>Range: WARN, INFO, DEBUG, ERROR<br>Default Value: ERROR |
| cn32f-svc.log.sepp | This is a mandatory parameter.Sepp specific log level | Data Type: String<br>Range: WARN, INFO, DEBUG,ERROR<br>Default Value: ERROR |
| cn32f-svc.resources.limit.cpu | This is a mandatory parameter.Resource Requirements(limit of cpu) | Data Type: Integer<br>Range : NA<br>Default Value: 5 |
| cn32f-svc.resources.limit.memory | This is a mandatory parameter.Resource Requirements(limit of memory) | Data Type: String<br>Range : NA<br>Default Value: 8Gi |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.resources.limit.ephemeralStorage | This is an optional parameter.Pods use ephemeral local storage for scratch space, caching, and logs. | Data Type: String<br>Range : NA<br>Default Value: 1Gi |
| cn32f-svc.resources.requests.cpu | This is a mandatory parameter.Resource Requirements(requested cpu) | Data Type: Integer<br>Range : NA<br>Default Value: 5 |
| cn32f-svc.resources.requests.memory | This is a mandatory parameter.Resource Requirements(requested memory) | Data Type: String<br>Range : NA<br>Default Value: 8Gi |
| cn32f-svc.resources.target.averageCpuUtil | This is a mandatory parameter.Resource Requirements(avg cpu utilisation) | Data Type: Integer<br>Range : NA<br>Default Value: 70 |
| cn32f-svc.maxSurge | This is a mandatory parameter.<br>The number of pods that can be created above the desired amount of pods during an update | Data Type: Integer<br>Range : NA<br>Default Value: 25% |
| cn32f-svc.maxUnavailable | This is a mandatory parameter.<br>The number of pods that can be unavailable during an update | Data Type: Integer<br>Range : NA<br>Default Value: 0% |
| cn32f-svc.pdbMaxUnavailable | This is a mandatory parameter.<br>PDB limits the number of Pods of a replicated application that are down simultaneously from voluntary disruptions. | Data Type: Integer<br>Range : NA<br>Default Value: 25% |
| cn32f-svc.service.active.svcPortHttp | This is a mandatory parameter.<br>This is the http port number for cn32f service | Data Type: Integer<br>Range : NA<br>Default Value: 9090 |
| cn32f-svc.service.active.svcPortHttps | This is a mandatory parameter.<br>This is the https port number for cn32f service | Data Type: Integer<br>Range : NA<br>Default Value: 9091 |
| cn32f-svc.service.active.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range : NA<br>Default Value: 8085 |
| cn32f-svc.service.customExtension.labels | This is an optional parameter.<br>Indicates the Custom Labels that needs to be added to cn32f specific Service | Data Type: String<br>Range : NA<br>Default Value: { } |
| cn32f-svc.service.customExtension.annotations | This is an optional parameter.<br>Indicates the Custom Annotations that needs to be added to cn32f specific Services | Data Type: String<br>Range : NA<br>Default Value: { } |
| cn32f-svc.deployment.customExtension.labels | This is an optional parameter.<br>Indicates the Custom Labels that needs to be added to cn32f specific deployments. | Data Type: String<br>Range : NA<br>Default Value: { } |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.deployment.customExtension.annotations | This is an optional parameter.<br>Indicates the Custom Annotations that needs to be added to cn32f specific deployments. | Data Type: String<br>Range : NA<br>Default Value: { } |
| cn32f-svc.hostedSepp.RequestRejectStatusCodeName | This is a mandatory parameter.<br>Defines global error reason for Hosted SEPP | Data Type: Integer<br>Range : 400, 403 and 406.<br>401 is not an allowed value<br>Default Value: 400 |
| cn32f-svc.hostedSepp.RequestRejectReasonName | This is a mandatory parameter.<br>Defines global error reason for Hosted SEPP | Data Type: String<br>Range : NA<br>Default Value: Allowed Producer Remote SEPP Set routing failure |
| cn32f-svc.bodyInTraceEnabled | This is an optional parameter.<br>This parameter enables the pn32f or cn32f services to capture the HTTP request or response body and store it as a jaeger span attribute. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32f-svc.enableAdditionalEventSpaning | This is an optional parameter.<br>This parameter enables the pn32f or cn32f services to generate feature-level events within a Jaeger trace. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32f-svc.openTelemetry.jaeger.httpExporter.port | This is an optional parameter.<br>openTelemetry port | Data Type: Integer<br>Range: NA<br>Default Value: 4318 |
| cn32f-svc.openTelemetry.jaeger.logSpans | This is an optional parameter.<br>openTelemetry logspans | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32f-svc.openTelemetry.jaeger.probabilisticSamplingRate | This is an optional parameter.<br>Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 (Note: it means 50%) |
| cn32f-svc.nameSpace | This is a mandatory parameter.<br>This parameter is used for displaying namespace and corresponding service name from where the traces are generated. | Data Type: String<br>Range: NA<br>Default Value: Value will be deployment namespace as per custom-values.yaml file. |
| cn32f-svc.enableOpenTelemetry | This is an optional parameter.<br>This parameter enables the openTelemetry. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32f-svc.openTracing.jaeger.probabilisticSamplingRate | This is an optional parameter.Trace capture in percentage | Data Type: String<br>Range : NA<br>Default Value: 0.5 (Note: it means 50%) |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.configs.is3gppSbiTargetApiRootSchemeHttp | This is a mandatory parameter.<br>It indicated the http scheme to be used in 3gpp-sbi-target-apiroot header.<br>true indicates http and false indicates https | Data Type: Boolean<br>Range: True or False<br>Default Value: True (for Oracle SEPP) |
| cn32f-svc.configs.cacheRefreshTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database. | Data Type: Integer<br>Range : NA<br>Default Value:30,000 (ms) |
| cn32f-svc.configs.cacheRefreshInitTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database at Init time. | Data Type: Integer<br>Range : NA<br>Default Value:5000 (ms) |
| cn32f-svc.configs.securityCacheRefreshTimeout | This is a mandatory parameter. (If Security Countermeasure Feature is enabled)<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration. | Data Type: Integer<br>Range : NA<br>Default Value:30,000 (ms) |
| cn32f-svc.configs.securityCacheRefreshInitTimeout | This is a mandatory parameter. (If Security Countermeasure Feature is enabled)<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration at the Init time when Application comes up. | Data Type: Integer<br>Range : NA<br>Default Value:50,000 (ms) |
| cn32f-svc.topologyHiding.timerConfig.topologyhidingCacheRefreshTimeout | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration.<br>This is a cache refresh value which triggers every time at a regular interval with a given configured value. This will keeps on making the cache data in sync with database. | Data Type: Integer<br>Range : NA<br>Default Value:30,000 (ms) |
| cn32f-svc.topologyHiding.timerConfig.topologyhidingCacheRefreshInitTimeout | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration at the Init time when Application comes up. | Data Type: Integer<br>Range : NA<br>Default Value:50,000 (ms) |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.topologyHiding.timerConfig.topologyhidingHistoryUpdateTimeout | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>This is the Time for the old entries to be removed from cache.<br>Entries older than topologyhidingHistoryRefreshSeconds are purged.<br>In case actual pseudo mapping is deleted, then we still support initial holding of the deleted values to support the messages in progress. This cache keeps on updating with given configured value. | Data Type: Integer<br>Range : NA<br>Default Value:30,000 (ms) |
| cn32f-svc.topologyHiding.timerConfig.topologyhidingHistoryRefreshSeconds | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>This is the value which signifies how long the message should be used in cache once it get deleted from the actual to pseudo mapping. | Data Type: Integer<br>Range : NA<br>Default Value:60 (sec) |
| cn32f-svc.topologyHiding.config.topologyHidingStateCheck | This is a mandatory parameter.<br>This is the value used like if request is unhiding some identifier and in response if we want to hide the identifier with the same value. | Data Type: String<br>Range : NA<br>Default Value:true |
| cn32f-svc.connectionTimeout | This is Jetty Client Settings.<br>This is a mandatory parameter.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | Data Type: Integer<br>Range : NA<br>Default Value:10,000 (ms) |
| cn32f-svc.dnsRefreshDelay | This is Jetty Client Settings.<br>This is a mandatory parameter.<br>This value represents the Time taken to refresh the DNS entries for a destination | Data Type: Integer<br>Range : NA<br>Default Value:10,000 (ms) |
| cn32f-svc.requestTimeout | This is Jetty Client Settings.<br>This is a mandatory parameter.<br>Request timeout is the maximum time that can be taken to process HTTP request after the connection is established.<br>Sum of time to process request plus ConnectionTimeout and should always be greater than Connection Timeout. | Data Type: Integer<br>Range : NA<br>Default Value:10,000 (ms) |
| cn32f-svc.serverMaxConcurrentStreams | This is a mandatory parameter.<br>Max Concurrent Stream sent by PN32F in HTTP2 Settings Frame | Data Type: Integer<br>Range : NA<br>Default Value: 100 |
| cn32f-svc.serverInitialWindowSize | This is a mandatory parameter.<br>Server Initial Window Size sent by PN32F in HTTP2 Settings Frame | Data Type: Integer<br>Range : NA<br>Default Value: 65534 |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.mediation.mediationRequestTimeout | This is a conditional parameter.<br>N32f service will wait for mediation service response for mediationRequestTimeout time before sending error message, if mediation service is unreachable | Data Type: Integer<br>Range : NA<br>Default Value: 900 (ms) |
| cn32f-svc.mediation.header.mediationRequestRejectStatusCodeHeaderName | This is a conditional parameter.<br>The name of the header added in response that will depict that n32f service has to reject this request and value of this header indicates the error code to be returned. | Data Type: String<br>Range : NA<br>Default Value: ocsepp-reject-status |
| cn32f-svc.mediation.header.mediationRequestRejectReasonHeaderName | This is a conditional parameter.<br>The name of the header added in response that will depict that n32f service has to reject this request and value of this header indicates the error reason/detail to be returned. | Data Type: String<br>Range : NA<br>Default Value: ocsepp-reject-reason |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | Data Type: Integer<br>Default Value: 30000ms |
| payloadSizeLimit | This is a mandatory parameter.<br>This parameter represents the maximum payload size in bytes. Any payload greater than the given limit results the error code HTTP 413. The maximum configurable limit is 2147483647 byte. | Data Type: Integer<br>Default Value: 262144 bytes |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| `cn32f-svc.tlsVersionSupportForKubeApiServer.cipherSuites` | This is a mandatory parameter.<br>This parameter list of CiperSuites used for the configured TLS version. Using this parameter, you can configure the required CiperSuites. | Data Type: String<br>Range:<br>If kubeApiServerTlsVersion is set to TLSv1.3, then use the following ciphers<br>`- TLS_AES_256_GCM_SHA384`<br>`- TLS_AES_128_GCM_SHA256`<br>`- TLS_CHACHA20_POLY1305_SHA256`<br>If kubeApiServerTlsVersion is set to TLSv1.2, then use the following ciphers<br>`- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256`<br>`- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256`<br>`- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256`<br>Default Value: TLS_AES_256_GCM_SHA384,TLS_AES_128_GCM_SHA256,TLS_CHACHA20_POLY1305_SHA256 |
| `cn32f-svc.startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 75<br>Range: NA |
| `cn32f-svc.startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| `cn32f-svc.startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `cn32f-svc.startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `cn32f-svc.startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| `cn32f-svc.readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 80<br>Range: NA |
| `cn32f-svc.readinessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `cn32f-svc.readinessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `cn32f-svc.readinessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `cn32f-svc.readinessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-4 (Cont.) cn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 80<br>Range: NA |
| cn32f-svc.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| cn32f-svc.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 5<br>Range: NA |
| cn32f-svc.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| cn32f-svc.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| cn32f.sniHeaderName | This is a conditional parameter.<br>This parameter indicates the SNI header name for SEPP services to read. | Data Type: String<br>Range: String<br>Default Value: x-sni-value |

## 3.1.5 pn32f-svc

This section includes information about the pn32f-svc parameters of the SEPP.


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**Table 3-5 pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.extraContainers | This is a mandatory parameter.<br>Use 'extraContainers' attribute to control the usage of extra container(DEBUG tool).<br># If assigned with ENABLED or USE_GLOBAL_V ALUE, then ensure "extraContainers Tpl" Yaml chunk is defined<br># at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| pn32f-svc.image.repository | This is a mandatory parameter.Repo location of image | Data Type: String<br>Range: NA<br>Default Value: reg-1 |
| pn32f-svc.image.name | This is a mandatory parameter.Name of image | Data Type: String<br>Range: NA<br>Default Value: ocsepp-pn32f-svc |
| pn32f-svc.image.tag | This is a mandatory parameter.Tag of image | Data Type: String<br>Range: NA<br>Default Value: helm-tag |
| pn32f-svc.image.pullPolicy | This is a mandatory parameter.This setting indicates if the image needs to be pulled or not | Data Type: String<br>Range: NA<br>Default Value: Always |
| pn32f-svc.log.root | This is a mandatory parameter.Root log level | Data Type: String<br>Range: WARN, INFO, DEBUG, ERROR<br>Default Value: ERROR |
| pn32f-svc.log.sepp | This is a mandatory parameter.Sepp specific log level | Data Type: String<br>Range: WARN, INFO, DEBUG, ERROR<br>Default Value: ERROR |
| pn32f-svc.minReplicas | This is a mandatory parameter.Minimum Number of Replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| pn32f-svc.maxReplicas | This is a mandatory parameter.Maximum num of replicas of pod to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| pn32f-svc.resources.limit.cpu | This is a mandatory parameter.Resource Requirements(limit of cpu) | Data Type: Integer<br>Range: NA<br>Default Value: 5 |
| pn32f-svc.resources.limit.memory | This is a mandatory parameter.Resource Requirements(limit of memory) | Data Type: String<br>Range: NA<br>Default Value: 8Gi |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.resources.requests.cpu | This is a mandatory parameter.Resource Requirements(requested cpu) | Data Type: Integer<br>Range: NA<br>Default Value: 5 |
| pn32f-svc.resources.requests.memory | This is a mandatory parameter.Resource Requirements(requested memory) | Data Type: String<br>Range: NA<br>Default Value: 8Gi |
| pn32f-svc.resources.target.averageCpuUtil | This is a mandatory parameter.Resource Requirements(avg cpu utilisation) | Data Type: Integer<br>Range: NA<br>Default Value: 70 |
| pn32f-svc.maxSurge | This is a mandatory parameter.<br>The number of pods that can be created above the desired amount of pods during an update | Data Type: Integer<br>Range: NA<br>Default Value: 25% |
| pn32f-svc.maxUnavailable | This is a mandatory parameter.<br>The number of pods that can be unavailable during an update | Data Type: Integer<br>Range: NA<br>Default Value: 0% |
| pn32f-svc.pdbMaxUnavailable | This is a mandatory parameter.<br>PDB limits the number of Pods of a replicated application that are down simultaneously from voluntary disruptions. | Data Type: Integer<br>Range: NA<br>Default Value: 25% |
| pn32f-svc.hostedSepp.RequestRejectStatusCodeName | This is a mandatory parameter.<br>Defines global error code for Hosted SEPP | Data Type: Integer<br>Range: 400, 403 and 406. 401 is not an allowed value<br>Default Value: 400 |
| pn32f-svc.hostedSepp.RequestRejectReasonName | This is a mandatory parameter.<br>Defines global error reason for Hosted SEPP. | Data Type: String<br>Range: NA<br>Default Value: Allowed Producer Remote SEPP Set routing failure |
| pn32f-svc.jaegerTracingEnabled | This is an optional parameter.<br>To Enable Jaeger trace. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32f-svc.bodyInTraceEnabled | This is an optional parameter.<br>This parameter enables the pn32f or cn32f services to capture the HTTP request or response body and store it as a jaeger span attribute. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32f-svc.enableAdditionalEventSpaning | This is an optional parameter.<br>This parameter enables the pn32f or cn32f services to generate feature-level events within a Jaeger trace. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32f-svc.openTelemetry.jaeger.httpExporter.port | This is an optional parameter.<br>openTelemetry port | Data Type: Integer<br>Range: NA<br>Default Value: 4318 |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.openTelemetry.jaeger.logSpans | This is an optional parameter.<br>openTelemetry logspans | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32f-svc.openTelemetry.jaeger.probabilisticSamplingRate | This is an optional parameter.<br>Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 (Note: it means 50%) |
| pn32f-svc.nameSpace | This is a mandatory parameter.<br>This parameter is used for displaying namespace and corresponding service name from where the traces are generated. | Data Type: String<br>Range: NA<br>Default Value: Value will be deployment namespace as per custom-values.yaml file. |
| pn32f-svc.enableOpenTelemetry | This is an optional parameter.<br>This parameter enables the openTelemetry. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| pn32f-svc.openTelemetry.jaeger.httpExporter.host | This is an optional parameter.<br>openTelemetry host | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| pn32f-svc.configs.is3gppSbiTargetApiRootSchemeHttp | This is a mandatory parameter.<br>Indicates scheme to be used for egress SBI request 3gpp-Sbi-Target-apiRoot header in absence of 3gpp-Sbi-Target-apiRoot header in the ingress SBI request. This is applicable only when 3gpp-Sbi-Target-apiRoot is supported for egress SBI request.<br>true indicates http and false indicates https | Data Type: Boolean<br>Range: true or false<br>Default Value:true |
| pn32f-svc.configs.cacheRefreshTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database. | Data Type: Integer<br>Range: NA<br>Default Value:30,000 (ms) |
| pn32f-svc.configs.cacheRefreshInitTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database at Init time. | Data Type: Integer<br>Range: NA<br>Default Value:5000 (ms) |
| pn32f-svc.configs.securityCacheRefreshTimeout | This is a mandatory parameter. (If Security Countermeasure Feature is enabled)<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration. | Data Type: Integer<br>Range: NA<br>Default Value:30,000 (ms) |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.configs.securityCacheRefreshInitTimeout | This is a mandatory parameter. (If Security Countermeasure Feature is enabled)<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration at the Init time when Application comes up. | Data Type: Integer<br>Range: NA<br>Default Value:50,000 (ms) |
| pn32f-svc.configs.evictSanHeaderCacheDelay | This is a mandatory parameter.<br>This parameter defines the timer value after which San Header Cache gets cleared out and updated with new N32F Context (if added). | Data Type: Integer<br>Range: NA<br>Default Value:50,000 (ms)<br>Note: In ATS setup, set the value as 100. |
| pn32f-svc.configs.nrfDiscoveryCacheRefreshTimeout | This is a mandatory parameter.<br>This parameter defines the timer value when UDR Discovery request will be triggered if coherence map containing UDR Profile information is empty. After this timer expiry, UDR Discovery request will be initiated by NRF Client towards NRF. | Data Type: Integer<br>Range: NA<br>Default Value:30,000 (ms)<br>Note: In ATS setup, set the value as 10. |
| pn32f-svc.configs.nrfDiscoveryCacheRefreshInitTimeout | This is a mandatory parameter.<br>This parameter defines the timer value after which UDR Discovery request will be triggered at SEPP INIT Time. After this timer expiry, UDR Discovery request will be initiated by NRF Client towards NRF. | Data Type: Integer<br>Range: NA<br>Default Value:5,000 (ms) |
| pn32f-svc.configs.sanHeaderName | This is a mandatory parameter.<br>Header name to use to pick SAN values at PN32F | Data Type: String<br>Range: NA<br>Default Value:<br>x-custom-ingress-client-identity |
| pn32f-svc.configs.extractSANRegex | This is a mandatory parameter.<br>Regex expression to use to extract SAN values at PN32F | Data Type: String<br>Range: NA<br>Default Value:<br>SAN=(.*)\\s |
| pn32f-svc.configs.extractSANDelimiter | This is a mandatory parameter.<br>Delimiter used for extracting SAN values at PN32F | Data Type: String<br>Range: NA<br>Default Value: "," |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.topologyHiding.timerConfig.topologyhidingCacheRefreshTimeout | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration. | Data Type: Integer<br>Range: NA<br>Default Value:30,000 (ms) |
| pn32f-svc.topologyHiding.timerConfig.topologyhidingCacheRefreshInitTimeout | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration at the Init time when Application comes up. | Data Type: Integer<br>Range: NA<br>Default Value:50,000 (ms) |
| pn32f-svc.topologyHiding.timerConfig.topologyhidingHistoryUpdateTimeout | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>This is the Time for the old entries to be removed from cache.<br>Entries older than topologyhidingHistoryRefreshSeconds are purged. | Data Type: Integer<br>Range: NA<br>Default Value:30,000 (ms) |
| pn32f-svc.topologyHiding.timerConfig.topologyhidingHistoryRefreshSeconds | This is a mandatory parameter. (If Topology hiding Feature is enabled)<br>This value represents the Time until old Topology Hiding feature entries are kept in cache. | Data Type: Integer<br>Range: NA<br>Default Value:60 (sec) |
| pn32f-svc.topologyHiding.config.topologyHidingStateCheck | This is a mandatory parameter.<br>This is the value used like if request is unhiding some identifier and in response if we want to hide the identifier with the same value. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| pn32f-svc.connectionTimeout | This is Jetty Client Settings.<br>This is a mandatory parameter.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | Data Type: Integer<br>Range: NA<br>Default Value: 60(ms) |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.dnsRefreshDelay | This is Jetty Client Settings.<br>This is a mandatory parameter.<br>This value represents the Time taken to refresh the DNS entries for a destination | Data Type: Integer<br>Range: NA<br>Default Value: 10,000 (ms) |
| pn32f-svc.requestTimeout | This is Jetty Client Settings.<br>This is a mandatory parameter.<br>This value represents the Time to wait for the response. | Data Type: Integer<br>Range: NA<br>Default Value: 600 (ms) |
| pn32f-svc.serverMaxConcurrentStreams | This is a mandatory parameter.<br>Max Concurrent Stream sent by PN32F in HTTP2 Settings Frame | Data Type: Integer<br>Range: NA<br>Default Value: 100 |
| pn32f-svc.serverInitialWindowSize | This is a mandatory parameter.<br>Server Initial Window Size sent by PN32F in HTTP2 Settings Frame | Data Type: Integer<br>Range: NA<br>Default Value: 65534 |
| pn32f-svc.mediation.mediationRequestTimeout | This is a conditional parameter.<br>N32f service will wait for mediation service response for mediationRequestTimeout time before sending error message, if mediation service is unreachable | Data Type: Integer<br>Range: NA<br>Default Value: 900 (ms) |
| pn32f-svc.mediation.header.mediationRequestRejectStatusCodeHeaderName | This is a conditional parameter.<br>The name of the header added in response that will depict that n32f service has to reject this request and value of this header indicates the error code to be returned. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-reject-status |
| pn32f-svc.mediation.header.mediationRequestRejectReasonHeaderName | This is a conditional parameter.<br>The name of the header added in response that will depict that n32f service has to reject this request and value of this header indicates the error reason/detail to be returned. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-reject-reason |
| nrfconfiguration.service.type | This is an optional parameter.<br>Kind of Service that will be used for this Deployment | Data Type: String<br>Default Value: |
| pn32f-svc.service.active.svcPortHttp | This is a mandatory parameter.<br>It defines the http port for pn32f service | Data Type: Integer<br>Range: NA<br>Default Value: 9090 |
| pn32f-svc.service.active.svcPortHttps | This is a mandatory parameter.<br>It defines the https port for pn32f service | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.service.active.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 8085 |
| pn32f-svc.service.customExtension.labels | This is an optional parameter.Custom Labels that needs to be added to pn32f specific Service | Data Type: String<br>Range: NA<br>Default Value: { } |
| pn32f-svc.service.customExtension.annotations | This is an optional parameter.Custom Annotations that needs to be added to pn32f specific Services | Data Type: String<br>Range: NA<br>Default Value: { } |
| pn32f-svc.deployment.customExtension.labels | This is an optional parameter.Custom Labels that needs to be added to pn32f specific Deployment | Data Type: String<br>Range: NA<br>Default Value: { } |
| pn32f-svc.deployment.customExtension.annotations | This is an optional parameter.Custom Annotations that needs to be added to pn32f specific Deployment | Data Type: String<br>Range: NA<br>Default Value: { } |
| pn32f-svc.resources.requests.ephemeralStorage | This is an optional parameter.pods and containers can require ephemeral storage for their operation. | Data Type: String<br>Range: depends on cluster resources<br>Default Value: 70Mi |
| pn32f-svc.resources.limits.ephemeralStorage | This is an optional parameter.Pods use ephemeral local storage for scratch space, caching, and logs. | Data Type: String<br>Range: depends on cluster Resources<br>Default Value: 1G |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | Data Type: Integer<br>Default Value: 30000ms |
| suciPattern | This is a Mandatory Parameter. This is an SUCI routing indicator pattern that is used to extract the routing indicator. | Datatype: String<br>Example:<br>`suciPattern: (?<=suci-0-[0-9]{3}-[0-9]{3}-)[0-9]{1,4}` |
| payloadSizeLimit | This is a mandatory parameter.<br>This parameter represents the maximum payload size in bytes. Any payload greater than the given limit results the error code HTTP 413. The maximum configurable limit is 2147483647 byte. | Data Type: Integer<br>Default Value: 262144 bytes |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| nrfTrafficRedirection | This is a mandatory parameter.<br>This parameter determines whether all the NRF requests redirect to nrf-client.<br>Note: This parameter must be set to false in ASM environment. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| pn32f-svc.tlsVersionSupportForKubeApiServer.cipherSuites | This is a mandatory parameter.<br>This parameter list of CiperSuites used for the configured TLS version. Using this parameter, you can configure the required CiperSuites. | Data Type: String<br>Range:<br>If kubeApiServerTlsVersion is set to TLSv1.3, then use the following ciphers<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256<br>If kubeApiServerTlsVersion is set to TLSv1.2, then use the following ciphers<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>Default Value: TLS_AES_256_GCM_SHA384,TLS_AES_128_GCM_SHA256,TLS_CHACHA20_POLY1305_SHA256 |
| pn32f-svc.startupProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 75<br>Range: NA |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.startupProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| pn32f-svc.startupProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| pn32f-svc.startupProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| pn32f-svc.startupProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| pn32f-svc.readinessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 80<br>Range: NA |
| pn32f-svc.readinessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| pn32f-svc.readinessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| pn32f-svc.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| pn32f-svc.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| pn32f-svc.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 80<br>Range: NA |
| pn32f-svc.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| pn32f-svc.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 5<br>Range: NA |
| pn32f-svc.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| pn32f-svc.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-5 (Cont.) pn32f-svc**

| Parameter | Description | Details |
|---|---|---|
| `nrfNotificationListenerInitTimeout` | This is a mandatory parameter.<br>The initial wait time before the pn32f sepp service attempts to register the NRF notification map listener. | Data Type: Integer<br>Default Value: 30000 ms<br>Range: NA |
| `nrfNotificationListenerTimeout` | This is a mandatory parameter.<br>The fixed delay intended to control how often the notification listener registration job should run after the first run. | Data Type: Integer<br>Default Value: 300000 ms<br>Range: NA |
| `pn32f.sniHeaderName` | This is a conditional parameter.<br>This parameter indicates the SNI header name for SEPP services to read. | Data Type: String<br>Range: String<br>Default Value: x-sni-value |

## 3.1.6 config-mgr-svc

This section includes information about the config-mgr-svc parameters of the SEPP.

**Table 3-6 config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `config-mgr-svc.extraContainers` | This is a mandatory parameter.<br>Use 'extraContainers' attribute to control the usage of extra container(DEBUG tool).<br># If assigned with ENABLED or USE_GLOBAL_V ALUE, then ensure "extraContainers Tpl" Yaml chunk is defined<br># at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| `config-mgr-svc.image.repository` | This is a mandatory parameter.<br>Indicates the repo location of image | Data Type: String<br>Range: NA<br>Default Value: reg-1 |
| `config-mgr-svc.image.name` | This is a mandatory parameter.<br>Indicates the name of image | Data Type: String<br>Range: NA<br>Default Value: ocsepp-config-mgr-svc |
| `config-mgr-svc.image.tag` | This is a mandatory parameter.<br>Indicates the tag of image | Data Type: String<br>Range: NA<br>Default Value: helm-tag |


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**Table 3-6 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| config-mgr-svc.image.pullPolicy | This is a mandatory parameter.<br>This setting indicates if the image needs to be pulled or not | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| config-mgr-svc.service.loadBalancer.addressPool | This is a mandatory parameter.<br>To request the assignment of public IP from a specific IP pool using metallb.universe.tf/address-pool annotation to config-mgr-svc. | Data Type: String<br>Range: NA<br>Default Value: signaling1 |
| config-mgr-svc.log.root | This is a mandatory parameter.<br>Indicates the Root log level | Data Type: String<br>Range: DEBUG, INFO, WARN, ERROR<br>Default Value: ERROR |
| config-mgr-svc.log.sepp | This is a mandatory parameter.<br>Indicates the Sepp sepecific log level | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| config-mgr-svc.resources.limit.cpu | This is a mandatory parameter.<br>Indicates the Requirements(limit of cpu) | Data Type: Integer<br>Range: Valid Integer<br>Default Value: 2 |
| config-mgr-svc.resources.limit.memory | This is a mandatory parameter.<br>Indicates the Resource Requirements(limit of memory) | Data Type: String<br>Range: NA<br>Default Value: 2Gi |
| config-mgr-svc.resources.limits.ephemeralStorage | This is an optional parameter.Pods use ephemeral local storage for scratch space, caching, and logs. | Data Type: String<br>Range: depends on cluster Resources<br>Default Value: 1Gi |
| config-mgr-svc.resources.requests.ephemeralStorage | This is an optional parameter.pods and containers can require ephemeral storage for their operation. | Data Type: String<br>Range: depends on cluster resources<br>Default Value: 70Mi |
| config-mgr-svc.resources.requests.cpu | This is a mandatory parameter.<br>Indicates the Resource Requirements(requested cpu) | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| config-mgr-svc.resources.requests.memory | This is a mandatory parameter.<br>Indicates the Resource Requirements(requested memory) | Data Type: String<br>Range: NA<br>Default Value: 2Gi |
| config-mgr-svc.service.customExtension.labels | This is an optional parameter.<br>Indicates the Custom Labels that needs to be added to config-mgr-svc specific Service | Data Type: String<br>Range: NA<br>Default Value: NA |
| config-mgr-svc.service.customExtension.annotations | This is an optional parameter.<br>Indicates the Custom Annotations that needs to be added to config-mgr-svc specific Services | Data Type: String<br>Range: NA<br>Default Value: NA |


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**Table 3-6 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| config-mgr-svc.deployment.customExtension.labels | This is an optional parameter.<br>Indicates the Custom Labels that needs to be added to config-mgr-svc specific Deployment. | Data Type: String<br>Range: NA<br>Default Value: NA |
| config-mgr-svc.deployment.customExtension.annotations | This is an optional parameter.<br>Indicates the Custom Annotations that needs to be added to config-mgr-svc specific Deployment. | Data Type: String<br>Range: NA<br>Default Value: NA |
| config-mgr-svc.startupProbe.initialDelaySeconds | This is a mandatory parameter.Tells the kubelet that it should wait second before performing the first probe. | Data Type: Integer<br>Range: NA<br>Default Value: 60 |
| config-mgr-svc.startupProbe.timeoutSeconds | This is a mandatory parameter. Number of seconds after which the probe times out. | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| config-mgr-svc.startupProbe.periodSeconds | This is a mandatory parameter. Specifies that the kubelet should perform a readiness probe every xx seconds. | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| config-mgr-svc.startupProbe.successThreshold | This is a mandatory parameter. Minimum consecutive successes for the probe to be considered successful after having failed. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| config-mgr-svc.startupProbe.failureThreshold | This is a mandatory parameter. When a Pod starts and the probe fails, Kubernetes will try failureThreshold times before giving up. | Data Type: Integer<br>Range: NA<br>Default Value: 6 |
| config-mgr-svc.readinessProbe.initialDelaySeconds | This is a mandatory parameter.<br>Tells the kubelet that it should wait second before performing the first probe. | Data Type: Integer<br>Range: NA<br>Default Value: 30 |
| config-mgr-svc.readinessProbe.timeoutSeconds | This is a mandatory parameter.<br>Number of seconds after which the probe times out. | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| config-mgr-svc.readinessProbe.periodSeconds | This is a mandatory parameter.<br>specifies that the kubelet should perform a readiness probe every xx seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| config-mgr-svc.readinessProbe.successThreshold | This is a mandatory parameter.<br>Minimum consecutive successes for the probe to be considered successful after having failed. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| config-mgr-svc.readinessProbe.failureThreshold | This is a mandatory parameter.<br>When a Pod starts and the probe fails, Kubernetes will try failureThreshold times before giving up. | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| config-mgr-svc.livenessProbe.initialDelaySeconds | This is a mandatory parameter.<br>Tells the kubelet that it should wait second before performing the first probe. | Data Type: Integer<br>Range: NA<br>Default Value: 180 |


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**Table 3-6 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| config-mgr-svc.livenessProbe.timeoutSeconds | This is a mandatory parameter.<br>Number of seconds after which the probe times out | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| config-mgr-svc.livenessProbe.periodSeconds | This is a mandatory parameter.<br>specifies that the kubelet should perform a liveliness probe every xx seconds. | Data Type: Integer<br>Range: NA<br>Default Value: 15 |
| config-mgr-svc.livenessProbe.successThreshold | This is a mandatory parameter.<br>Minimum consecutive successes for the probe to be considered successful after having failed. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| config-mgr-svc.livenessProbe.failureThreshold | This is a mandatory parameter.<br>When a Pod starts and the probe fails, Kubernetes will try failureThreshold times before giving up. | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| config-mgr-svc.maxPerRemotePlmnListSize | This is a mandatory parameter.<br>This value defines the max number of PLMNs allowed per remote SEPP# Value of MaxAllowedPLMNs, can be increased upto 900 in nrfClientDisable/ Roaming-Hub Mode. | Data Type: Integer<br>Range: NA<br>Default Value: 30 |
| config-mgr-svc.totalRemotePlmnListSize | This is a mandatory parameter.<br>Value for total PLMNs that can be configured for the remote SEPPs on local SEPP. | Data Type: Integer<br>Range: NA<br>Default Value: 900 |
| config-mgr-svc.maxSurge | This is a mandatory parameter.<br>The number of pods that can be created above the desired amount of pods during an update | Data Type: Integer<br>Range: NA<br>Default Value: 25% |
| config-mgr-svc.maxUnavailable | This is a mandatory parameter.<br>The number of pods that can be unavailable during an update | Data Type: Integer<br>Range: NA<br>Default Value: 0% |
| config-mgr-svc.service.active.type | This is a mandatory parameter.<br>It defines the type of service | Data Type: String<br>Range: ClusterIP, NodePort, LoadBalancer and ExternalName<br>Default Value: NodePort |
| config-mgr-svc.service.active.svcPortHttp | This is a mandatory parameter.<br>It defines the http port for config-mgr-svc service. | Data Type: Integer<br>Range: NA<br>Default Value: 9090 |
| config-mgr-svc.service.active.configMgrIntraNFCommPort | This is a mandatory parameter.<br>It defines the http port of config-mgr-svc service for intra NF communication. | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| config-mgr-svc.service.active.containerPortName | This is a mandatory parameter.<br>It defines the http port name for config-mgr-svc service. | Data Type: String<br>Range: NA<br>Default Value: con-port-http |


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**Table 3-6 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `config-mgr-svc.service.active.intraNFCommContainerPortName` | This is a mandatory parameter.<br>It defines the http port name of config-mgr-svc service for intra NF communication. | Data Type: String<br>Range: NA<br>Default Value:intra-nf-http |
| `config-mgr-svc.service.active.actuatorPort` | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 8085 |
| `alternateRoute.orderId.rejectAll` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>Specifies the OrderId of RejectAll Route. RejectAll route will be selected when there is no matching N32f route. | **Data Type:** Integer<br>**Default Value**: 90 |
| `alternateRoute.orderId:n32c` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>Specifies the OrderId of N32c Route. N32c route will be used for all the capability-exchange message sent on N32C interface. | **Data Type**: Integer<br>**Default Value**: 80 |
| `alternateRoute.path.format1` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>Specifies the API format of n32c capability-exchnage message. | **Data Type**: String<br>**Default Value**: /n32c-handshake/** |
| `alternateRoute.path.format2` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>Specifies the API format of n32c capability-exchnage message. | **Data Type**: String<br>**Default Value**: /*/n32c-handshake/** |
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[]` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>It is an array and contains the list of error criteria set. Error criteria's can be created on the basis of status or exceptions (not both). Only 2 criteria's are currently supported – criteria_0 and criteria_1. | **Data Type**: String<br>**Default Value**: NA |
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[].Id` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>This defined the unique name of the criteria set. | **Data Type**: String<br>**Default Value:** criteria_0 and criteria_1 |
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[].method` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>The methods supported while doing sbi rerouting. The alternate routing takes place only for the response messages that share the defined methods present. | **Data Type**: String<br>**Range:** GET, POST, PUT, DELETE, PATCH |


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**Table 3-6 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[].Response.statuses.status` | This is an optional parameter.<br>The error response status supported while doing sbi rerouting. The alternate routing takes place only for the response that matches the status code defined in this array list. | **Data Type**: array of integer<br>**Range**: [500,503,504], [400,404] |
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[].Response.statuses.statusSeries` | This is an optional parameter.<br>This needs to be set along with status code. statusSeries will defined the HTTP error code series and status will define the specific HTTP error code status. | Data Type: string<br>Range and Default value: “4xx”, “5xx” |
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[].exceptions` | This is an optional parameter.<br>Rerouting will happen either on the basis of status code or exception (any one). When exceptions are defined in errorCriterisSet, re-Routing takes place only if the exception received in the error response matched with the configured exception. | **Data Type**: String<br>**Range**:<br>• java.util.concurrent.TimeoutException<br>• java.net.SocketException<br>• java.net.SocketTimeoutException<br>• java.net.UnknownHostException<br>• java.net.ConnectException<br>• java.net.NoRouteToHostException<br>• javax.net.ssl.SSLHandshakeException |
| `alternateRoute.sbiReRoute.exceptionPriority` | This is an optional parameter.<br>2 errorCriteriaSets are created – one with status code and other with exception. When an error response is received, which error criteria set will get the priority will be defined by this parameter.<br>This parameter defines the priority of exception error criteria set. | **Data Type**: Integer<br>**Default Value**: 1 |
| `alternateRoute.sbiReRoute.responsePriority` | This is an optional parameter.<br>Two errorCriteriaSets are created – one with status code and other with exception. When an error response is received, which error criteria set will get the priority will be defined by this parameter.<br>This parameter defines the priority of status response error criteria set. | **Data Type**: Integer<br>**Default Value**: 2 |


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**Table 3-6 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `alternateRoute.sbiReRoute.sbiRoutingErrorActionSets[]` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>It is an array and contains the list of actions set. When an error criteria defined above matches with the response, what action would be taken, reroute/redirect/drop and their corresponding parmaeters. | **Data Type**: String<br>**Default Value**: NA |
| `alternateRoute.sbiReRoute.sbiRoutingErrorActionSets[].Id` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>This defined the unique name of the error action set. | **Data Type**: String<br>**Default Value**: action_0 |
| `alternateRoute.sbiReRoute.sbiRoutingErrorActionSets[].action` | This is a mandatory parameter for SBI routing to work on N32-egress-gateway.<br>This defined the action to be performed if the error criteria set matches with the response received. | **Data Type**: String<br>**Default Value**: reroute (rerouting to secondary/ tertiary) |
| `alternateRoute.sbiReRoute.sbiRoutingErrorActionSets[].Attempts` | This is an optional parameter.<br>The routing takes place based on the retries count set here. Example: if retry count is 1, then EGW will try to route towards secondary SEPP only (and not tertiary), if routing to primary SEPP fails. | **Data Type**: Integer<br>**Default Value**: 0<br>**Note:** To enable alternate routing feature, change this parameter value to 2. This allows switching from primary to secondary to tertiary Remote SEPPs |
| `alternateRoute.sbiReRoute.sbiRoutingErrorCriteriaSets[].headersMatchingScript` | This is an optional parameter.<br>To enable server and Via Header handling, headersMatchingScript is added under the response entity within sbiRoutingErrorCriteriaSets. This headersMatchingScript configuration will get satisfied, if the response contains server or via header and the content of the header matches the regex configured.<br>A comma separated String values, with the following format:<br>1st token: headerCheck (Hard coded values).<br>2nd to n-1 token: Header names which has to be validated.<br>nth token: regex expression for header validation.<br>Note: The final result would be an aggregated OR of the individual header checks.`"headerCheck,server,via,.*(SEPP\|UDR).*"`<br>Note: Not Currently used. | **Data Type**: String<br>**Default Value**: "" |


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> **Note**
>
> The following parameters are configured in SEPP `config-mgr-svc/values.yaml` file.

**Table 3-7 config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `sorReRoute.sbiRoutingErrorCriteriaSets[].Id` | This is a mandatory parameter for SOR re-routing to work on PLMN-egress-gateway.<br>This defined the unique name of the criteria set. | **Data Type**: String<br>**Default Value**: criteria_0 and criteria_1 |
| `sorReRoute.sbiRoutingErrorCriteriaSets[].method` | This is a mandatory parameter for SOR re-routing to work on PLMN-egress-gateway.<br>The methods supported while doing SOR rerouting. The alternate routing takes place only for the response messages that share the defined methods present. | **Data Type:** String<br>**Range:** GET, POST, PUT, DELETE, PATCH |
| `sorReRoute.sbiRoutingErrorCriteriaSets[].Response.statuses.status` | This is an optional parameter.<br>The error response status supported while doing SOR rerouting. The alternate routing takes place only for the response that matches the status code defined in this array list. | **Data Type**: array of integer<br>**Range**: [500,503,504] |
| `sorReRoute.sbiRoutingErrorCriteriaSets[].Response.statuses.statusSeries` | This is an optional parameter.<br>This needs to be set along with status code. statusSeries will defined the HTTP error code series and status will define the specific HTTP error code status. | **Data Type**: string<br>**Default value**: “5xx” |
| `sorReRoute.sbiRoutingErrorCriteriaSets[].exceptions` | This is an optional parameter.<br>Rerouting will happen either on the basis of status code or exception (any one). When exceptions are defined in errorCriterisSet, re-Routing takes place only if the exception received in the error response matched with the configured exception. | Data Type: String<br>Range:<br>• java.util.concurrent.TimeoutException,<br>• java.net.SocketException,<br>• java.net.SocketTimeoutException,<br>• java.net.UnknownHostException,<br>• java.net.NoRouteToHostException,<br>• java.net.ConnectException |
| `sorReRoute.sbiRoutingErrorCriteriaSets[].headersMatchingScript` | This is an optional parameter.<br>Excluding the destination will happen if the server header value received in error response matches the string criteria defined in this field. | Data Type: String<br>Default Value: "headerCheck,server,via,.*(SEPP\|SOR).*" |


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**Table 3-7 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `sorReRoute.exceptionPriority` | This is an optional parameter.<br>2 errorCriteriaSets are created – one with status code and other with exception. When an error response is received, which error criteria set will get the priority will be defined by this parameter.<br>This parameter defines the priority of exception error criteria set. | Data Type: Integer<br>Default Value: 2 |
| `sorReRoute.responsePriority` | This is an optional parameter.<br>2 errorCriteriaSets are created – one with status code and other with exception. When an error response is received, which error criteria set will get the priority will be defined by this parameter.<br>This parameter defines the priority of status response error criteria set. | Data Type: Integer<br>Default Value: 1 |
| `sorReRoute.sbiRoutingErrorActionSets[]` | This is a mandatory parameter for SOR re-routing to work on PLMN-egress-gateway.<br>It is an array and contains the list of actions set. When an error criteria defined above matches with the response, what action would be taken – reroute/redirect/drop and their corresponding parmaeters. | Data Type: String<br>Default Value: NA |
| `sorReRoute.sbiRoutingErrorActionSets[].Id` | This is a mandatory parameter for SOR re-routing to work on PLMN-egress-gateway.<br>This defined the unique name of the error action set. | Data Type: String<br>Default Value: action_0 |
| `sorReRoute.sbiRoutingErrorActionSets[].action` | This is a mandatory parameter.<br>SOR re-routing to work on PLMN-egress-gateway.<br>This defined the action to be performed if the error criteria set matches with the response received. | Data Type: String<br>Default Value: reroute (rerouting to secondary/tertiary) |
| `sorReRoute.sbiRoutingErrorActionSets[].Attempts` | This is an optional parameter.<br>The routing takes place based on the retries count set here.<br>Example: if retry count is 1, then EGW will try to route towards secondary SEPP only (and not tertiary), if routing to primary SEPP fails. | Data Type: Integer<br>Default Value: 2 |


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**Table 3-7 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| sorReRoute.sbiRoutingErrorActionSets[].blacklist | This is an optional parameter.<br>This defines whether the destination should be excluded for some amount of time | Data Type: String<br>Default Value: NA |
| sorReRoute.sbiRoutingErrorActionSets[].blacklist.enabled | This is an optional parameter.<br>If it is enabled, the functionality will work if the server header values matches with the error response received | Data Type: boolean<br>Default Value: false |
| sorReRoute.sbiRoutingErrorActionSets[].blacklist.duration | This is an optional parameter.<br>This defines the duration for which a destination is excluded. Time in MS. | Data Type: Integer<br>Default Value: 60000 |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | Data Type: Integer<br>Default Value: 30000ms |
| nif.enableNif | This is a mandatory parameter.<br>This parameter is used to enable NIF Screen in CNC Console GUI. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| nif.nifDiscoveryName | This is a conditional parameter.<br>Name used to discover 5GNIF, (if NIF is enabled). | Data Type: String<br>Default Value: CUSTOM_5GNIF |
| nif.httpEnabledNif | This is a mandatory parameter.<br>This parameter is used to enable HTTP communication towards NIF.<br>Recommended true for ASM. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| nif.nifDiscoveryInitialDelay | This is a mandatory parameter.<br>This parameter defines the initial delay in ms for which application waits before feature is applied after enabling feature or restart of service. | Data Type: Integer<br>Default Value: 50000 |
| nif.nifDiscoveryScheduledDelay | This is a mandatory parameter.<br>This parameter defines the periodic interval after which the NRF discovery request will be generated in ms. | Data Type: Integer<br>Default Value: 30000 |


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**Table 3-7 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| nif.nifRoutingErrorCriteriaSets | This is a mandatory parameter.<br>This parameter defines the error criteria set for which alternate routing between 5GNIFs shall be done on the basis of response codes, server header and exceptions. | Data Type: String<br>Default Value: [ { "id": "nif_criteria_1","method": [ "GET","POST","PUT","DELETE","PATCH" ],"response": { "statuses": [ { "status": [ 500,503,504 ],"statusSeries": "5xx" } ],"headersMatchingScript": "headerCheck,server,via,.*NIF.*" } }, { "id": "nif_criteria_0","method": [ "GET","POST","PUT","DELETE","PATCH" ],"exceptions": [ "java.util.concurrent.TimeoutException","java.net.SocketException","java.net.SocketTimeoutException","java.net.UnknownHostException","java.net.ConnectException","java.net.NoRouteToHostException","java.nio.channels.ClosedChannelException" ] } ] |
| nif.nifRoutingErrorActionSets | This is a mandatory parameter.<br>This parameter defines the action to be taken if alternate routing between 5GNIFs needs to be performed. | Data Type: String<br>Default Value: [{"id": "nif_action_0", "action": "reroute", "attempts": 2, "blacklist": { "enabled": false,"duration": 60000 }}] |
| nif.defaultPlmnRoute | This is a mandatory parameter.<br>This parameter defines the default route created when feature is disabled. | Data Type: String<br>Default Value: [{"id":"default_route","uri":"egress://request.uri","order":1,"filters":[{"args":null,"name":"DefaultRouteRetry"}],"predicates":[{"args":{"pattern":"/**"},"name":"Path"}]}] |
| nif.nifNrfRoute | This is a mandatory parameter.<br>This parameter defines the route to be used for communicating with NRF when feature is enabled. | Data Type: String<br>Default Value: [{"id":"nrf_route","uri":"egress://request.uri","order":1,"filters":[{"args":null,"name":"DefaultRouteRetry"}],"predicates":[{"args":{"pattern":"/nnrf-*/**"},"name":"Path"},{"args":{"headerName":"x-custom-ingress-client-identity"},"name":"HeaderAbsent"}]}] |


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**Table 3-7 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `nif.nifRejectAllRoute` | This is a mandatory parameter.<br>This parameter defines the route created when NIF feature is enabled but no discoverable instances of NIF are found. | Data Type: String<br>Default Value: [{"id":"nif_reject","uri":"https://ocsepp.com","order":1,"filters":[{"args":{"name":"InvalidRouteFilter","errorCodeOnInvalidRoute":"500","errorCauseOnInvalidRoute":"No MatchingRoute","errorTitleOnInvalidRoute":"No Matching Route","errorDescriptionOnInvalidRoute":"No matchingRoute"},"name":"InvalidRouteFilter"}],"predicates":[{"args":{"pattern":"/**"},"name":"Path"},{"args":{"header":"x-custom-ingress-client-identity"},"name":"Header"}]}] |
| `nif.defaultCat3UdrRoute` | This is a mandatory parameter.<br>This parameter defines the route created when Previous location check and/or Time location check are enabled with NIF. | Data Type: String<br>Default Value: [ { "id": "cat3_udr_route","uri": "egress://request.uri","order": 1,"filters": [ { "args": null,"name": "DefaultRouteRetry" } ],"predicates": [ { "name": "Path","args": { "pattern": "/nudr-*/**" } },{ "name": "HeaderAbsent","args": { "headerName": "x-custom-ingress-client-identity" } } ] } ] |
| `nif.defaultCat3UdmRoute` | This is a mandatory parameter.<br>This parameter defines the route created when Previous location check and/or Time location check are enabled with NIF. | Data Type: String<br>Default Value: [ { "id": "cat3_udm_route","uri": "egress://request.uri","order": 1,"filters": [ { "args": null,"name": "DefaultRouteRetry" } ],"predicates": [ { "name": "Path","args": { "pattern": "/nudm-*/**" } },{ "name": "HeaderAbsent","args": { "headerName": "x-custom-ingress-client-identity" } } ] } ] |


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**Table 3-7 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| `config-mgr-svc.tlsVersionSupportForKubeApiServer.cipherSuites` | This is a mandatory parameter.<br>This parameter list of CiperSuites used for the configured TLS version. Using this parameter, you can configure the required CiperSuites. | Data Type: String<br>Range:<br>If kubeApiServerTlsVersion is set to TLSv1.3, then use the following ciphers<br>`- TLS_AES_256_GCM_SHA384`<br>`- TLS_AES_128_GCM_SHA256`<br>`- TLS_CHACHA20_POLY1305_SHA256`<br>If kubeApiServerTlsVersion is set to TLSv1.2, then use the following ciphers<br>`- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256`<br>`- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256`<br>`- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256`<br>Default Value: TLS_AES_256_GCM_SHA384,TLS_AES_128_GCM_SHA256,TLS_CHACHA20_POLY1305_SHA256 |
| `config-mgr-svc.nrfAutoRouteCreation` | This is a mandatory parameter. This parameter enables the automatic creation of NRF routes at the PLMN-EGW for routing both inter-NRF and intra-NRF traffic, as well as for handling inter and intra SBI requests destined for the NRF.<br>• For SEPP installation, this flag must be set to true.<br>• For upgrades from supported release N to 25.2.2x, this flag should be set to false.<br>• For upgrades from version 25.2.2x to later releases, the flag should be set to true in order to update the NRF routes. | DataType: Boolean<br>Range: true or false<br>Default Value: true |
| `config-mgr-svc.enableScpDeployment` | This is a mandatory parameter.<br>Indicates if SEPP is deployed with SCP. Set to true if SCP is present. | DataType: Boolean<br>Range: true or false<br>Default Value: false |


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**Table 3-7 (Cont.) config-mgr-svc**

| Parameter | Description | Details |
|---|---|---|
| config-mgr-svc.nrfProfile.enableVirtualNrfResolution | This is a mandatory parameter.<br>Specifies whether Virtual FQDN is required for NRF configuration. When set to true, it enables virtual NRF session retry by Alternate routing service. | DataType: Boolean<br>Range: true or false<br>Default Value: false |
| config-mgr-svc.nrfProfile.static.primaryNrfApiRoot | This is a mandatory parameter.<br>Primary NRF FQDN address (combination of Hostname and Port). Used if global.nrfProfile.enableVirtualNrfResolution is false. | DataType: string<br>Default Value: NA |
| config-mgr-svc.nrfProfile.static.secondaryNrfApiRoot | This is a mandatory parameter.<br>Secondary NRF FQDN address (combination of Hostname and Port). Used if global.nrfProfile.enableVirtualNrfResolution is false. | DataType: string<br>Default Value: NA |
| config-mgr-svc.nrfProfile.static.nrfScheme | This is a mandatory parameter.<br>Scheme of primary and secondary NRF (Possible values: http/https). | DataType: string<br>Default Value: http |
| config-mgr-svc.nrfProfile.virtual.virtualNrfFqdn | This is a mandatory parameter.<br>Virtual FQDN for querying static list of routes. Used if global.nrfProfile.enableVirtualNrfResolution is true. | DataType: string<br>Default Value: NA |
| config-mgr-svc.nrfProfile.virtual.virtualNrfScheme | This is a mandatory parameter.<br>Virtual scheme supported by NRF (Possible values: http/https). Used if global.nrfProfile.enableVirtualNrfResolution is true. | DataType: string<br>Default Value: http |
| config-mgr-svc.nrfRoutingErrorCriteriaSets | This is an optional parameter.<br>List of errors/exceptions for alternate routing between NRFs. This is similar to Gateways Criteria Sets. | DataType: list<br>Default Value: NA |
| config-mgr-svc.nrfRoutingErrorActionSets | This is an optional parameter.<br>Action sets to be configured for multiple NRFs.This is similar to Gateway Action Sets. | DataType: list<br>Default Value: NA |

## 3.1.7 n32-ingress-gateway

This section includes information about the n32-ingress-gateway parameters of the SEPP.


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**Table 3-8 n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| cmName | This is an optional parameter. To enable the span | Data Type: String<br>Range: NA<br>Default Value: ingressgateway |
| istioSidecarQuitUrl | This is a mandatory parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/quitquitquit<br>Note: Port should be envoy admin port. |
| istioSidecarReadyUrl | This is a mandatory parameter.<br>The sidecar (istio ready url)when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/ready<br>Note: Port should be envoy admin port. |
| ingressServer.keepAlive.enabled | This is a Optional parameter.<br>If enabled netty server will send keep alive message for each connection | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| ingressServer.keepAlive.idleTime | This is a Optional parameter.<br>Time after which keep alive will be tried after successful response from the peer | Data Type: Integer<br>Range: NA<br>Default Value: 180 #(Second) |
| ingressServer.keepAlive.count | This is a Optional parameter.<br>No of times it should retry if there is no response for keep alive | Data Type: Integer<br>Range: NA<br>Default Value: 9 |
| ingressServer.keepAlive.interval | This is an Optional parameter.<br>The interval after which it should retry in case of failure | Data Type: Integer<br>Range: NA<br>Default Value: 60 #(Second) |
| serverHeaderConfigMode | This is a mandatory parameter.<br>Possible values: HELM, REST. Based on this value, the feature flag for "server" header will need to be enabled either in Helm configuration or Rest configuration. | Data Type: ENUM<br>Range: NA<br>Default Value: HELM |
| serverHeaderDetails.enabled | This is a mandatory parameter.<br>All attributes under "serverHeaderDetails" will need to be configured only if "serverHeaderConfigMode" is set as "HELM"<br>If enabled at Global level, Global configuration will be used by default if no configuration exists at Route level. | Data Type: Boolean<br>Range: HELM or REST<br>Default Value: false |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `serverHeaderDetails.errorCodeSeriesId` | This is a mandatory parameter if not defined at Route level.<br>By default used for Global level configuration. Value need to be one among "errorCodeSeriesList" resource defined below. | Data Type: String<br>Range: NA<br>Default Value: E1 |
| `serverHeaderDetails.configuration.nfType` | This is a mandatory parameter.<br>This value is common across Global and Route level configuration. If not defined, server header will not be included in response. | Data Type: String<br>Range: NA<br>Default Value: SEPP |
| `serverHeaderDetails.configuration.nfInstanceId` | This is an Optional parameter.<br>This value is common across Global and Route level configuration. If not defined, only "nfType" will be used for server header value. | Data Type: String<br>Range: NA<br>Default Value: 9faf1bbc-6e4a-4454-a507-aef01a101a06 |
| `errorCodeSeriesList[0].id` | This is an Optional parameter.<br>it is used for assigning "errorCodeSeriesId" either at Global or Route level configuration for Server header. | Data Type: String<br>Range: NA<br>Default Value: E1 |
| `errorCodeSeriesList[0].errorCodeSeries[0].errorSet` | This is a mandatory parameter.<br>Possible values for "errorSet" attribute: 5xx, 4xx, 3xx, 2xx, 1xx | Data Type: String<br>Range: NA<br>Default Value: 4xx |
| `errorCodeSeriesList[0].errorCodeSeries[0].errorCodes` | This is a mandatory parameter.<br>Possible values include all error codes in the respective HttpSeries(Ex: 4xx) value assinged for "errorSet". Use single value of -1 if all error codes are to be considered. | Data Type: String<br>Range: NA<br>Default Value: 400, 408,404,429 |
| `errorCodeSeriesList[0].errorCodeSeries[1].errorSet` | This is a mandatory parameter.<br>Possible values for "errorSet" attribute: 5xx, 4xx, 3xx, 2xx, 1xx | Data Type: String<br>Range: NA<br>Default Value: 5xx |
| `errorCodeSeriesList[0].errorCodeSeries[1].errorCodes` | This is a mandatory parameter.<br>Possible values include all error codes in the respective HttpSeries(Ex: 4xx) value assinged for "errorSet". Use single value of -1 if all error codes are to be considered. | Data Type: String<br>Range: NA<br>Default Value: 500, 503, 504 |
| `routesConfig[0].id` | This is a mandatory parameter.<br>It represents the id of the route. | Data Type: String<br>Range: NA<br>Default Value: n32f |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].uri | This is a mandatory parameter.<br>Service name of the internal microservice of this NF.<br>Note: Provide the actual port number of pn32f, if the user has modified the port. | Data Type: String<br>Range: NA<br>Default Value: http://{{ .Release.Name }}-pn32f-svc:9090/ |
| routesConfig[0].path | This is a mandatory parameter.<br>Provide the path to be matched. | Data Type: String<br>Range: NA<br>Default Value: /** |
| routesConfig[0].order | This is a mandatory parameter.<br>Provide the order of the execution of this route. | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| routesConfig[0].metadata.requestTimeout | This is a Optional parameter.<br>requestTimeout is used to set timeout at route level. Value should be in milliseconds. | Data Type: Integer<br>Range: NA<br>Default Value: 700 |
| routesConfig[0].metadata.requiredTime | This is a Optional parameter.<br>requiredTime is minimum time below which request will be rejected if isSbiTimerEnabled is true. Value should be in milliseconds | Data Type: Integer<br>Range: NA<br>Default Value: 3000 |
| routesConfig[0].metadata.xfccHeaderValidation.validationEnabled | This is a Optional parameter.<br>This is used to provide an option to enable/not enable route level xfccHeaderValidation. It overrides global configuration for xfccHeaderValidation.enabled | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| routesConfig[0].metadata.svcName | This is a Optional parameter.<br>The following parameter is configurable per route in route-metadata is used to track Overload Control data. If this parameter is not configured in route metadata then svc name from routesConfig.uri field is used as the required key to track Overload Control data.<br>The value of "svcName" attribute denotes the back-end service tag to be used as the required key (configurable per route) to track Overload Control data instead of using back-end service name from routesConfig[0].uri as the required key. | Data Type: String<br>Range: NA<br>Default Value: |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].filters.addRequestHeader[0].name | This is a Optional parameter.<br>This field is used for adding a request header at route level. Additional header can be configured by adding a new element in the next line and so on. | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.addRequestHeader[0].value | This is an Optional parameter.<br>value of the header to be added | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.invalidRouteFilter.errorCodeOnInvalidRoute | This is a mandatory parameter, (if invalidRouteFilter is required)<br>If invalidRouteFilter filter is configured, then keep the 'order' value highest compared to other routes. Comment the parameters related to invalidRouteFilter if configurable error code is not required for invalid route. Configurable error code for invalid route. | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.invalidRouteFilter.errorCauseOnInvalidRoute | This is a mandatory parameter, (if invalidRouteFilter is required)<br>Error cause for invalid route | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.invalidRouteFilter.errorTitleOnInvalidRoute | This is a mandatory parameter, (if invalidRouteFilter is required)<br>Error cause for invalid route | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.invalidRouteFilter.errorDescriptionOnInvalidRoute | This is a mandatory parameter, (if invalidRouteFilter is required)<br>Error cause for invalid route | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].removeRequestHeader[0].name | This is a Optional parameter.<br>This field is used for removing a request header at route level. Additional header can be configured by adding a new element in the next line and so on. | Data Type:<br>Range: NA<br>Default Value: forwarded<br>x-http2-scheme |
| routesConfig[0].removeResponseHeader[0].name | This is a Optional parameter.<br>Below field is used for removing a response header at route level. Additional header can be configured by adding a new element in the next line and so on. | Data Type:<br>Range: NA<br>Default Value:<br>nettylatency<br>requestmethod<br>error-reason |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `extraContainers` | This is a mandatory parameter.<br>Use 'extraContainers' attribute to control the usage of extra container(DEBUG tool).<br>Allowed Values: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>If assigned with ENABLED or USE_GLOBAL_VALUE, then ensure "extraContainers Tpl" Yaml chunk is defined<br>at Service level or Global level in the parent chart based on the value assigned respectivley. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| `prefix` | This is a mandatory parameter.<br>Support for multiple egress instances. When set to some value then that value will be used in the names of resources along with release name so that there will not be any clash between the instances. When the value of this flag is set to '' then the resources are prepended with release name only. | Data Type: String<br>Range: NA<br>Default Value: 'n32' |
| `global.k8sResources.pdb.supportedVersions` | Kubernetes resource PDB supported version | Data Type: String<br>Range: NA<br>Default Value: policy/v1 |
| `global.publicHttpSignalingPort` | This is a mandatory parameter.<br>Http Signalling port | Data Type: Integer<br>Range: NA<br>Default Value: 80 |
| `gloabl.publicHttpsSignallingPort` | This is a mandatory parameter.<br>Https Signalling port | Data Type: Integer<br>Range: NA<br>Default Value: 443 |
| `gloabl.serviceAccountName` | This is an optional parameter.<br>Service Account name.<br>Specify type of service - Possible values are :- ClusterIP, NodePort, LoadBalancer and ExternalName | Data Type: String<br>Range: NA<br>Default Value: ' ' |
| `global.type` | This is a mandatory parameter.<br>type of service | Data Type: String<br>Range: ClusterIP, NodePort, LoadBalancer and ExternalName<br>Default Value: NodePort |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.staticIpAddressEnabled` | This is an optional parameter.<br>If Static load balancer IP needs to be set, then set staticIpAddressEnabled flag to true and provide value for staticIpAddress.<br>**Note**: In dual stack environment, use annotation method to assign Load Balancer static IPs. For more details, refer 'Support for Dual Stack' section in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*. | Data Type: Boolean<br>Range: True or False<br>Default Value: False<br>**Note**: For Dual stack, the flag must be set to false. |
| `global.staticIpAddress` | This is an optional parameter.<br>Static load balancer IP. This parameter is used only when the `global.staticIpAddressEnabled` parameter is set to true. | Data Type: String<br>Range: NA<br>Default Value: 10.75.212.60 |
| `global.staticNodePortEnabled` | This is an optional parameter.<br>If Static node port needs to be set, then set staticNodePortEnabled flag to true and provide value for staticNodePort, else random node port will be assigned by K8. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `global.staticHttpNodePort` | This is a mandatory parameter.<br>Http Node Port | Data Type: Integer<br>Range: NA<br>Default Value: 30075 |
| `global.staticHttpsNodePort` | This is a mandatory parameter.<br>Https Node Port | Data Type: Integer<br>Range: NA<br>Default Value: 30043 |
| `global.logStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.crictlStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.ephemeralStorageLimit` | This is an optional parameter.<br>Ephemeral storage Limit | Data Type: Integer<br>Range: NA<br>Default Value: 1024 |
| `global.app_name` | This is an optional parameter.<br>App Name | Data Type: String<br>Range: NA<br>Default Value: ingress-gateway |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.xfccHeaderValidation.validation.enabled` | This is a mandatory parameter.<br>This parameter should be enabled in an ASM setup. It validates the xfcc header. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `global.xfccHeaderValidation.extract.enabled` | This is a mandatory parameter if global.xfccHeaderValidation.validation.enabled is true.<br>if set to true then xfcc header value is extracted for validation. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `global.xfccHeaderValidation.extract.certExtractIndex` | This is a mandatory parameter if global.xfccHeaderValidation.validation.enabled is true.<br>0 represents the right most field<br>1 represents the left most and 2-3rd from right most. | Data Type: Integer<br>Range: NA<br>Default Value: 0 |
| `global.xfccHeaderValidation.extract.extractField` | This is a mandatory parameter if global.xfccHeaderValidation.validation.enabled is true.<br>name of the field to be extracted. | Data Type: String<br>Range: NA<br>Default Value: DNS |
| `global.xfccHeaderValidation.extract.extractIndex` | This is a mandatory parameter if global.xfccHeaderValidation.validation.enabled is true.<br>0 represents the right most field<br>1 represents the left most and 2-3rd from right most. | Data Type: Integer<br>Range: NA<br>Default Value: 0 |
| `cfgServer.enabled` | This is an optional parameter.<br>Config server switch. For the usage of Policy teams. For other NF's this has to be left false | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `cfgClient.enabled` | This is an optional parameter.<br>Config Client switch | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `commonCfgClient.enabled` | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `commonCfgServer.configServerSvcName` | This is a Mandatory parameter if commonCfgClient.enabled is set to true<br>Service name of common configuration service to which the client tries to poll for configuration updates | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| commonCfgServer.host | This is an optional parameter. Host name of Common configuration server to which client tries to poll for configuration updates. This value is picked up if commonCfgServer.configServerSvcName is not available. | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.port | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Port of Common Configuration server. | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| commonCfgServer.pollingInterval | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>This is the interval between two subsequent polling requests from config client to server | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| commonServiceName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>This is the common service name that is currently requesting for configuration updates from server. | Data Type: String<br>Range: NA<br>Default Value: igw |
| restoreBackupOnInstall | This is an optional parameter.<br>This flag when enabled picks up the data from the backup table during installation of ingress gateway. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| dbConfig.dbHost | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Hostname of Mysql in which the configuration must be stored. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| dbConfig.dbPort | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Port of mysql. | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |
| dbConfig.configFile | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>File name for initial configuration that must be stored in the db. | Data Type: String<br>Range: NA<br>Default Value: defaultconfig.yaml |
| dbConfig.schemaFile | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>File name for json schema validation. | Data Type: String<br>Range: NA<br>Default Value: defaultconfig.yaml |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| dbConfig.secretName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Secret name from which the db name, db password and db user name is picked. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| dbConfig.dbName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Database name | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| dbConfig.dbUNameLiteral | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Name of the Key configured for "DB Username" in Secret with following name: "<dbConfig.secretName>" . | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| dbConfig.dbPwdLiteral | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Name of the Key configured for "DB Password" in Secret with following name: "<dbConfig.secretName>" | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| dbConfig.dbEngine | This is a Mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| image.name | This is an optional parameter.<br>Image name of ingress gateway | Data Type: String<br>Range: NA<br>Default Value: ocingress_gateway |
| image.tag | This is an optional parameter.<br>Image Tag name of ingress gateway | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |
| image.pullPolicy | This is an optional parameter.<br>Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| initContainersImage.name | This is an optional parameter.<br>Image name of initContainer | Data Type: String<br>Range: NA<br>Default Value: configurationinit |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| initContainersImage.tag | This is an optional parameter. Image tag name of initContainer | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-config-tag |
| initContainersImage.pullPolicy | This is an optional parameter. Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| updateContainersImage.name | This is an optional parameter. Image name of updateContainer | Data Type: String<br>Range: NA<br>Default Value: configurationupdate |
| updateContainersImage.tag | This is an optional parameter. Image tag name of updateContainer | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-config-tag |
| updateContainersImage.pullPolicy | This is an optional parameter. Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| dbHookImage.name | This is an optional parameter.<br>Image name of dbHook | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| dbHookImage.tag | This is an optional parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-dbhook-tag |
| dbHookImage.pullPolicy | This is an optional parameter.<br>Pull Policy of Image | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| service.ssl.privateKey.k8SecretName | This is a mandatory parameter. Name of the privatekey secret | Data Type: String<br>Range: NA<br>Default Value: ocsepp-n32-secret |
| service.ssl.privateKey.k8NameSpace | This is a mandatory parameter. Namespace of privatekey | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| service.ssl.privateKey.rsa.fileName | This is a mandatory parameter. rsa private key file name | Data Type: String<br>Range: NA<br>Default Value: rsa_private_key_pkcs1.pem |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| service.ssl.privateKey.ecdsa.fileName | This is a mandatory parameter. ecdsa private key file name | Data Type: String<br>Range: NA<br>Default Value: ssl_ecdsa_private_key.pem |
| service.ssl.certificate.k8SecretName | This is a mandatory parameter. Name of the certificate secret | Data Type: String<br>Range: NA<br>Default Value: ocsepp-n32-secret |
| service.ssl.certificate.k8NameSpace | This is a mandatory parameter. Namespace of certificate | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| service.ssl.certificate.rsa.fileName | This is a mandatory parameter. rsa certificate key file name | Data Type: String<br>Range: NA<br>Default Value: ocsepp.cer |
| service.ssl.certificate.ecdsa.fileName | This is a mandatory parameter. ecdsa certificate key file name | Data Type: String<br>Range: NA<br>Default Value: ssl_ecdsa_certificate.crt |
| service.ssl.caBundle.k8SecretName | This is a mandatory parameter. Name of the caBundle secret | Data Type: String<br>Range: NA<br>Default Value: ocsepp-n32-secret |
| service.ssl.caBundle.k8NameSpace | This is a mandatory parameter. Namespace of the caBundle | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| service.ssl.caBundle.fileName | This is a mandatory parameter. rsa private key file name | Data Type: String<br>Range: NA<br>Default Value: caroot.cer |
| service.ssl.keyStorePassword.k8SecretName | This is a mandatory parameter. Secret name that contains keyStorePassword | Data Type: String<br>Range: NA<br>Default Value: ocsepp-n32-secret |
| service.ssl.keyStorePassword.k8NameSpace | This is a mandatory parameter. Namespace in which SEPPs keystore password is present | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| service.ssl.keyStorePassword.fileName | This is a mandatory parameter. File name that has password for keyStore | Data Type: String<br>Range: NA<br>Default Value: key.txt |
| service.ssl.trustStorePassword.k8SecretName | This is a mandatory parameter. Secret name that contains trustStorePassword | Data Type: String<br>Range: NA<br>Default Value: ocsepp-n32-secret |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| service.ssl.trustStorePassword.k8NameSpace | This is a mandatory parameter. Namespace in which trustStorePassword is present | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| service.ssl.trustStorePassword.fileName | This is a mandatory parameter. File name that has password for trustStore | Data Type: String<br>Range: NA<br>Default Value: trust.txt |
| service.ssl.initialAlgorithm | This is a mandatory parameter. Algorithm based on the certificate | Data Type: String<br>Range: NA<br>Default Value: RS256 |
| service.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to n32-igw specific Service | Data Type: String<br>Range: NA<br>Default Value: { } |
| service.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to n32-igw specific Services | Data Type: String<br>Range: NA<br>Default Value: { } |
| deployment.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to n32-igw specific deployment | Data Type: String<br>Range: NA<br>Default Value: { } |
| deployment.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to n32-igw specific deployment | Data Type: String<br>Range: NA<br>Default Value: { } |
| ports.containerPort | This is an optional parameter. ContainerPort represents a network port in a single container | Data Type: Integer<br>Range: NA<br>Default Value: 8081 |
| ports.containersslPort | This is an optional parameter. Ssl port of the container | Data Type: Integer<br>Range: NA<br>Default Value: 8443 |
| ports.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups). ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 9094 |
| log.level.root | This is an optional parameter. Log level for root logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.ingress | This is an optional parameter. Log level for ingress logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| log.level.oauth | This is an optional parameter.<br>Log level for oauth logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.updateContainer | This is an optional parameter.<br>Log level for updateContainer | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.hook | This is an optional parameter.<br>Log level for hook | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.cncc.root | This is an optional parameter.<br>Log level for cncc logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.cncc.audit | This is an optional parameter.<br>Log level for cncc logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.cncc.security | This is an optional parameter.<br>Log level for cncc logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: WARN |
| log.level.cncc.loggingFilters | This is an optional parameter.<br>logging filters | Data Type: String<br>Range: NA<br>Default Value: [ ] |
| log.level.cncc.loggingMasks | This is an optional parameter.<br>logging mask | Data Type: String<br>Range: NA<br>Default Value: [ ] |
| log.traceIdGenerationEnabled | This is an optional parameter.<br>TraceId Generation is Enabled | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| resources.limits.cpu | This is an optional parameter.<br>CPU Limit | Data Type: Integer<br>Range: NA<br>Default Value: 6 |
| resources.limits.initServiceCpu | This is an optional parameter. Init Container CPU Limit | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| resources.limits.updateServiceCpu | This is an optional parameter.<br>Update Container CPU Limit | Data Type: Integer<br>Range: NA<br>Default Value: 1 |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `resources.limits.memory` | This is an optional parameter. Memory Limit | Data Type: String<br>Range: NA<br>Default Value: 5Gi |
| `resources.limits.commonHooksCpu` | This is an optional parameter. Db Hook Container CPU Limit | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `resources.limits.updateServiceMemory` | This is an optional parameter. Update Container Memory Limit | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.limits.initServiceMemory` | This is an optional parameter. int Container Memory Limit | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.limits.commonHooksMemory` | This is an optional parameter. Db Hook Container Memory Limit | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.requests.cpu` | This is an optional parameter. CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value: 6 |
| `resources.requests.initServiceCpu` | This is an optional parameter. Init Container CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `resources.requests.updateServiceCpu` | This is an optional parameter. Update Container CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `resources.requests.memory` | This is an optional parameter. Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 5Gi |
| `resources.requests.commonHooksCpu` | This is an optional parameter. Db Hook Container CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `resources.requests.updateServiceMemory` | This is an optional parameter. Update Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.requests.initServiceMemory` | This is an optional parameter. Init Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.requests.commonHooksMemory` | This is an optional parameter. Db Hook Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.target.averageCpuUtil` | This is an optional parameter. Average CPU for target | Data Type: Integer<br>Range: NA<br>Default Value: 70 |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| maxUnavailable | This is an optional parameter. Number of Pods that will be unavailable during a disruption | Data Type: String<br>Range: NA<br>Default Value: 25% |
| minReplicas | This is an optional parameter. Min replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| maxReplicas | This is an optional parameter. Max replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| jaegerTracingEnabled | This is an optional parameter. Enable jaeger tracing | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| openTracing.jaeger.enableb3Propagation | This is an Mandatory parameter If jaegerTracingEna bled is true<br>To send b3 zipkin headers instead of uber-trace-id | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| openTracing.jaeger.udpSender.host | This is an optional parameter. Jaeger Host | Data Type: String<br>Range: NA<br>Default Value: occne-tracer-jaeger-agent.occne-infra |
| openTracing.jaeger.udpSender.port | This is an optional parameter. Jaeger Port | Data Type: Integer<br>Range: NA<br>Default Value: 6831 |
| openTracing.jaeger.probabilisticSampler | This is an optional parameter. Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 |
| needClientAuth | This is an optional parameter.<br>This must be true if client certificate identity is required in the header x-custom-ingress-client-identity | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| sbiPriorityHeaderName | This is an optional parameter.<br>This parameters defines the header name which will contain the SBI Priority value | Data Type: String<br>Range: NA<br>Default Value: 3gpp-sbi-message-priority |
| dnsRefreshDelay | This is an optional parameter.<br>Dns Refresh Delay in milli-seconds | Data Type: Integer<br>Range: NA<br>Default Value: 120000 # ms |
| ingressGwCertReloadEnabled | This is an optional parameter.<br>changes in k8s secrets | Data Type: boolean<br>Range: True or False<br>Default Value: True |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| ingressGwCertReloadPath | This is an optional parameter.<br>Path to reload ingress gateway certificate | Data Type: String<br>Range: NA<br>Default Value: /ingress-gw/certificate/reload |
| ingressGwCertReloadDelay | This is an optional parameter.<br>The polling interval to monitor k8s secrets for changes. | Data Type: init<br>Range: NA<br>Default Value: 15000 |
| rateLimiting.enabled | This is an optional parameter. This parameter enables Rate Limiting on Ingress Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: True |
| rssRateLimiter.enabled | This is an optional parameter.<br>This parameter enables Ingress Rate Limiting per Remote SEPP Set on Ingress Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: True |
| globalIngressRateLimiting.enabled | This is an optional parameter. This parameter enables Global Rate Limiting on Ingress Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: false |
| globalIngressRateLimiting.duration | This is a mandatory parameter( if globalIngressRateLimiting is enabled to true). Iterations of time duration(In seconds) for which bucketCapacity and refillRate are reset. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| globalIngressRateLimiting.burstCapacity | This is a mandatory parameter. ( if globalIngressRateLimiting is enabled true)Holds maximum number of tokens in the bucket for the given duration | Data Type: Integer<br>Range: NA<br>Default Value: 7500 |
| globalIngressRateLimiting.refillRate | This is a mandatory parameter ( if globalIngressRateLimiting is enabled true)<br>Number of tokens to be added to the bucket for the given duration<br>Recommended to have refillRate equal to burstCapacity | Data Type: Integer<br>Range: NA<br>Default Value: 7500 |
| errorCodeOnRateLimit | This is a conditional parameter ( if globalIngressRateLimiting is enabled true)<br>Configurable error code returned when ratelimit is reached.<br>Populated in ProblemDetails response in ProblemDetails.status section. | Data Type: Integer<br>Range: NA<br>Default Value: 429 |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| gracefulShutdown.gracePeriod | This is an optional parameter.<br>Grace period to wait for active requests to be executed.<br>If there are no active requests then this period is neglected.<br># 's' in case of seconds and 'm' in case of minutes | Data Type: String<br>Range: NA<br>Default Value: 1m |
| gracefulShutdown.defaultErrorCode | This is a optional parameter<br>Default error code returned at the time of Graceful shut down | Data Type: Integer<br>Range: NA<br>Default Value: 500 |
| gracefulShutdown.errorDescription | This is an optional parameter.<br>Graceful shut down Error description | Data Type: String<br>Range: NA<br>Default Value: " " |
| gracefulShutdown.errorCause | This is an optional parameter.<br>Graceful shut down error cause | Data Type: String<br>Range: NA<br>Default Value: " " |
| gracefulShutdown.errorTitle | This is an optional parameter.<br>Graceful shut down error title | Data Type: String<br>Range: NA<br>Default Value: " " |
| gracefulShutdown.retryAfter | This is an optional parameter.<br>determines the value in seconds per particular date after which the service should be retried post graceful shutdown. | Data Type: String<br>Range: NA<br>Default Value: " " |
| gracefulShutdown.redirectUrl | This is an optional parameter.<br>redirection URL for validation failure due to graceful shutdown | Data Type: String<br>Range: NA<br>Default Value: " " |
| dnsSrv.host | This is an optional parameter.<br>DNS SRV Host name | Data Type: String<br>Range: NA<br>Default Value: localhost |
| dnsSrv.port | This is an optional parameter.<br>DNS SRV port number | Data Type: Integer<br>Range: NA<br>Default Value: 8004 |
| dnsSrv.scheme | This is an optional parameter.<br>DNS SRV scheme name | Data Type: String<br>Range: NA<br>Default Value: http |
| nettyIdleTimeout | This is an optional parameter.<br>Netty Idle Timeout in milliseconds | Data Type: Integer<br>Range: NA<br>Default Value: 120000000 #(ms) |
| nfFqdn | This is a mandatory parameter.<br>NF FQDN | Data Type: String<br>Range: NA<br>Default Value: sepp2.inter.oracle.com |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| messageCopy.enabled | This is an optional parameter. This parameter enables or disables the Message feed feature at the Ingress Gateway. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.copyPayload | This is an optional parameter. This parameter specifies whether to copy the message payload in the feed towards Data Director or not.<br>true: the complete payload message is copied.<br>false: Only the header information is copied. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.topicName | This is an optional parameter. Name of the topic to which Ingress Gateway send the payloads. | Data Type: String<br>Range: NA<br>Default Value: message.copy |
| messageCopy.ackRequired | This is a mandatory parameter. This parameter specifies if we wait for any acknowledgement from DD. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.retryOnFailure | This is a mandatory parameter. This parameter specifies how many times SEPP should retry if message was not sent to DD successfully. | Data Type: Integer<br>Range: NA<br>Default Value: 0 |
| messageCopy.security.enabled | This is a mandatory parameter. Security mode enabled for message feed feature | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.security.protocol | This is a conditional parameter.<br>It is used for message feed feature when security is enabled between SEPP and Gateway. | Data Type: String<br>Range: SASL_SSL or SSL<br>Default Value: SASL_SSL |
| messageCopy.security.tlsVersion | This is a mandatory parameter. TLS version details. | Data Type: String<br>Range: TLSv1.2, TLSv1.3<br>Default Value: TLSv1.3 |
| messageCopy.security.saslConfiguration.username | This is a mandatory parameter. username for DD<br>Refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: test |
| messageCopy.security.saslConfiguration.password | This is a mandatory parameter. Password for gateway on which feature enabled | Data Type: Object<br>Range: NA<br>Default: |
| messageCopy.security.saslConfiguration.password.k8SecretName | This is a mandatory parameter. Secret name for gateway on which feature enabled | Data Type: String<br>Range: ocsepp-plmn-secret for PLMN Gateways and ocsepp-n32-secret for N32 Gateways<br>Default Value: message-copy-secret |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `messageCopy.security.saslConfiguration.password.k8NameSpace` | This is a mandatory parameter. Namespace where DD deployed<br>Please refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: ocingress |
| `messageCopy.security.saslConfiguration.password.fileName` | This is a mandatory parameter. File used to create DD secrets<br>Please refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: password.txt |
| `messageCopy.threadPoolConfigurations.coreSize` | This is an optional parameter. core Size for thread pool configuration for message feed thread.<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| `messageCopy.threadPoolConfigurations.maxSize` | This is an optional parameter. max Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| `messageCopy.threadPoolConfigurations.queueCapacity` | This is an optional parameter. queue capacity for thread pool configuration message feed thread<br>For performance enhancement, set the value as 3000. | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |
| `kafka.bootstrapAddress` | This is an conditional parameter. List of comma- separated Kafka Nodes (to which messages should be copied if messageCopy feature is enabled). | Data Type: String<br>Range: NA<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| `egressRateLimiter.enabled` | This is an optional parameter.<br>This parameter is used to enable or disable the egress rate limiting per egress rate limiting list on Ingress Gateway. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `clientDisabledExtension` | This is an optional parameter.<br>Disables the extension sent by messages originated by clients (ClientHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: ec_point_formats |
| `serverDisabledExtension` | This is an optional parameter.<br>Disables the extension sent by messages originated by servers (ServerHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `tlsNamedGroups` | This is an optional parameter.<br>Provides a list of values sent in the supported_groups extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| `clientSignatureSchemes` | This is an optional parameter.<br>Provides a list of values sent in the signature_algorithms extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| `service.ssl.tlsVersion` | This is a mandatory parameter.<br>Indicates the TLS version. | **Data Type**: String<br>**Range**:<br>• TLSv1.2 , TLSv1.3<br>• TLSv1.2<br>• TLSv1.3<br>**Default Value**: TLSv1.2, TLSv1.3 |
| `allowedCipherSuites` | This is an optional parameter.<br>Indicates allowed Ciphers. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>`- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384`<br>`- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256`<br>`- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256`<br>`- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256`<br>`- TLS_AES_256_GCM_SHA384`<br>`- TLS_AES_128_GCM_SHA256`<br>`- TLS_CHACHA20_POLY1305_SHA256` |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| cipherSuites | This is an optional parameter. Indicates supported cipher suites. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |
| healthCheckMonitoring.enabled | This is an optional parameter. Enables the support of health check API on the N32 Ingress gateway. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |
| keybasedKafkaProducer | This is a mandatory parameter.<br>This parameter when set to true, enables the functionality of message copy of same transaction into same Kafka partition. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |
| podSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents pod from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| podSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that all processes in pod must run with the provided user ID. | Data Type: Integer<br>Default Value: 10001 |
| securityContext.enable | This is a mandatory parameter.<br>Enables security context for containers. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.readOnlyRootFilesystem | This is a mandatory parameter.<br>Mounts the mediation container's root filesystem as read-only. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| containerSecurityContext.allowPrivilegeEscalation | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. allowPrivilegeEscalation is always set to true when the container:<br>• is run as privileged<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents containers from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.privileged | This is a mandatory parameter.<br>Provides containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that for any container in the pod, all processes must run with the provided user ID. | Data Type: Integer<br>Range: Valid IDs for security context for user<br>Default Value: 10001 |
| containerSecurityContext.capabilities.drop | This is a mandatory parameter.<br>Manages Linux capabilities for containers. Using Linux capabilities, you can grant certain privileges to a process without granting all the privileges of the root user. | Data Type: List of strings<br>Range: Valid Linux capabilities<br>Default Value: -all |
| enablePodSecurityContext | This is a mandatory parameter.<br>Enables security context for pod. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| deploymentMode | This is a mandatory parameter.<br>This parameter defines the deployment mode for SEPP. That is, Single Stack or Dual Stack. | Data Type: String<br>Range: IPv4, IPv6, IPv6_IPv4, and IPv4_IPv6.<br>Default Value:<br>SEPP/Roaming Hub:<br>In single stack mode, default value: IPv4<br>In dual stack mode, default value: IPv6_IPv4 (IPv6 preferred) |
| global.lciHeaderConfig.enabled | This is an optional parameter.<br>If this parameter is set to true, LCI headers reporting is enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.lciHeaderConfig.loadThreshold` | This is an optional parameter.<br>This parameter defines the load threshold configuration, if the current load level is beyond previously computed load level plus loadThreshold, LCI headers are reported again. | Data Type: Integer<br>Range: NA<br>Default Value: 40 |
| `global.lciHeaderConfig.localLciHeaderValidity` | This is an optional parameter.<br>This parameter defines the validity period of LCI headers reported to consumer NF. The LCI headers are reported again once the validity period has expired. | Data Type: Integer<br>Range: NA<br>Default Value: 10000 (milliseconds) |
| `global.ociHeaderConfig.enabled` | This is an optional parameter.<br>If this parameter is set to true, OCI headers reporting will be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `global.ociHeaderConfig.validityPeriod` | This is an optional parameter.<br>Validity period of OCI headers reported to consumer NF. The OCI headers are reported again if the headers reported previously expire. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 (milliseconds) |
| `global.ociHeaderConfig.overloadConfigRange.minor` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>This parameter defines the range to identify minor overload condition. | Data Type: Integer<br>Range: 0 to 100<br>Default Value: 60-70 |
| `global.ociHeaderConfig.overloadConfigRange.major` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>This parameter defines the range to identify major overload condition. | Data Type: Integer<br>Range: 0 to 100<br>Default Value: 70-80 |
| `global.ociHeaderConfig.overloadConfigRange.critical` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>This parameter defines the range to identify critical overload condition. | Data Type: Integer<br>Range: 0 to 100<br>Default Value: 80-100 |
| `global.ociHeaderConfig.reductionMetrics.minor` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>This parameter defines the reduction metric to be reported for minor overload condition. | Data Type: Integer<br>Range: 1 to 9<br>Default Value: 5 |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.ociHeaderConfig.reductionMetrics.major` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>This parameter defines the reduction metric to be reported for major overload condition. | Data Type: Integer<br>Range: 5 to 15<br>Default Value: 10 |
| `global.ociHeaderConfig.reductionMetrics.critical` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>This parameter defines the reduction metric to be reported for critical overload condition. | Data Type: Integer<br>Range: 10 to 50<br>Default Value: 30 |
| `global.nfInstanceId` | This is a mandatory parameter, if the OCI and LCI header feature is enabled.<br>NF Instance Id of producer NF. | Data Type: String<br>Range: NA<br>Default Value: 6faf1bbc-6e4a-4454-a507-a14ef8e1bc11 |
| `global.nfType` | This is a mandatory parameter, if the f OCI and LCI header eature is enabled.<br>NF type of producer NF. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.nfFqdn` | This is a mandatory parameter.<br>This is the NF FQDN for SEPP | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.svcToSvcInstanceIdMapping.svcName` | This is an optional parameter.<br>This parameter defines the back-end service name which should match `producerSvcIdHeader` value and perf-info reported service name for LCI or OCI headers reporting. | Data Type: String<br>Range: NA<br>Default Value: nf-registration |
| `global.svcToSvcInstanceIdMapping.serviceInstanceId` | This is an optional parameter.<br>This parameter defines the Back-end service instance id to be included in LCI / OCI headers. | Data Type: String<br>Range: NA<br>Default Value: fe7d992b-0541-4c7d-ab84-c6d70b1b01b1 |
| `global.perfInfoConfig.pollingInterval` | This is an optional parameter.<br>This parameter defines the Configurable interval at which load infromation is polled from perf-info service at Gateway. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| `global.perfInfoConfig.serviceName` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the perf-info service name. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.perfInfoConfig.host` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the perf-info Host IP. | Data Type: String<br>Range: NA<br>Default Value: NA |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.perfInfoConfig.port` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the perf-info port. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.perfInfoConfig.perfInfoRequestMap` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the perf-info service request endpoint. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `tlsVersionSupportForKubeApiServer.enabled` | This is an optional parameter.<br>This parameter enables or disables TLS 1.3 support for establishing communication between Gateway Services and Kubernetes API server (Kube\u0002Api-Server). If this parameter is enabled, support for establishing communication with Kube\u0002Api-Server is provided through TLS 1.3, along with TLS 1.2 as configured in `kubeApiServerTlsVersion`. If this parameter is disabled, support for communication with Kube-Api-Server is provided only through TLS 1.2. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion` | This is a mandatory parameter. This parameter defines the supported TLS versions used by Gateway Services to communicate with the Kube-API-Server. | Data Type: String<br>Range: TLS 1.2 and TLS 1.3<br>Default Value: TLS 1.3 |
| `tlsVersionSupportForKubeApiServer.cipherSuites` | This is a mandatory parameter. This parameter indicates the Cipher suites that are compliant with the configured `tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion` | Data Type: String<br>Range: NA<br>Default Value:<br>• TLS_AES_256_GCM_SHA384<br>• TLS_AES_128_GCM_SHA256<br>• TLS_CH ACHA20 _POLY1305_SHA 256 |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is an optional parameter. This parameter indicates the list of all the secrets that are used for all the features of Gateway Services. These secrets are volume mounted during the pod deployment. | Data Type: String<br>Range: NA<br>Default Value:<br>• ocegress -secret1<br>• ocegress -secret2<br>• ocegress -secret3 |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `overloadControlLocalDiscardEnabled` | This is an optional parameter. This parameter enables each pod independently to discard requests based on its local load. This parameter can have the following values:<br>• true: No coherence-based token reservation is required.<br>• false: Coherence is used for token reservations across pods. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |
| `startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |
| `startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| `readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `readinessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `readinessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `readinessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `readinessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| stripLeadingSpacesRequest | This is an optional parameter.<br>This parameter removes leading whitespace, if any, from inbound HTTP/2 request headers at Ingress Gateway. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| n32-ingress-gateway.isSbiTimerEnabled | This is an optional parameter.<br>This flag is used to enable or disable SBI Timer feature for calculating request timeout at n32-ingress-gateway | **Data Type**: boolean<br>**Default Value**: false<br>**Range**: NA |
| n32-ingress-gateway.sbiTimerTimezone | This is an optional parameter.<br>This flag is used to configure Timezone mode for SBI timer logic at n32-ingress-gateway. | **Data Type**: String<br>**Default Value**: GMT<br>**Range**: GMT,ANY |


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**Table 3-8 (Cont.) n32-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| n32-ingress-gateway.multiFqdn.enabled | This is a mandatory parameter.<br>This flag enables the multiple FQDN support for hosted sepp mode. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| n32-ingress-gateway.multiFqdn.fqdnDetails.fqdn | This is a conditional parameter.<br>This parameter indicates the FQDN/SAN value for which certificates need to be configured. | Data Type: String<br>Range: String<br>Default Value: dummy.com |
| n32-ingress-gateway.multiFqdn.fqdnDetails.caroot_file | This is a conditional parameter.<br>This parameter indicates the caroot file name details of corresponding FQDN which are present in the secret. | Data Type: String<br>Range: String<br>Default Value: dummy.com_caroot.cer |
| n32-ingress-gateway.multiFqdn.fqdnDetails.key_store_passwd_file | This is a conditional parameter.<br>This parameter indicates the keystore password file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_key.txt |
| n32-ingress-gateway.multiFqdn.fqdnDetails.ocsepp_cert_file | This is a conditional parameter.<br>This parameter indicates the ocsepp certificate file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_ocsepp.cer |
| n32-ingress-gateway.multiFqdn.fqdnDetails.rsa_certificate_file | This is a conditional parameter.<br>This parameter indicates the RSA certificate file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_rsa_certificate.crt |
| n32-ingress-gateway.multiFqdn.fqdnDetails.rsa_private_key_file | This is a conditional parameter.<br>RSA private key file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_rsa_private_key_pkcs1.pem |
| n32-ingress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_certificate_file | This is a conditional parameter.<br>SSL ECDSA certificate file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_ssl_ecdsa_certificate.crt |
| n32-ingress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_private_key_file | This is a conditional parameter.<br>SSL ECDSA private key file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_ssl_ecdsa_private_key.pem |
| n32-ingress-gateway.multiFqdn.fqdnDetails.trust_store_passwd_file | This is a conditional parameter.<br>truststore password file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_trust.txt |


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## 3.1.8 plmn-ingress-gateway

This section includes information about the plmn-ingress-gateway parameters of the SEPP.

**Table 3-9 plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `cmName` | This is an optional parameter.<br>To enable the span | Data Type: String<br>Range: NA<br>Default Value: ingress gateway |
| `serviceMeshCheck` | This is a mandatory parameter.<br>when enabled, OAuth signature validation is disabled<br>ASM setup: When serviceMeshCheck is enabled signature validation of certificate is skipped. There is no need to configure the certificate or the secret. | Data Type: Boolean<br>Range: NA<br>Default Value: false |
| `istioSidecarQuitUrl` | This is a mandatory parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: Boolean<br>Range: NA<br>Default value: http://127.0.0.1:15020/quitquitquit<br>Note: Port should be envoy admin port. |
| `istioSidecarReadyUrl` | This is a mandatory parameter.<br>The sidecar (istio ready url)when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: Boolean<br>Range: NA<br>Default value: http://127.0.0.1:15020/ready<br>Note: Port should be envoy admin port. |
| `ingressServer.keepAlive.enabled` | This is a Optional parameter.<br>If enabled netty server will send keep alive message for each connection. | Data Type: Boolean<br>Range: NA<br>Default Value: true |
| `ingressServer.keepAlive.idleTime` | This is a Optional parameter.<br>Time after which keep alive will be tried after successful response from the peer. | Data Type: Integer<br>Range: NA<br>Default Value: 180<br>(Second) |
| `ingressServer.keepAlive.count` | This is a Optional parameter.<br>No of times it should retry if there is no response for keep alive. | Data Type: Integer<br>Range: NA<br>Default Value: 6 |
| `ingressServer.keepAlive.interval` | This is a Optional parameter.<br>The interval after which it should retry in case of failure. | Data Type: Integer<br>Range: NA<br>Default Value: 60<br>(Second) |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| serverHeaderConfigMode | Possible values: HELM, REST. Based on this value, the feature flag for "server" header will need to be enabled either in Helm configuration or Rest configuration. | Data Type: Enum<br>Range: NA<br>Default Value: HELM |
| serverHeaderDetails.enabled | All attributes under "serverHeaderDetails" will need to be configured only if "serverHeaderConfigMode" is set as "HELM"<br>If enabled at Global level, Global conf will be used by default if no conf exists at Route level. | Data Type: Boolean<br>Range: NA<br>Default Value: false |
| serverHeaderDetails.errorCodeSeriesId | Mandatory parameter if not defined at Route level. By default used for Global level conf. Value need to be one among "errorCodeSeriesList" resource defined below. | Data Type: String<br>Range: NA<br>Default Value: E1 |
| serverHeaderDetails.configuration.nfType | Mandatory parameter. This value is common across Global and Route level conf. If not defined, server header will not be included in response. | Data Type: String<br>Range: NA<br>Default Value: SEPP |
| serverHeaderDetails.configuration.nfInstanceId | Optional parameter. This value is common across Global and Route level conf. If not defined, only "nfType" will be used for server header value. | Data Type: String<br>Range: NA<br>Default Value: 9faf1bbc-6e4a-4454-a507-aef01a101a06 |
| errorCodeSeriesList[0].id | This is a Optional parameter.<br>it is used for assigning "errorCodeSeriesId" either at Global or Route level conf for Server header. | Data Type: String<br>Range: NA<br>Default Value: E1 |
| errorCodeSeriesList[0].errorCodeSeries[0].errorSet | This is a mandatory parameter.<br>Possible values for "errorSet" attribute: 5xx, 4xx, 3xx, 2xx, 1xx | Data Type: String<br>Range: NA<br>Default Value: 4xx |
| errorCodeSeriesList[0].errorCodeSeries[0].errorCodes[0] | This is a mandatory parameter.<br>Possible values include all error codes in the respective HttpSeries(Ex: 4xx) value assinged for "errorSet". Use single value of -1 if all error codes are to be considered. | Data Type: String<br>Range: NA<br>Default Value: 400, 408, 404 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| extraContainers | This is a mandatory parameter.<br>The attribute is used to control the usage of extra container(DEBUG tool).<br>Allowed Values: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>If assigned with ENABLED or USE_GLOBAL_VALUE, then ensure "extraContainers Tpl" yaml chunk is defined at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: String<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| prefix | This is a mandatory parameter.<br>When set to some value then that value will be used in the names of resources along with release name. | Data Type: String<br>Range: NA<br>Default Value:<br>'plmn' |
| global.k8sResources.pdb.supportedVersions | Kubernetes resource PDB supported version. | Data Type: String<br>Range: NA<br>Default Value: policy/v1 |
| global.publicHttpSignalingPort | This is a mandatory parameter.<br>Http Signalling port. | Data Type: IntegerRange: NADefault Value:<br>Data Type: Integer<br>Range: NA<br>Default Value:<br>80 |
| gloabl.publicHttpsSignallingPort | This is a mandatory parameter.<br>Https Signalling port. | Data Type: Integer<br>Range: NA<br>Default Value:<br>443 |
| gloabl.serviceAccountName | This is an optional parameter.<br>Service Account name. | Data Type: String<br>Range: NA<br>Default Value: ' ' |
| global.type | This is an optional parameter.<br>Type of service. | Data Type: String<br>Default Value:<br>Possible values are ClusterIP, NodePort, LoadBalancer and ExternalName<br>Default Value: NodePort |
| global.intraNFCommunicationPort | This is a mandatory parameter.<br>PLMN IGW Port for intra NF communication. | Data Type: Integer<br>Range: NA<br>Default Value:<br>8008 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.intraNFComPortName` | This is a mandatory parameter. Name of the PLMN IGW Port for intra NF communication. | Data Type: String<br>Range: NA<br>Default Value: http2intranf |
| `global.staticIpAddressEnabled` | This is an optional parameter.<br>If Static load balancer IP needs to be set, then set staticIpAddressEnabled flag to true and provide value for staticIpAddress<br>Else random IP will be assigned by the metalLB from its IP Pool.<br>**Note**: In dual stack environment, use annotation method to assign Load Balancer static IPs. For more details, refer 'Support for Dual Stack' section in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `global.staticIpAddress` | This is an optional parameter. StaticIp. | Data Type: String<br>Range: NA<br>Default Value: 10.75.212.60 |
| `global.staticNodePortEnabled` | This is an optional parameter. Node Port Enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `global.staticHttpNodePort` | Http Node Port. | Data Type: Integer<br>Range: NA<br>Default Value: 30085 |
| `global.staticHttpsNodePort` | Https Node Port. | Data Type: Integer<br>Range: NA<br>Default Value: 30053 |
| `global.logStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.crictlStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.ephemeralStorageLimit` | This is an optional parameter.<br>Ephemeral storage Limit. | Data Type:<br>Range: NA<br>Default Value: 1024 |
| `commonCfgClient.enabled` | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| commonCfgServer.configServerSvcName | This is a Mandatory parameter if commonCfgClient.enabled is set to true<br>Service name of common configuration service to which the client tries to poll for configuration updates. | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.host | This is an optional parameter. Host name of Common configuration server to which client tries to poll for configuration updates. This value is picked up if commonCfgServer.configServerSvcName is not available. | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.port | This is a Mandatory parameter if commonCfgClient.enabled is set to true<br>Port of Common Configuration server. | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| commonCfgServer.pollingInterval | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>This is the interval between two subsequent polling requests from config client to server | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| commonServiceName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>This is the common service name that is currently requesting for configuration updates from server. | Data Type: string<br>Range: NA<br>Default Value: egw |
| restoreBackupOnInstall | This is an optional parameter.<br>This flag when enabled picks up the data from the backup table during installation of ingress gateway. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| dbConfig.dbHost | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Hostname of Mysql in which the configuration must be stored. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| dbConfig.dbPort | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Port of mysql. | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| dbConfig.configFile | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>File name for initial configuration that must be stored in the db. | Data Type: String<br>Range: NA<br>Default Value: defaultconfig.yaml |
| dbConfig.schemaFile | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>File name for json schema validation. | Data Type: String<br>Range: NA<br>Default Value: defaultschema.json |
| dbConfig.secretName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Secret name from which the db name, db password and db user name is picked. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| dbConfig.dbName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Database name. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| dbConfig.backupDbName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>configure when your backup table should have separate schema | Data Type:<br>Range: NA<br>Default Value: |
| dbConfig.dbUNameLiteral | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Name of the Key configured for "DB Username" in Secret with following name: "<dbConfig.secretName>". | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| dbConfig.dbPwdLiteral | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>Name of the Key configured for "DB Password" in Secret with following name: "<dbConfig.secretName>". | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| dbConfig.dbEngine | This is a Mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| image.name | This is an optional parameter. Image name of ingress gateway. | Data Type: String<br>Range: NA<br>Default Value:<br>ocingress_gateway |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| image.tag | This is an optional parameter. Image Tag name of ingress gateway. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |
| image.pullPolicy | This is an optional parameter. Image Pull Policy. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| initContainersImage.name | This is an optional parameter. Image name of initContainer. | Data Type: String<br>Range: NA<br>Default Value: configurationinit |
| initContainersImage.tag | This is an optional parameter. Image tag name of initContainer. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |
| initContainersImage.pullPolicy | This is an optional parameter. Image Pull Policy. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| updateContainersImage.name | This is an optional parameter. Image name of updateContainer. | Data Type: String<br>Range: NA<br>Default Value: configurationupdate |
| updateContainersImage.tag | This is an optional parameter. Image tag name of updateContainer. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |
| updateContainersImage.pullPolicy | This is an optional parameter. Image Pull Policy. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| dbHookImage.name | This is an optional parameter. Image name of dbHook. | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| dbHookImage.tag | This is an optional parameter. Image tag name of dbHook. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |
| dbHookImage.pullPolicy | This is an optional parameter. Pull Policy of Image. | Data Type: String<br>Range: NA<br>Default Value: Always |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| service.ssl.privateKey.k8SecretName | This is a mandatory parameter. Name of the privatekey secret. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.privateKey.k8NameSpace | This is a mandatory parameter. Namespace of privatekey. | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.privateKey.rsa.fileName | This is a mandatory parameter. rsa private key file name. | Data Type: String<br>Range: NA<br>Default Value:<br>rsa_private_key_pkcs1.pem |
| service.ssl.privateKey.ecdsa.fileName | This is a mandatory parameter. ecdsa private key file name. | Data Type: String<br>Range: NA<br>Default Value:<br>ssl_ecdsa_private_key.pem |
| service.ssl.certificate.k8SecretName | This is a mandatory parameter. Name of the certificate secret. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.certificate.k8NameSpace | This is a mandatory parameter. Namespace of certificate. | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.certificate.rsa.fileName | This is a mandatory parameter. rsa certificate key file name. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp.cer |
| service.ssl.certificate.ecdsa.fileName | This is a mandatory parameter. ecdsa certificate key file name. | Data Type: String<br>Range: NA<br>Default Value:<br>ssl_ecdsa_certificate.crt |
| service.ssl.caBundle.k8SecretName | This is a mandatory parameter. Name of the caBundle secret. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.caBundle.k8NameSpace | This is a mandatory parameter. Namespace of private. | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.caBundle.fileName | This is a mandatory parameter. rsa private key file name. | Data Type: String<br>Range: NA<br>Default Value:<br>caroot.cer |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| service.ssl.keyStorePassword.k8SecretName | This is a mandatory parameter. Name of the privatekey secret. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.keyStorePassword.k8NameSpace | This is a mandatory parameter. Namespace of privatekey. | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.keyStorePassword.fileName | This is a mandatory parameter. File name that has password for keyStore. | Data Type: String<br>Range: NA<br>Default Value:<br>key.txt |
| service.ssl.trustStorePassword.k8SecretName | This is a mandatory parameter. Name of the privatekey secret. | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.trustStorePassword.k8NameSpace | This is a mandatory parameter. Namespace of privatekey. | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.trustStorePassword.fileName | This is a mandatory parameter. File name that has password for trustStore. | Data Type: String<br>Range: NA<br>Default Value:<br>trust.txt |
| service.ssl.initialAlgorithm | This is a mandatory parameter. Algorithm based on the certificate. | Data Type: String<br>Range: NA<br>Default Value:<br>RS256 |
| service.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to plmn-igw specific Service. | Data Type: String<br>Range: NA<br>Default Value: { } |
| service.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to plmn-igw specific Services. | Data Type: String<br>Range: NA<br>Default Value: { } |
| deployment.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to plmn-igw specific deployment. | Data Type: String<br>Range: NA<br>Default Value: { } |
| deployment.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to plmn-igw specific deployment. | Data Type: String<br>Range: NA<br>Default Value:<br>{ } |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| ports.containerPort | This is an optional parameter. ContainerPort represents a network port in a single container. | Data Type: Integer<br>Range: NA<br>Default Value:<br>8081 |
| ports.containersslPort | This is an optional parameter. Ssl port of the container. | Data Type: Integer<br>Range: NA<br>Default Value:<br>8443 |
| ports.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value:<br>9094 |
| log.level.root | This is an optional parameter. Log level for root logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.ingress | This is an optional parameter. Log level for ingress logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.oauth | This is an optional parameter. Log level for oauth logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.updateContainer | This is an optional parameter. log.level.updateContainer. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.cncc.root | This is an optional parameter.<br>Log level for cncc logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.cncc.audit | This is an optional parameter.<br>Log level for cncc logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.cncc.security | This is an optional parameter. Log level for cncc logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>efault Value: ERROR |
| log.level.cncc.loggingFilters | This is an optional parameter.<br>Log level filters for cncc logs. | Data Type: String<br>Range: NA<br>Default Value: [ ] |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `log.level.cncc.loggingMasks` | This is an optional parameter.<br>Logging mask filters for cncc logs. | Data Type: String<br>Range: NA<br>Default Value: [ ] |
| `log.traceIdGenerationEnabled` | This is an optional parameter. TraceId Generation is Enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value:<br>True |
| `resources.limits.cpu` | This is an optional parameter. CPU Limit. | Data Type: Integer<br>Range: NA<br>Default Value: 5 |
| `resources.limits.initServiceCpu` | This is an optional parameter. Init Container CPU Limit. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `resources.limits.updateServiceCpu` | This is an optional parameter. Update Container CPU Limit. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `resources.limits.memory` | This is an optional parameter. Memory Limit. | Data Type: String<br>Range: NA<br>Default Value: 5Gi |
| `resources.limits.updateServiceMemory` | This is an optional parameter. Update Container Memory Limit. | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.limits.initServiceMemory` | This is an optional parameter. int Container Memory Limit. | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| `resources.requests.cpu` | This is an optional parameter. CPU for requests. | Data Type: Integer<br>Range: NA<br>Default Value: 5 |
| `resources.requests.initServiceCpu` | This is an optional parameter. Init Container CPU for requests. | Data Type: Float<br>Range: NA<br>Default Value:1 |
| `resources.requests.updateServiceCpu` | This is an optional parameter. Update Container CPU for requests. | D<br>Data Type: Float<br>Range: NA<br>Default Value:<br>1 |
| `resources.requests.memory` | This is an optional parameter. Memory for requests. | Data Type: String<br>Range: NA<br>Default Value:<br>5Gi |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `resources.requests.updateServiceMemory` | This is an optional parameter. Update Container Memory for requests. | Data Type: String<br>Range: NA<br>Default Value:<br>1Gi |
| `resources.requests.initServiceMemory` | This is an optional parameter. Init Container Memory for requests. | Data Type: String<br>Range: NA<br>Default Value:<br>1Gi |
| `resources.target.averageCpuUtil` | This is an optional parameter.<br>Average CPU Utilisation. | Data Type: Integer<br>Range: NA<br>Default Value:<br>70 |
| `maxAvailable` | This is an optional parameter. Number of Pods must always be available, even during a disruption. | Data Type: Integer<br>Range: NA<br>Default Value:<br>25% |
| `minReplicas` | This is an optional parameter. Min replicas to scale to maintain an average CPU utilization. | Data Type: Integer<br>Range: NA<br>Default Value:<br>10 |
| `maxReplicas` | This is an optional parameter. Max replicas to scale to maintain an average CPU utilization. | Data Type: Integer<br>Range: NA<br>Default Value:<br>10 |
| `routesConfig[0].id` | This is a mandatory parameter.<br>It represents the id of the route. | Data Type: String<br>Range: NA<br>Default Value: cn32f |
| `routesConfig[0].uri` | This is a mandatory parameter.<br>Service name of the internal microservice of this NF.<br>Note: Provide the actual port number of cn32f, if the user has modified the port. | Data Type: String<br>Range: NA<br>Default Value:<br>http://{{ .Release.Name }}-cn32f-svc:9090/ |
| `routesConfig[0].path` | This is a mandatory parameter.<br>Provide the path to be matched. | Data Type: String<br>Range: NA<br>Default Value: /** |
| `routesConfig[0].order` | This is a mandatory parameter.<br>Provide the order of the execution of this route. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| `routesConfig[0].metadata.requestTimeout` | This is a Optional parameter.<br>requestTimeout is used to set timeout at route level. Value should be in milliseconds. | Data Type: Integer<br>Range: NA<br>Default Value: 2100 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].metadata.requiredTime | This is a Optional parameter.<br>requiredTime is minimum time below which request will be rejected if isSbiTimerEnabled is true. Value should be in milliseconds. | Data Type: Integer<br>Range: NA<br>Default Value: 3000 |
| routesConfig[0].metadata.xfccHeaderValidation.validationEnabled | This is a Optional parameter.<br>This is used to provide an option to enable/not enable route level xfccHeaderValidation. It overrides global configuration for xfccHeaderValidation.enabled. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| routesConfig[0].metadata.svcName | This is a Optional parameter.<br>The following parameter is configurable per route in route-metadata is used to track Overload Control data. If this parameter is not configured in route metadata then svc name from routesConfig.uri field is used as the required key to track Overload Control data.<br>The value of "svcName" attribute denotes the back-end service tag to be used as the required key (configurable per route) to track Overload Control data instead of using back-end service name from routesConfig[0].uri as the required key. | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.addRequestHeader[0].name | This is a Optional parameter.<br>This field is used for adding a request header at route level. Additional header can be configured by adding a new element in the next line and so on. | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.addRequestHeader[0].value | This is a Optional parameter.<br>value of the header to be added. | Data Type: String<br>Range: NA<br>Default Value: |
| routesConfig[0].filters.methodRateLimiting[0].method | specify the list of methods u have to rate limit.<br>Method based route limiting is applied only for the methods that are configured in each route to be rate limited. | Data Type: String<br>Range: NA<br>Default Value: POST |
| routesConfig[0].filters.methodRateLimiting[0].burstCapacity | The maximum number of token the bucket can hold. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].filters.methodRateLimiting[0].refillRate | The number of tokens that are added to the bucket during a refill N tokens are added to the bucket every M seconds. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| routesConfig[0].filters.methodRateLimiting[0].duration | The amount of time between the refills. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| routesConfig[0].removeRequestHeader[0].name | This is a Optional parameter.<br>This field is used for removing a request header at route level. Additional header can be configured by adding a new element in the next line and so on. | Data Type:<br>Range: NA<br>Default Value:<br>myheader1<br>myheader3 |
| routesConfig[0].removeResponseHeader[0].name | This is a Optional parameter.<br>Below field is used for removing a response header at route level. Additional header can be configured by adding a new element in the next line and so on. | Data Type:<br>Range: NA<br>Default Value:<br>myresponseheader1<br>myresponseheader3<br>error-reason |
| jaegerTracingEnabled | This is an optional parameter. Enable jaeger tracing. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| openTracing.jaeger.udpSender.host | This is an optional parameter. Jaeger Host | Data Type: String<br>Range: NA<br>Default Value:<br>occne-tracer-jaeger-agent.occne-infra |
| openTracing.jaeger.udpSender.port | This is an optional parameter. Jaeger Port. | Data Type: Integer<br>Range: NA<br>Default Value:<br>6831 |
| openTracing.jaeger.probabilisticSampler | This is an optional parameter. Trace capture in percentage. | Data Type: Float<br>Range: NA<br>Default Value:<br>0.5 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| initssl | This is an optional parameter.<br>Enabling it generates key and trust store for https support. | Data Type: Boolean<br>Range: True or False<br>Default Value: True<br>**Note:**<br>• The default value will be true, if the user wants to deploy PLMN Ingress Gateway in HTTPs mode only.<br>• The default value will be false, if the user wants to deploy the PLMN Ingress Gateway only in HTTP mode. |
| enableIncomingHttp | This is an optional parameter.<br>Enabling it for incoming http request. | Data Type: Boolean<br>Range: True or False<br>Default Value: true<br>**Note:**<br>• The default value will be true, if the user wants to enable incoming request over HTTP mode.<br>• The default value will be false, if the user wants to enable incoming request over HTTPs mode only. |
| enableIncomingHttps | This is an optional parameter.<br>Enabling it for incoming https request. | Data Type: Boolean<br>Range: True or False<br>Default Value: True<br>**Note:**<br>• The default value will be true, if the user wants to enable incoming request over HTTPs mode only.<br>• The default value will be false, if the user wants to enable incoming request over HTTP mode.<br>• For ASM mode, this value is set to false. |
| enableOutgoingHttps | This is an optional parameter.<br>Enabling it for outgoing https request. | Data Type: Boolean<br>Range: True or False<br>Default Value: False<br>**Note:**<br>• For PLMN Ingress Gateway, this value must be set to false always.<br>• For ASM mode, this value is set to false. |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| needClientAuth | This is an optional parameter.<br>This must be true if client certificate identity is required in the header x-custom-ingress-client-identity. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| sbiPriorityHeaderName | This is an optional parameter.<br>This parameters defines the header name which will contain the SBI Priority value. | Data Type: String<br>Range: NA<br>Default Value: 3gpp-sbi-message-priority |
| dnsRefreshDelay | This is an optional parameter.<br>Dns Refresh Delay in milli-seconds. | Data Type: Integer<br>Range: NA<br>Default Value: 120000 |
| rateLimiting.enabled | This is an optional parameter. This parameter enables Rate Limiting on Ingress Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: false |
| rssRateLimiter.enabled | This is an optional parameter.<br>This parameter enables Ingress Rate Limiting per Remote SEPP Set on Ingress Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: false |
| globalIngressRateLimiting.enabled | This is an optional parameter.<br>This parameter enables Global Rate Limiting on Ingress Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: false |
| globalIngressRateLimiting.duration | This is a mandatory parameter(if globalIngressRateLimiting is enabled true)Iterations of time duration(in seconds) for which bucketCapacity and refillRate are reset. | Data Type: Integer<br>Range: NA<br>Default Value:<br>1 |
| globalIngressRateLimiting.burstCapacity | This is a mandatory parameter. (if globalIngressRateLimiting is enabled true)Holds maximum number of tokens in the bucket for the given duration. | Data Type: Integer<br>Range: NA<br>Default Value:<br>7500 |
| globalIngressRateLimiting.refillRate | This is a mandatory parameter (if globalIngressRateLimiting is enabled true)<br>Number of tokens to be added to the bucket for the given duration<br>Recommended to have refillRate equal to burstCapacity. | Data Type: Integer<br>Range: NA<br>Default Value:<br>7500 |
| errorCodeOnRateLimit | This is a conditional parameter (if globalIngressRateLimiting is enabled true)<br>Configurable error code returned when ratelimit is reached.<br>Populated in ProblemDetails response in ProblemDetails.status section. | Data Type: Integer<br>Range: NA<br>Default Value:<br>429 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| gracefulShutdown.gracePeriod | This is an optional parameter.<br>Grace period to wait for active requests to be executed.<br>If there are no active requests then this period is neglected.<br># 's' in case of seconds and 'm' in case of minutes. | Data Type: String<br>Range: NA<br>Default Value: 1m |
| gracefulShutdown.defaultErrorCode | This is a optional parameter<br>Default error code returned at the time of Graceful shut down. | Data Type: Integer<br>Range: NA<br>Default Value: 500 |
| gracefulShutdown.errorDescription | This is an optional parameter.<br>Graceful shut down Error description. | Data Type: String<br>Range: NA<br>Default Value: "" |
| gracefulShutdown.errorCause | This is an optional parameter.<br>Graceful shut down error cause. | Data Type: String<br>Range: NA<br>Default Value: "" |
| gracefulShutdown.errorTitle | This is an optional parameter.<br>Graceful shut down error title. | Data Type: String<br>Range: NA<br>Default Value: "" |
| gracefulShutdown.retryAfter | This is an optional parameter.<br>determines the value in seconds per particular date after which the service should be retried post graceful shutdown. | Data Type: String<br>Range: NA<br>Default Value: "" |
| gracefulShutdown.redirectUrl | This is an optional parameter.<br>redirection URL for validation failure due to graceful shutdown. | Data Type: String<br>Range: NA<br>Default Value: "" |
| cfgServer.enabled | This is an optional parameter.<br>Config server switch. For the usage of Policy teams. For other NF's this has to be left false. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cfgClient.enabled | This is an optional parameter.<br>flag to enable config client. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| dnsSrv.host | This is an optional parameter.<br>DNS SRV Host name. | Data Type: String<br>Range: NA<br>Default Value: localhost |
| dnsSrv.port | This is an optional parameter.<br>DNS SRV port number. | Data Type: Integer<br>Range: NA<br>Default Value: 8004 |
| dnsSrv.scheme | This is an optional parameter.<br>DNS SRV scheme name. | Data Type:<br>Range: NA<br>Default Value: |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| nettyIdleTimeout | This is an optional parameter.<br>Netty Idle Timeout in milliseconds. | Data Type: Integer<br>Range: NA<br>Default Value: 120000000 #(ms) |
| nfFqdn | This is a mandatory parameter.<br>NF FQDN | Data Type: String<br>Range: NA<br>Default Value: sepp2.inter.oracle.com |
| messageCopy.enabled | This is an optional parameter. This parameter enables or disables the Message feed feature at the Ingress Gateway. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.copyPayload | This is an optional parameter. This parameter specifies whether to copy the message payload in the feed towards Data Director or not.<br>true: the complete payload message is copied.<br>false: Only the header information is copied. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.topicName | This is an optional parameter. Name of the topic to which Ingress Gateway send the payloads. | Data Type: StringRange: NADefault Value: message.copy |
| messageCopy.ackRequired | This is a mandatory parameter. This parameter specifies if we wait for any acknowledgement from DD. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.retryOnFailure | This is a mandatory parameter. This parameter specifies how many times SEPP should retry if message was not sent to DD successfully. | Data Type: Integer<br>Range: NA<br>Default Value:<br>0 |
| messageCopy.threadPoolConfigurations.coreSize | This is an optional parameter. core Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value:<br>8 |
| messageCopy.threadPoolConfigurations.maxSize | This is an optional parameter. max Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value:<br>8 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| messageCopy.threadPoolConfigurations.queueCapacity | This is an optional parameter. queue capacity for thread pool configuration message feed thread<br>For performance enhancement, set the value as 3000. | Data Type: Integer<br>Range: NA<br>Default Value:<br>1000 |
| messageCopy.security.enabled | This is a mandatory parameter. Security mode enabled for message feed feature. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.security.protocol | This is a conditional parameter.<br>It is used for message feed feature when security is enabled between SEPP and Gateway. | Data Type: String<br>Range: SASL_SSL or SSL<br>Default Value: SASL_SSL |
| messageCopy.security.tlsVersion | This is a mandatory parameter. TLS version details. | Data Type: String<br>Range: TLSv1.2, TLSv1.3<br>Default Value: TLSv1.3 |
| kafka.bootstrapAddress | This is an conditional parameter. List of comma- separated Kafka Nodes (to which messages should be copied if messageCopy feature is enabled). | Data Type: String<br>Range: NA<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| messageCopy.security.saslConfiguration.username | This is a mandatory parameter. username for DD<br>Refer to DD guide for more details. | Data Type: String<br>Range: NA<br>Default Value:<br>test |
| messageCopy.security.saslConfiguration.password.k8SecretName | This is a mandatory parameter. Secret name for gateway on which feature enabled. | Data Type: String<br>Range: ocsepp-plmn-secret for PLMN Gateways and ocsepp-n32-secret for N32 Gateways<br>Default Value: message-copy-secret |
| messageCopy.security.saslConfiguration.password.k8NameSpace | This is a mandatory parameter. Namespace where DD deployed<br>Please refer to DD guide for more details. | Data Type: String<br>Range: NA<br>Default Value:<br>ocingress |
| messageCopy.security.saslConfiguration.password.fileName | This is a mandatory parameter. File used to create DD secrets<br>Please refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value:<br>password.txt |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| kafka.bootstrap-servers | This is an conditional parameter. List of comma-separated DD Nodes IP address<br>The port will change to 9092 if security is disabled | Data Type: String<br>Range: NA<br>Default Value:<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| egressRateLimiter.enabled | This is an optional parameter.<br>This parameter is used to enable or disable the egress rate limiting per egress rate limiting list on Ingress Gateway | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| clientDisabledExtension | This is an optional parameter.<br>Disables the extension sent by messages originated by clients (ClientHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: ec_point_formats |
| serverDisabledExtension | This is an optional parameter.<br>Disables the extension sent by messages originated by servers (ServerHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| tlsNamedGroups | This is an optional parameter.<br>Provides a list of values sent in the supported_groups extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| clientSignatureSchemes | This is an optional parameter.<br>Provides a list of values sent in the signature_algorithms extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| service.ssl.tlsVersion | This is a mandatory parameter.<br>Indicates the TLS version. | **Data Type**: String<br>**Range**:<br>• TLSv1.2 , TLSv1.3<br>• TLSv1.2<br>• TLSv1.3<br>**Default Value**: TLSv1.2, TLSv1.3 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| allowedCipherSuites | This is an optional parameter.<br>Indicates allowed Ciphers. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |
| cipherSuites | This is an optional parameter.<br>Indicates supported cipher suites. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |
| keybasedKafkaProducer | This is a mandatory parameter.<br>This parameter when set to true, enables the functionality of message copy of same transaction into same Kafka partition. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `podSecurityContext.runAsNonRoot` | This is a mandatory parameter.<br>Prevents pod from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `podSecurityContext.runAsUser` | This is a mandatory parameter.<br>Specifies that all processes in pod must run with the provided user ID. | Data Type: Integer<br>Default Value: 10001 |
| `securityContext.enable` | This is a mandatory parameter.<br>Enables security context for containers. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `containerSecurityContext.readOnlyRootFilesystem` | This is a mandatory parameter.<br>Mounts the mediation container's root filesystem as read-only. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `containerSecurityContext.allowPrivilegeEscalation` | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the `no_new_privs` parameter gets configured on the container process. `allowPrivilegeEscalation` is always set to true when the container:<br>• is run as privileged<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `containerSecurityContext.runAsNonRoot` | This is a mandatory parameter.<br>Prevents containers from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `containerSecurityContext.privileged` | This is a mandatory parameter.<br>Provides containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `containerSecurityContext.runAsUser` | This is a mandatory parameter.<br>Specifies that for any container in the pod, all processes must run with the provided user ID. | Data Type: Integer<br>Range: Valid IDs for security context for user<br>Default Value: 10001 |
| `containerSecurityContext.capabilities.drop` | This is a mandatory parameter.<br>Manages Linux capabilities for containers. Using Linux capabilities, you can grant certain privileges to a process without granting all the privileges of the root user. | Data Type: List of strings<br>Range: Valid Linux capabilities<br>Default Value: -all |
| `enablePodSecurityContext` | This is a mandatory parameter.<br>Enables security context for pod. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| deploymentMode | This is a mandatory parameter.<br>This parameter defines the deployment mode for SEPP. That is, Single Stack or Dual Stack. | Data Type: String<br>Range: IPv4, IPv6, IPv6_IPv4, and IPv4_IPv6.<br>Default Value:<br>In single stack mode, Default value: IPv4<br>In dual stack mode, Default value: IPv6_IPv4 (IPv6 preferred)<br>Roaming Hub:<br>Default value : IPv4 (do not change). |
| global.lciHeaderConfig.enabled | This is an optional parameter.<br>If this parameter is set to true, LCI headers reporting will be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| global.lciHeaderConfig.loadThreshold | This is an optional parameter.<br>This parameter defines the load threshold configuration, if the current load level is beyond previously computed load level plus loadThreshold, LCI headers are reported again. | Data Type: Integer<br>Range: NA<br>Default Value: 40 |
| global.lciHeaderConfig.localLciHeaderValidity | This is an optional parameter.<br>This parameter defines the validity period of LCI headers reported to consumer NF. The LCI headers are reported again if the headers reported previously expire. | Data Type: Integer<br>Range: NA<br>Default Value: 10000 (milliseconds) |
| global.ociHeaderConfig.enabled | This is an optional parameter.<br>If this parameter is set to true, OCI headers reporting will be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| global.ociHeaderConfig.validityPeriod | This is an optional parameter.<br>Validity period of OCI headers reported to consumer NF. The OCI headers are reported again if the headers reported previously expire. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 (milliseconds) |
| global.ociHeaderConfig.overloadConfigRange.minor | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the range to identify minor overload condition. | Data Type: Integer<br>Range: 0 to 100<br>Default Value: [60-70] |
| global.ociHeaderConfig.overloadConfigRange.major | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the range to identify major overload condition. | Data Type: Integer<br>Range: 0 to 100<br>Default Value: [70-80] |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| global.ociHeaderConfig.overloadConfigRange.critical | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the range to identify critical overload condition. | Data Type: Integer<br>Range: 0 to 100<br>Default Value: [80-100] |
| global.ociHeaderConfig.reductionMetrics.minor | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the reduction metric to be reported for minor overload condition. | Data Type: Integer<br>Range: 1 to 9<br>Default Value: 5 |
| global.ociHeaderConfig.reductionMetrics.major | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the reduction metric to be reported for major overload condition. | Data Type: Integer<br>Range: 5 to 15<br>Default Value: 10 |
| global.ociHeaderConfig.reductionMetrics.critical | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the reduction metric to be reported for critical overload condition. | Data Type: Integer<br>Range: 10 to 50<br>Default Value: 30 |
| global.nfInstanceId | This is a mandatory parameter, if the feature is enabled.<br>NF Instance Id of producer NF. | Data Type: String<br>Range: NA<br>Default Value: 6faf1bbc-6e4a-4454-a507-a14ef8e1bc11 |
| global.nfType | This is a mandatory parameter, if the feature is enabled.<br>NF type of producer NF. | Data Type: String<br>Range: NA<br>Default Value: NA |
| global.nfFqdn | This is a mandatory parameter.<br>This is the NF FQDN for SEPP | Data Type: String<br>Range: NA<br>Default Value: NA |
| global.svcToSvcInstanceIdMapping.svcName | This is an optional parameter.<br>This parameter defines the back-end service name which should match producerSvcIdHeader value and perf-info reported service name for LCI or OCI headers reporting. | Data Type: String<br>Range: NA<br>Default Value: nf-registration |
| global.svcToSvcInstanceIdMapping.serviceInstanceId | This is an optional parameter.<br>This parameter defines the Back-end service instance id to be included in LCI / OCI headers. | Data Type: String<br>Range: NA<br>Default Value: fe7d992b-0541-4c7d-ab84-c6d70b1b01b1 |
| global.perfInfoConfig.pollingInterval | This is an optional parameter.<br>This parameter defines the Configurable interval at which load infromation is polled from perf-info service at Gateway. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.perfInfoConfig.serviceName` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the Perf-Info service name. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.perfInfoConfig.host` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the Perf-Info Host IP. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.perfInfoConfig.PORT` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the Perf-Info port. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `global.perfInfoConfig.perfInfoRequestMap` | This is a mandatory parameter, if the feature is enabled.<br>This parameter defines the Perf-Info service request endpoint. | Data Type: String<br>Range: NA<br>Default Value: NA |
| `tlsVersionSupportForKubeApiServer.enabled` | This is an optional parameter.<br>This parameter enables or disables TLS 1.3 support for establishing communication between Gateway Services and Kubernetes API server (Kube\u0002Api-Server). If this parameter is enabled, support for establishing communication with Kube\u0002Api-Server is provided through TLS 1.3, along with TLS 1.2 as configured in `kubeApiServerTlsVersion`. If this parameter is disabled, support for communication with Kube-Api-Server is provided only through TLS 1.2. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion` | This is a mandatory parameter. This parameter defines the supported TLS versions used by Gateway Services to communicate with the Kube-API-Server. | Data Type: String<br>Range: TLS 1.2 and TLS 1.3<br>Default Value: TLS 1.3 |
| `tlsVersionSupportForKubeApiServer.cipherSuites` | This is a mandatory parameter. This parameter indicates the Cipher suites that are compliant with the configured `tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion` | Data Type: String<br>Range: NA<br>Default Value:<br>• TLS_AES_256_GCM_SHA384<br>• TLS_AES_128_GCM_SHA256<br>• TLS_CH ACHA20 _POLY1305_SHA 256 |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is an optional parameter. This parameter indicates the list of all the secrets that are used for all the features of Gateway Services. These secrets are volume mounted during the pod deployment. | Data Type: String<br>Range: NA<br>Default Value:<br>• ocegress -secret1<br>• ocegress -secret2<br>• ocegress -secret3 |
| `overloadControlLocalDiscardEnabled` | This is an optional parameter. This parameter enables each pod independently to discard requests based on its local load. This parameter can have the following values:<br>• true: No coherence-based token reservation is required.<br>• false: Coherence is used for token reservations across pods. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |
| `overloadControlLocalDiscardEnabled` | This is an optional parameter. This parameter enables each pod independently to discard requests based on its local load. This parameter can have the following values:<br>• true: No coherence-based token reservation is required.<br>• false: Coherence is used for token reservations across pods. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |
| `startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>Range: NA |
| `readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `readinessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `readinessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `readinessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `readinessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `livenessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `livenessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| `livenessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-9 (Cont.) plmn-ingress-gateway**

| Name | Description | Details |
|---|---|---|
| `livenessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `livenessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `stripLeadingSpacesRequest` | This is an optional parameter.<br>This parameter removes leading whitespace, if any, from inbound HTTP/2 request headers at Ingress Gateway. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `plmn-ingress-gateway.isSbiTimerEnabled` | This is an optional parameter.<br>This flag is used to enable or disable SBI Timer feature for calculating request timeout at plmn-ingress-gateway. | **Data Type**: boolean<br>**Default Value**: false<br>**Range**: NA |
| `plmn-ingress-gateway.sbiTimerTimezone` | This is an optional parameter.<br>This flag is used to configure Timezone mode for SBI timer logic at plmn-ingress-gateway. | **Data Type**: String<br>**Default Value**: GMT<br>**Range**: GMT,ANY |

## 3.1.9 n32-egress-gateway

This section includes information about the n32-egress-gateway parameters of the SEPP.

**Table 3-10 n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `cmName` | This is an optional parameter.<br>Name of the configmap. | Data Type: String<br>Range: NA<br>Default Value: egressgateway |
| `istioSidecarQuitUrl` | This is a mandatory parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/quitquitquit |
| `istioSidecarReadyUrl` | This is a mandatory parameter.<br>The sidecar (istio ready url)when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/ready |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `global.k8sResources.pdb.supportedVersions` | Kubernetes resource PDB supported version. | Data Type: String<br>Range: NA<br>Default Value: policy/v1 |
| `global.logStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.crictlStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.ephemeralStorageLimit` | This is an optional parameter.<br>Ephemeral storage Limit. | Data Type: Integer<br>Range: NA<br>Default Value: 1024 |
| `extraContainers` | This is a mandatory parameter.<br>The attribute is used to control the usage of extra container(DEBUG tool).<br>Allowed Values: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>If assigned with ENABLED or USE_GLOBAL_VALUE, then ensure "extraContainers Tpl" yaml chunk is defined at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: String<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| `prefix` | This is a optional parameter. Support for multiple egress instances. When set to some value then that value is used in the name of resources along with release name so that there is any clash between the instances. When the value of this flag is set to ' ' then the resources are prepended with release name only.When set to some value then that value will be used in the names of resources along with release name. | Data Type: String<br>Range: NA<br>Default Value: 'n32' |
| `sepp.removeUnusedProxyAfter` | This is an optional parameter.<br>Time in minutes after which unsed proxy beans are removed. If this parameter is not added, then default value is picked up. | Data Type: Integer<br>Range: NA<br>Default Value: 30 |
| `sepp.forwardProxy` | This is an optional parameter.<br>Flag to enable sepp forward proxy. | Data Type: Boolean<br>Range: NA<br>Default Value: true |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| sepp.tlsConnectionMode | Set true only if sepp.forwardProxy is true,otherwise it wont have effect. For ASM this will be set to false. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| serviceEgressGateway.port | This is a mandatory parameter.<br>Egress Gateway port. | Data Type: Integer<br>Range: NA<br>Default Value: 8080 |
| serviceEgressGateway.sslPort | This is a mandatory parameter.<br>SSL Port. | Data Type: Integer<br>Range: NA<br>Default Value: 8442 |
| serviceEgressGateway.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 9094 |
| deploymentEgressGateway.image | This is an optional parameter.<br>Image name of Ingress gateway. | Data Type: String<br>Range: NA<br>Default Value: ocegress_gateway |
| deploymentEgressGateway.imageTag | This is an optional parameter.<br>Image Tag name of ingress gateway. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |
| deploymentEgressGateway.pullPolicy | This is an optional parameter.<br>Image Pull Policy. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| initContainersImage.name | This is an optional parameter.<br>Image name of initContainer. | Data Type: String<br>Range: NA<br>Default Value: configurationinit |
| initContainersImage.tag | This is an optional parameter.<br>Image tag name of initContainer. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |
| initContainersImage.pullPolicy | This is an optional parameter.<br>Image Pull Policy. | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| updateContainersImage.name | This is an optional parameter.<br>Image name of updateContainer | Data Type: String<br>Range: NADefault Value: configurationupdate |
| updateContainersImage.tag | This is an optional parameter.<br>Image tag name of updateContainer | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| updateContainersImage.pullPolicy | This is an optional parameter.<br>Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| dbHookImage.name | This is an optional parameter.<br>Image name of dbHook | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| dbHookImage.tag | This is an optional parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |
| dbHookImage.pullPolicy | This is an optional parameter.<br>Pull Policy of Image | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| httpsTargetOnly | This is an optional parameter.<br>This is global parameter which will be taken into consideration if route (under routeConfig section) based httpsTargetOnly parameter is not available. true: Select SbiRouting instances for https list only false: Run existing logic as per provided scheme. Note: double quotes to be enclosed for values of httpsTargetOnly | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| httpRuriOnly | This is an optional parameter.<br>Global parameter is taken into consideration if route (under routeConfig section) based httpRuriOnly parameter is not available. true: Means change Scheme of RURI to http false: Keep scheme as is. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| sbiRouting.sbiRoutingDefaultScheme | This is an optional parameter.<br>Default scheme applicable when 3gpp-sbi-target apiroot header is missing | Data Type: String<br>Range: NA<br>Default Value: https |
| sbiRouting.sbiRerouteEnabled | This is an optional parameter.<br>Set this flag to true if re-routing to multiple SCP instances is to be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| log.level.root | This is an optional parameter.<br>Log level for root logs | Data Type: ENUM<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| log.level.egress | This is an optional parameter. Log level for ingress logs | Data Type: ENUM Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.oauth | This is an optional parameter. Log level for oauth logs | Data Type: ENUM Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.updateContainer | This is an optional parameter. Log level for update container logs | Data Type: ENUM Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| log.level.hook | This is an optional parameter.<br>Log level for hook | Data Type: ENUM Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| service.ssl.privateKey.k8SecretName | This is a mandatory parameter. Name of the privatekey secret | Data Type: StringRange: NADefault Value: ocsepp-n32-secret |
| service.ssl.privateKey.k8NameSpace | This is a mandatory parameter. Namespace of privatekey | Data Type: StringRange: NADefault Value: DEPLOYMENT_NAMESPACE |
| service.ssl.privateKey.rsa.fileName | This is a mandatory parameter. rsa private key file name | Data Type: StringRange: NADefault Value: rsa_private_key_pkcs1.pem |
| service.ssl.privateKey.ecdsa.fileName | This is a mandatory parameter. ecdsa private key file name | Data Type: StringRange: NADefault Value: ssl_ecdsa_private_key.pem |
| service.ssl.certificate.k8SecretName | This is a mandatory parameter. Name of the certificate secret | Data Type: StringRange: NADefault Value: ocsepp-n32-secret |
| service.ssl.certificate.k8NameSpace | This is a mandatory parameter. Namespace of certificate | Data Type: StringRange: NADefault Value: DEPLOYMENT_NAMESPACE |
| service.ssl.certificate.rsa.fileName | This is a mandatory parameter. rsa certificate key file name | Data Type: StringRange: NADefault Value: ocsepp.cer |
| service.ssl.certificate.ecdsa.fileName | This is a mandatory parameter. ecdsa certificate key file name | Data Type: StringRange: NADefault Value: ssl_ecdsa_certificate.crt |
| service.ssl.caBundle.k8SecretName | This is a mandatory parameter. Name of the caBundle secret | Data Type:String Range: NA<br>Default Value:ocsepp-n32-secret |
| service.ssl.caBundle.k8NameSpace | This is a mandatory parameter. Namespace of private | Data Type: StringRange: NADefault Value: DEPLOYMENT_NAMESPACE |
| service.ssl.caBundle.fileName | This is a mandatory parameter. rsa private key file name | Data Type: StringRange: NADefault Value: caroot.cer |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| service.ssl.keyStorePassword.k8SecretName | This is a mandatory parameter. Name of the privatekey secret | Data Type:StringRange: NADefault Value: ocsepp-n32-secret |
| service.ssl.keyStorePassword.k8NameSpace | This is a mandatory parameter. Namespace of privatekey | Data Type: StringRange: NADefault Value: DEPLOYMENT_NAMESPACE |
| service.ssl.keyStorePassword.fileName | This is a mandatory parameter. File name that has password for keyStore | Data Type: StringRange: NADefault Value: key.txt |
| service.ssl.trustStorePassword.k8SecretName | This is a mandatory parameter. Name of the privatekey secret | Data Type: StringRange: NADefault Value: ocsepp-n32-secret |
| service.ssl.trustStorePassword.k8NameSpace | This is a mandatory parameter. Namespace of privatekey | Data Type: StringRange: NADefault Value: DEPLOYMENT_NAMESPACE |
| service.ssl.trustStorePassword.fileName | This is a mandatory parameter. File name that has password for trustStore | Data Type: StringRange: NADefault Value: trust.txt |
| service.ssl.initialAlgorithm | This is a mandatory parameter. Algorithm based on the certificate | Data Type: StringRange: NADefault Value: RSA256 |
| service.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to n32-egw specific Service | Data Type: String<br>Range: NA<br>Default Value:{} |
| service.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to n32-egw specific Services | Data Type: String<br>Range: NA<br>Default Value:{} |
| deployment.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to n32-egw specific deployment | Data Type: String<br>Range: NA<br>Default Value:{} |
| deployment.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to n32-egw specific deployment | Data Type: String<br>Range: NA<br>Default Value:{} |
| deDupeResponseHeader | This is an optional parameter.<br>it is used for handling duplicate values in response headers.<br>Multiple values can be provided with space.<br># Ex: content-type nettylatency requestmethod, RETAIN_LAST | Data Type: String<br>Range: nettylatency, requestmethod, RETAIN_LAST<br>Default Value: content-type, RETAIN_LAST |
| commonCfgClient.enabled | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| commonCfgServer.configServerSvcName | This is a mandatory parameter if commonCfgClient. enabled is set to true<br>Service name of common configuration service to which the client tries to poll for configuration updates | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.host | This is an optional parameter. No (It is needed if commonCfgServer.configServerSvcName is not available)<br>Host name of Common configuration server to which client tries to poll for configuration updates. This value is picked up if commonCfgServer .configServer SvcName is not available | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.port | This is a mandatory parameter if commonCfgClient. enabled is set to true<br>Port of Common Configurationserver. | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| commonCfgServer.pollingInterval | This is a mandatory parameter if commonCfgClient. enabled is set to true<br>This is the interval between two subsequent polling requests from config client toserver | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| commonServiceName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>This is the common service name that is currently requesting for configuration updates from server | Data Type: string<br>Range: NA<br>Default Value: egw |
| enableSecondaryInstance | To enable secondary instance of config client enableSecondaryInstance must beset to true. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| ingressServiceName | IngressServiceName must be set with the value of commonServiceName present in ingress values.yaml. | Data Type: string<br>Range: NA<br>Default Value: igw |
| ingressReleaseVersion | IngressReleaseVersion must be same as version in Chart.yaml of IngressGateway. | Data Type: string<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `restoreBackupOnInstall` | This is an optional parameter.<br>This flag when enabled picks up the data from the backup table during installation of gateway | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `dbConfig.dbHost` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Hostname of Mysql in which the configuration must be stored | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| `dbConfig.dbPort` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Port of mysql | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |
| `dbConfig.configFile` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>File name for initial configuration that must be stored in the db | Data Type: String<br>Range: NA<br>Default Value: defaultconfig.yaml |
| `dbConfig.schemaFile` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>File name for json schema validation | Data Type: String<br>Range: NA<br>Default Value: defaultschema.json |
| `dbConfig.secretName` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Secret name from which the db name, db password and db user name is picked | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| `dbConfig.dbName` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Database name | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| `dbConfig.dbUNameLiteral` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Name of the Key configured for "DB Username" in Secret with following name: "<dbConfig.secretName>" | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| `dbConfig.dbPwdLiteral` | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Name of the Key configured for "DB Password" in Secret with following name: "<dbConfig.secretName>" | Data Type: String<br>Range: NA<br>Default Value: mysql-password |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| dbConfig.dbEngine | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| routesConfig[0].filterNameReqEntryargs.headers[0].headersList[0].defaultVal | This is an optional parameter<br>This parameter defines the default value for custom headers to be added in incoming request | Data Type: String<br>Range: NA<br>Default Value: script:shm-02,x-exit-new-req |
| routesConfig[0].filterNameReqEntry.args.headers[0].headersList[0].source | This is an optional parameter<br>This parameter defines the source for custom headers to be added | Data Type: String<br>Range: NA<br>Default Value: incomingReq |
| routesConfig[0].filterNameReqEntry.args.headers[0].headersList[0].sourceHeader | This is an optional parameter<br>This parameter defines the source header for custom headers to be added in incoming request | Data Type: String<br>Range: NA<br>Default Value: x-current-user |
| routesConfig[0].filterNameReqExit.name | This is an optional parameter<br>This parameter defines the custom header filter name in egress request | Data Type: String<br>Range: NA<br>Default Value: CustomReqHeaderExitFilter |
| routesConfig[0].filterNameReqExit.args.headers.methods | This is an optional parameter<br>This parameter defines the method in egress request for adding custom header filter | Data Type: String<br>Range: NA<br>Default Value: ALL |
| routesConfig[0].filterNameReqExit.args.headers.headersList[0].headerName | This is an optional parameter<br>This parameter defines the list of custom headers to be added in egress request | Data Type: String<br>Range: NA<br>Default Value: x-headeReq-2021 |
| routesConfig[0].filterNameReqExit.args.headers.headersList[0].defaultVal | This is an optional parameter<br>This parameter defines the default value for custom headers to be added in egress request | Data Type: Integer<br>Range: NA<br>Default Value: 0505 |
| routesConfig[0].filterNameReqExit.args.headers.headersList[0].source | This is an optional parameter<br>This parameter defines the source for custom headers to be added | Data Type: String<br>Range: NA<br>Default Value: incomingReq |
| routesConfig[0].filterNameReqExit.args.headers.headersList[0].sourceHeader | This is an optional parameter<br>This parameter defines the source header for custom headers to be added in egress request | Data Type: String<br>Range: NA<br>Default Value: x-current-user |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].filterNameResEntry.name | This is an optional parameter<br>This parameter defines the custom header filter name in incoming response | Data Type: String<br>Range: NA<br>Default Value: CustomResHeaderEntryFilter |
| routesConfig[0].filterNameResEntry.args.headers[0].methods | This is an optional parameter<br>This parameter defines the method in incoming response for adding custom header filter | Data Type: String<br>Range: NA<br>Default Value: ALL |
| routesConfig[0].filterNameResEntry.args.headers[0].headersList[0].headerName | This is an optional parameter<br>This parameter defines the list of custom headers to be added in incoming response | Data Type: String<br>Range: NA<br>Default Value: x-headeRes-3014 |
| routesConfig[0].filterNameResEntry.args.headers[0].headersList[0].defaultVal | This is an optional parameter<br>This parameter defines the default value for custom headers to be added in incoming response | Data Type: String<br>Range: NA<br>Default Value: pqr |
| routesConfig[0].filterNameResEntry.args.headers[0].headersList[0].source | This is an optional parameter<br>This parameter defines the source for custom headers to be added | Data Type: String<br>Range: NA<br>Default Value: incomingRes |
| routesConfig[0].filterNameResEntry.args.headers[0].headersList[0].sourceHeader | This is an optional parameter<br>This parameter defines the source header for custom headers to be added in incoming response | Data Type: String<br>Range: NA<br>Default Value: x-current-hooman |
| routesConfig[0].filterNameResExit.name | This is an optional parameter<br>This parameter defines the custom header filter name in egress response | Data Type: String<br>Range: NA<br>Default Value: CustomResHeaderExitFilter |
| routesConfig[0].filterNameResExit.args.headers.methods | This is an optional parameter<br>This parameter defines the method in egress response for adding custom header filter | Data Type: String<br>Range: NA<br>Default Value: ALL |
| routesConfig[0].filterNameResExit.args.headers.headersList[0].headerName | This is an optional parameter<br>This parameter defines the list of custom headers to be added in egress response | Data Type:<br>Range: NA<br>Default Value: x-headeRes-2021 |
| routesConfig[0].filterNameResExit.args.headers.headersList[0].defaultVal | This is an optional parameter<br>This parameter defines the default value for custom headers to be added in egress response | Data Type: Integer<br>Range: NA<br>Default Value: 0909 |
| routesConfig[0].filterNameResExit.args.headers.headersList[0].source | This is an optional parameter<br>This parameter defines the source for custom headers to be added | Data Type: String<br>Range: NA<br>Default Value: incomingRes |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].filterNameResExit.args.headersList[0].sourceHeader | This is an optional parameter<br>This parameter defines the source header for custom headers to be added in egress response | Data Type: String<br>Range: NA<br>Default Value: x-current-hooman |
| routesConfig[0].filterName1.name | This is a mandatory parameter if routesConfig[0].metadata.sbiRoutingEnabled is true<br>Provide filtername as "SBIRoutingFilter"<br>If FilterName1 is not provided then it would be considered as direct Egress Gateway path and configured accordingly during deployment. | Data Type: String<br>Range: NA<br>Default Value: SbiRouting |
| routesConfig[0].filterName1.args.peerSetIdentifier | This is a mandatory parameter if routesConfig[0].metadata.sbiRoutingEnabled is true<br>This flag maps to id of peerSetConfiguration | Data Type: String<br>Range: NA<br>Default Value: set0 |
| routesConfig[0].filterName1.args.customPeerSelectorEnabled | This is an optional parameter<br>This flag allows the user to send request to a particular instance directly when enabled according to "ocalternaterouteattempt" header | Data Type: BooleanRange: True or FalseDefault Value: false |
| routesConfig[0].filterName1.args.errorHandling.errorCriteriaSet | This is a mandatory parameter, if the NF wants to enable SBI Rerouting Feature.<br>This flag maps to the id of sbiRoutingErrorCriteriaSets configuration. | Data Type: String<br>Range: NA<br>Default Value: scp_direct2_criteria_1 |
| routesConfig[0].filterName1.args.errorHandling.actionSet | This is a mandatory parameter, if the NF wants to enable SBI Rerouting Feature.<br>This flag maps to the id of sbiRoutingErrorActionSets configuration | Data Type: String<br>Range: NA<br>Default Value: scp_direct2_action_1 |
| routesConfig[0].filterName1.args.errorHandling.priority | This is a mandatory parameter, if the NF wants to enable SBI Rerouting Feature.<br>This maps the priority of execution for sbiRoutingErrorCriteriaSets & sbiRoutingErrorActionSets mapping | Data Type: integer<br>Range: NA<br>Default Value: 1 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].removeRequestHeader[0].name | This is an optional parameter<br>This field is used for removing a request header at route level. Additional header can be configured by adding a new element in the next line and so on.<br>The value of "name" attribute denotes the name of the request header which is to be removed at route level. Add a new entry in next<br>line for every header to be removed. | Data Type: String<br>Range: NA<br>Default Value:<br>myheader1<br>myheader3 |
| routesConfig[0].removeResponseHeader[0]0.name | This is an optional parameter<br>This field is used for removing a responseheader at route level. Additional header can be configured by adding a new element in the next line and so on.<br>The value of "name" attribute denotes the name of the request header which is to be removed at route level. Add a new entry in next<br>line for every header to be removed. | Data Type: String<br>Range: NA<br>Default Value:<br>myresponseheader1<br>myresponseheader3 |
| dnsSrv.host | This is a mandatory parameter, if DnsSrv integration is required, else optional<br>Host of DNS Alternate Route Service | Data Type: String<br>Range: NA<br>Default Value: 10.75.225.67 |
| dnsSrv.alternateRouteSvcName | This is a mandatory parameter, if DnsSrv integration is required and Service Name is expected to be provided otherwise optional<br>Service name of Alternate Route Service.<br>If Service name is provided , then this parameter would be picked for integrating Egress Gateway with alternate route service. If IP or Fqdn is expected to be provided then update this parameter as blank and update above parameter accordingly.<br>If this parameter is populated with data then above parameter would be ignored. | Data Type: String<br>Range: NA<br>Default Value: alternate-route |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| dnsSrv.port | This is a mandatory parameter, if DnsSrv integration is required, else optional.<br>Port of DNS Alternate Route Service | Data Type: String<br>Range: NA<br>Default Value: 80 |
| dnsSrv.scheme | This is a mandatory parameter, if DnsSrv integration is required, else optional.<br>Scheme of request that need to be sent to alternate route service. By default it is http. Just gave configurable privilege for future. | Data Type: String<br>Range: NA<br>Default Value: http |
| dnsSrv.requestTimeout | This is a mandatory parameter, if DnsSrv integration is required, else optional.<br>Duration for Egress Gateway to Alternate Route Service DNS SRV request query execution. | Data Type: Integer<br>Range: NA<br>Default Value: 1000 ms |
| dnsSrv.connectTimeout | This is a mandatory parameter, if DnsSrv integration is required, else optional.<br>Duration for Egress Gateway to Alternate Route Service DNS SRV connection timeout. | Data Type: Integer<br>Range: NA<br>Default Value: 10000 ms |
| dnsSrv.fqdnSchemesForProbing | This is a mandatory parameter.<br>• Probing is executed as part of the container probe. An empty list indicates no probing.<br>• Probing sends or looks up requests to DNS SRV host for the configured FQDN and scheme.<br>• Probing is done sequentially for FQDN scheme combination, adjust container probe time based on the number of FQDNs. | Data Type: string<br>Range: NA<br>Default Value: [] |
| dnsSrv.backoffDelay | This is a mandatory parameter.<br>Indicates the wait time between retry attempts when DNS service discovery fails. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 ms |
| dnsSrv.errorCodeOnDNSResolutionFailure | This is a mandatory parameter, if DnsSrv integration is required, else optional.<br>Currently, this value cannot be modified. | Data Type: Integer<br>Range: NA<br>Default Value: 425 ms |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| dnsSrv.errorDescriptionOnDNSResolutionFailure | This is an optional parameter.<br>Error description for DNS resolution failure. Populated in ProblemDetails response in ProblemDetails.detail section.<br>Currently, this value cannot be modified. | Data Type: String<br>Range: NA<br>Default Value: "" |
| dnsSrv.errorTitleOnDNSResolutionFailure | This is an optional parameter.<br>Error title for DNS resolution failure. Populated in ProblemDetails response in ProblemDetails.title section.<br>Currently, this value cannot be modified. | Data Type: String<br>Range: NA<br>Default Value: "" |
| dnsSrv.errorCauseOnDNSResolutionFailure | This is an optional parameter.<br>Error cause for DNS resolution failure. Populated in ProblemDetails response in ProblemDetails.cause section.<br>Currently, this value cannot be modified. | Data Type: String<br>Range: NA<br>Default Value: "" |
| jaegerTracingEnabled | This is an optional parameter.<br>Enable jaeger tracing | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| openTracing.jaeger.udpSender.host | This is an optional parameter.<br>Jaeger Host | Data Type: String<br>Range: NA<br>Default Value: occne-tracer-jaeger-agent.occne-infra |
| openTracing.jaeger.udpSender.port | This is an optional parameter.<br>Jaeger Port | Data Type: Integer<br>Range: NA<br>Default Value: 6831 |
| openTracing.jaeger.probabilisticSampler | This is an optional parameter.<br>Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 |
| dnsRefreshDelay | This is an optional parameter.<br>Dns Refresh Delay in milli-seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10000 ms |
| resources.limits.cpu | This is an optional parameter.<br>CPU Limit | Data Type: Integer<br>Range: NA<br>Default Value: 5 |
| resources.limits.initServiceCpu | This is an optional parameter. Init Container CPU Limit | Data Type: Float<br>Range: NA<br>Default Value: 1 |
| resources.limits.updateServiceCpu | This is an optional parameter.<br>Update Container CPU Limit | Data Type: Float<br>Range: NA<br>Default Value: 1 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| resources.limits.memory | This is an optional parameter. Memory Limit | Data Type: String<br>Range: NA<br>Default Value: 5Gi |
| resources.limits.updateServiceMemory | This is an optional parameter. Update Container Memory Limit | Data Type:String<br>Range: NA<br>Default Value: 1Gi |
| resources.limits.initServiceMemory | This is an optional parameter. int Container Memory Limit | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| resources.requests.cpu | This is an optional parameter. CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value: 5 |
| resources.requests.initServiceCpu | This is an optional parameter. Init Container CPU for requests | Data Type: Float<br>Range: NA<br>Default Value: 1 |
| resources.requests.updateServiceCpu | This is an optional parameter. Update Container CPU for requests | Data Type:Float<br>Range: NA<br>Default Value: 1 |
| resources.requests.memory | This is an optional parameter. Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 5Gi |
| resources.requests.updateServiceMemory | This is an optional parameter. Update Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| resources.requests.initServiceMemory | This is an optional parameter. Init Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| resources.target.averageCpuUtil | This is an optional parameter. Resource Requirements(avg cpu utilisation) | Data Type: Integer<br>Range: NA<br>Default Value: 70 |
| minAvailable | This is an optional parameter. Number of Pods must always be available, even during a disruption | Data Type: Integer<br>Default Value: 1 |
| maxUnavailable | This is an optional parameter. Number of Pods that will be unavailable during a disruption | Data Type: Integer<br>Range: NA<br>Default Value: 25% |
| minReplicas | This is an optional parameter. Min replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| maxReplicas | This is an optional parameter. Max replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 10 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| connectionTimeout | This is an optional parameter.<br>Connection timeout in milliseconds | Data Type: Integer<br>Range: NA<br>Default Value: 60 |
| requestTimeout | This is an optional parameter.<br>Request Timeout in milli seconds | Data Type: Integer<br>Range: NA<br>Default Value: 1000 #ms |
| gracefulCloseDelay | This is an mandatory parameter.<br>gracefulCloseDelay value should be positive value greater than request Timeout and lesser than jettyIdleTimeout. If gracefulCloseDelay is set to 0 then default value of 30000 ms will be considered internally. | Data Type: Integer<br>Range: NA<br>Default Value: 1500 ms |
| gracefulShutdown.gracePeriod | This is an optional parameter.<br>Grace period to wait for active requests to be executed. If there are no active requests then this period is neglected. 's' in case of seconds and 'm' in<br>case of minutes | Data Type: String<br>Range: NA<br>Default Value: 1m |
| gracefulShutdown.defaultErrorCode | This is a optional parameter<br>Default error code returned at the time of Graceful shut down | Data Type: Integer<br>Range: NA<br>Default Value: 500 |
| gracefulShutdown.errorDescription | This is an optional parameter.<br>Graceful shut down Error description | Data Type: String<br>Range: NA<br>Default Value: Shutdown in progress |
| gracefulShutdown.errorTitle | This is an optional parameter.<br>Graceful shut down error title | Data Type: String<br>Range: NA<br>Default Value: Graceful shutdown |
| gracefulShutdown.errorCause | This is an optional parameter.<br>Graceful shut down error cause | Data Type: String<br>Range: NA<br>Default Value: Shutdown |
| egressRateLimiting.enabled | This is a mandatory parameter. This parameter enables Global Rate Limiting on Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: false |
| egressRateLimiting.duration | This is a mandatory parameter. This parameter defines theduration to decide how frequently to refill(in seconds) | Data Type:Integer<br>Range: NA<br>Default Value: 1 |
| egressRateLimiting.bucketCapacity | This is a mandatory parameter. This parameter defines the Bucket size in which capacity to handle traffic burst is defined. | Data Type: Integer<br>Range: NA<br>Default Value: 7500 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| egressRateLimiting.refillRate | This is a mandatory parameter. This parameter defines the number of tokens to be added to refill the bucket | Data Type: Integer<br>Range: NA<br>Default Value: 7500 |
| egressRateLimiting.errorCodeOnRateLimit | This is a mandatory parameter. This parameter defines the configurable error code to be returned | Data Type: Integer<br>Range: NA<br>Default Value: 429 |
| nettyIdleTimeout | This is an optional parameter.<br>Netty Idle Timeout in milli seconds | Data Type: Integer<br>Range: NA<br>Default Value: 120000000 |
| nfFqdn | This is a mandatory parameter.<br>NF FQDN | Data Type:Integer<br>Range: NA<br>Default Value: sepp2.inter.oracle.com |
| messageCopy.enabled | This is an optional parameter. This parameter enables or disables the Message feed feature at the Ingress Gateway. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.copyPayload | This is an optional parameter. This parameter specifies whether to copy the message payload in the feed towards Data Director or not.<br>true: the complete payload message is copied.<br>false: Only the header information is copied. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.topicName | This is an optional parameter. Name of the topic to which Ingress Gateway send the payloads. | Data Type:String<br>Range: NA<br>Default Value:message.copy |
| messageCopy.ackRequired | This is a mandatory parameter. This parameter specifies if we wait for any acknowledgement from DD. | Data Type: Boolean<br>Range: True or False<br>Default Value:False |
| messageCopy.retryOnFailure | This is a mandatory parameter. This parameter specifies how many times SEPP should retry if message was not sent to DD successfully. | Data Type: Integer<br>Range: NA<br>Default Value: 0 |
| messageCopy.threadPoolConfigurations.coreSize | This is an optional parameter. core Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value: 8 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| messageCopy.threadPoolConfigurations.maxSize | This is an optional parameter. max Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| messageCopy.threadPoolConfigurations.queueCapacity | This is an optional parameter. queue capacity for thread pool configuration message feed thread<br>For performance enhancement, set the value as 3000. | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |
| messageCopy.security.enabled | This is a mandatory parameter. Security mode enabled for message feed feature | Data Type: Boolean<br>Range: True or False<br>Default Value:False |
| messageCopy.security.protocol | This is a conditional parameter.<br>It is used for message feed feature when security is enabled between SEPP and Gateway. | Data Type: String<br>Range: SASL_SSL or SSL<br>Default Value: SASL_SSL |
| messageCopy.security.tlsVersion | This is a mandatory parameter. TLS version details. | Data Type: String<br>Range: TLSv1.2, TLSv1.3<br>Default Value: TLSv1.3 |
| kafka.bootstrapAddress | This is an conditional parameter. List of comma- separated Kafka Nodes (to which messages should be copied if messageCopy feature is enabled). | Data Type: String<br>Range: NA<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| messageCopy.security.saslConfiguration.username | This is a mandatory parameter. username for DD<br>Refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: test |
| messageCopy.security.saslConfiguration.password.k8SecretName | This is a mandatory parameter. Secret name for gateway on which feature enabled | Data Type: String<br>Range: ocsepp-plmn-secret for PLMN Gateways and ocsepp-n32-secret for N32 Gateways<br>Default Value: message-copy-secret |
| messageCopy.security.saslConfiguration.password.k8NameSpace | This is a mandatory parameter. Namespace where DD deployed<br>Please refer to DD guide for more details | Data Type: String<br>Range:<br>Default Value:ocegress |
| messageCopy.security.saslConfiguration.password.fileName | This is a mandatory parameter. File used to create DD secrets<br>Please refer to DD guide for more details | Data Type:String<br>Range: NA<br>Default Value: password.txt |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| kafka.bootstrap-servers | This is an conditional parameter. List of comma-separated DD Nodes IP address<br>The port will change to 9092 if security is disabled | Data Type: String<br>Range: NA<br>Default Value:<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| clientDisabledExtension | This is an optional parameter.<br>Disables the extension sent by messages originated by clients (ClientHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: ec_point_formats |
| serverDisabledExtension | This is an optional parameter.<br>Disables the extension sent by messages originated by servers (ServerHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| tlsNamedGroups | This is an optional parameter.<br>Provides a list of values sent in the supported_groups extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| clientSignatureSchemes | This is an optional parameter.<br>Provides a list of values sent in the signature_algorithms extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| service.ssl.tlsVersion | This is a mandatory parameter.<br>Indicates the TLS version. | **Data Type**: String<br>**Range**:<br>• TLSv1.2 , TLSv1.3<br>• TLSv1.2<br>• TLSv1.3<br>**Default Value**: TLSv1.2, TLSv1.3 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| allowedCipherSuites | This is an optional parameter.<br>Indicates allowed Ciphers. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |
| cipherSuites | This is an optional parameter.<br>Indicates supported cipher suites. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |
| healthCheckMonitoring.enabled | This is an optional parameter.<br>Enables the support of health check API on the N32 Ingress gateway. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| seppPeerHealthCheck | This is an optional parameter. Enables the health check monitoring feature on N32 Egress gateway. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |
| seppPeerHealthCheckCodes | This is an optional parameter. Indicates the list of response codes that will be used to mark the peer as healthy. | **Data Type**: String<br>**Range**: Valid Numerical code<br>**Default Value**: 200, 204, 400, 401,403, 404, 501, and 503. |
| keybasedKafkaProducer | This is a mandatory parameter.<br>This parameter when set to true, enables the functionality of message copy of same transaction into same Kafka partition. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |
| podSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents pod from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| podSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that all processes in pod must run with the provided user ID. | Data Type: Integer<br>Default Value: 10001 |
| securityContext.enable | This is a mandatory parameter.<br>Enables security context for containers. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.readOnlyRootFilesystem | This is a mandatory parameter.<br>Mounts the mediation container's root filesystem as read-only. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.allowPrivilegeEscalation | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. allowPrivilegeEscalation is always set to true when the container:<br>• is run as privileged<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents containers from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.privileged | This is a mandatory parameter.<br>Provides containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| containerSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that for any container in the pod, all processes must run with the provided user ID. | Data Type: Integer<br>Range: Valid IDs for security context for user<br>Default Value: 10001 |
| containerSecurityContext.capabilities.drop | This is a mandatory parameter.<br>Manages Linux capabilities for containers. Using Linux capabilities, you can grant certain privileges to a process without granting all the privileges of the root user. | Data Type: List of strings<br>Range: Valid Linux capabilities<br>Default Value: -all |
| enablePodSecurityContext | This is a mandatory parameter.<br>Enables security context for pod. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| egressRoutingMode | This is a mandatory parameter.<br>This parameter defines the routing mode (IPv4/IPv6) for the egress connections. | Data Type: String<br>Range: IPv4, IPv6, IPv6_IPv4, and IPv4_IPv6.<br>Default Value:<br>In single stack mode, Default value: IPv4<br>In dual stack mode, Default value: IPv6_IPv4 ( IPv6 preferred )<br>Roaming Hub:<br>Default value : IPv4 (do not change). |
| checkAltRouteSvcReady | This is a mandatory parameter.<br>This parameter must be set to true if Alternate Route microservice is used for DNS SRV. If this flag is enabled, then Egress Gateway will be dependent on Alternate Route microservice to be up and running. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion | This is a mandatory parameter.<br>This parameter defines the supported TLS versions used by Gateway Services to communicate with the Kube-API-Server. | Data Type: String<br>Range: TLS 1.2 and TLS 1.3<br>Default Value: TLS 1.3 |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `tlsVersionSupportForKubeApiServer.cipherSuites` | This is a mandatory parameter. This parameter indicates the Cipher suites that are compliant with the configured `tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion` | Data Type: String<br>Range: NA<br>Default Value:<br>• TLS_AES_256_GCM_SHA384<br>• TLS_AES_128_GCM_SHA256<br>• TLS_CH ACHA20 _POLY1305_SHA 256 |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is an optional parameter. This parameter indicates the list of all the secrets that are used for all the features of Gateway Services. These secrets are volume mounted during the pod deployment. | Data Type: String<br>Range: NA<br>Default Value:<br>• ocegress -secret1<br>• ocegress -secret2<br>• ocegress -secret3 |
| `tlsVersionSupportForKubeApiServer.enabled` | This is an optional parameter.<br>This parameter enables or disables TLS 1.3 support for establishing communication between Gateway Services and Kubernetes API server (Kube\u0002Api-Server). If this parameter is enabled, support for establishing communication with Kube\u0002Api-Server is provided through TLS 1.3, along with TLS 1.2 as configured in `kubeApiServerTlsVersion`. If this parameter is disabled, support for communication with Kube-Api-Server is provided only through TLS 1.2. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |
| `overloadControlLocalDiscardEnabled` | This is an optional parameter. This parameter enables each pod independently to discard requests based on its local load. This parameter can have the following values:<br>• true: No coherence-based token reservation is required.<br>• false: Coherence is used for token reservations across pods. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |
| `startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |
| `startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `readinessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `readinessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `readinessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `readinessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `livenessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `livenessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| `livenessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `livenessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `livenessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `n32-egress-gateway.isSbiTimerEnabled` | This is an optional parameter.<br>This flag is used to enable or disable SBI Timer feature for calculating request timeout at n32-egress-gateway | **Data Type**: boolean<br>**Default Value**: false<br>**Range**: NA |
| `n32-egress-gateway.sbiTimerTimezone` | This is an optional parameter.<br>This flag is used to configure Timezone mode for SBI timer logic at n32-egress-gateway. | **Data Type**: String<br>**Default Value**: GMT<br>**Range**: GMT,ANY |
| `n32-egress-gateway.multiFqdn.enabled` | This is a mandatory parameter.<br>This flag enables the multiple FQDN support for hosted sepp mode. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `n32-egress-gateway.multiFqdn.fqdnDetails.fqdn` | This is a conditional parameter.<br>FQDN/SAN value for which certificates need to be configured | Data Type: String<br>Range: String<br>Default Value: dummy.com |
| `n32-egress-gateway.multiFqdn.fqdnDetails.caroot_file` | This is a conditional parameter.<br>caroot file name details of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_caroot.cer |


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**Table 3-10 (Cont.) n32-egress-gateway**

| Name | Description | Details |
|---|---|---|
| n32-egress-gateway.multiFqdn.fqdnDetails.key_store_passwd_file | This is a conditional parameter.<br>keystore password file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_key.txt |
| n32-egress-gateway.multiFqdn.fqdnDetails.ocsepp_cert_file | This is a conditional parameter.<br>ocsepp certificate file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_ocsepp.cer |
| n32-egress-gateway.multiFqdn.fqdnDetails.rsa_certificate_file | This is a conditional parameter.<br>RSA certificate file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_rsa_certificate.crt |
| n32-egress-gateway.multiFqdn.fqdnDetails.rsa_private_key_file | This is a conditional parameter.<br>RSA private key file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_rsa_private_key_pkcs1.pem |
| n32-egress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_certificate_file | This is a conditional parameter.<br>SSL ECDSA certificate file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_ssl_ecdsa_certificate.crt |
| n32-egress-gateway.multiFqdn.fqdnDetails.ssl_ecdsa_private_key_file | This is a conditional parameter.<br>SSL ECDSA private key file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_ssl_ecdsa_private_key.pem |
| n32-egress-gateway.multiFqdn.fqdnDetails.trust_store_passwd_file | This is a conditional parameter.<br>truststore password file name of corresponding FQDN which are present in the secret | Data Type: String<br>Range: String<br>Default Value: dummy.com_trust.txt |

## 3.1.10 plmn-egress-gateway

This section includes information about the plmn-egress-gateway parameters of the SEPP.

**Table 3-11 plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| cmName | This is an optional parameter. Indicates the name of the configmap. | Data Type: String<br>Range: NA<br>Default Value: egressgateway |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `istioSidecarQuitUrl` | This is a mandatory parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/quitquitquit<br>Note: Port should be envoy admin port. |
| `istioSidecarReadyUrl` | This is a mandatory parameter.<br>The sidecar (istio ready url)when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/ready<br>Note: Port should be envoy admin port. |
| `global.k8sResources.pdb.supportedVersions` | Kubernetes resource PDB supported version. | Data Type: String<br>Range: NA<br>Default Value: policy/v1 |
| `global.logStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.crictlStorage` | This is an optional parameter.<br>Ephemeral storage configuration for log storage. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| `global.ephemeralStorageLimit` | This is an optional parameter.<br>Ephemeral storage Limit. | Data Type: Integer<br>Range: NA<br>Default Value: 1024 |
| `extraContainers` | This is a mandatory parameter.<br>The attribute is used to control the usage of extra container(DEBUG tool).<br>Allowed Values: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>If assigned with ENABLED or USE_GLOBAL_VALUE, then ensure "extraContainers Tpl" yaml chunk is defined at Service level or Global level in the parent chart based on the value assigned respectively. | Data Type: String<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| `prefix` | This is a mandatory parameter. When this parameter is set to specific value then that value will be used in the names of resources along with release name. | Data Type: String<br>Range: NA<br>Default Value: plmn |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routeConfigMode | This is an optional parameter.<br>Mode of route configuration for sbiRouting. Possible values are Helm, REST. | Data Type: String<br>Range: Helm, REST<br>Default Value: REST |
| serviceEgressGateway.port | This is a mandatory parameter. Indicates the Egress Gateway port. | Data Type: Integer<br>Range: NA<br>Default Value: 8080 |
| serviceEgressGateway.sslPort | This is a mandatory parameter. SSL Port | Data Type: Integer<br>Range: NA<br>Default Value: 8442 |
| serviceEgressGateway.actuatorPort | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It Cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 9094 |
| deploymentEgressGateway.image | This is an optional parameter. Image name of ingress gateway | Data Type: String<br>Range: NA<br>Default Value: ocingress_gateway |
| deploymentEgressGateway.imageTag | This is an optional parameter. Image Tag name of ingress gateway. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |
| deploymentEgressGateway.pullPolicy | This is an optional parameter. Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| initContainersImage.name | This is an optional parameter. Image name of initContainer | Data Type: String<br>Range: NA<br>Default Value: configurationinit |
| initContainersImage.tag | This is an optional parameter. Image tag name of initContainer | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |
| initContainersImage.pullPolicy | This is an optional parameter. Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| updateContainersImage.name | This is an optional parameter. Image name of updateContainer | Data Type: String<br>Range: NA<br>Default Value: configurationupdate |
| updateContainersImage.tag | This is an optional parameter. Image tag name of updateContainer | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `updateContainersImage.pullPolicy` | This is an optional parameter.<br>Image Pull Policy | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| `dbHookImage.name` | This is an optional parameter.<br>Image name of dbHook | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| `dbHookImage.tag` | This is an optional parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-egress-tag |
| `dbHookImage.pullPolicy` | This is an optional parameter.<br>Pull Policy of Image | Data Type: String<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| `initssl` | This is an optional parameter.<br>Enabling it generates key and trust store for https support | Data Type: Boolean<br>Range: True or False<br>Default Value: True<br>**Note:**<br>• The default value will be true, if the user wants to deploy in non ASM mode.<br>• The default value will be false, if the user wants to deploy in ASM mode. |
| `enableIncomingHttp` | This is an optional parameter.<br>Enabling it for incoming http request | Data Type: Boolean<br>Range: True or False<br>Default Value: true<br>**Note:** This value must be set to true always. |
| `enableIncomingHttps` | This is an optional parameter.<br>Enabling it for incoming https request | Data Type: Boolean<br>Range: True or False<br>Default Value: False<br>**Note:** This value must be set to false always. |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| enableOutgoingHttps | This is an optional parameter.<br>Enabling it for incoming https request | Data Type: Boolean<br>Range: True or False<br>Default Value: True<br>**Note:**<br>• The default value will be true, if the user wants to enable the outgoing request over HTTPs mode only.<br>• The default value will be false, if the user wants to enable the outgoing request over HTTP mode.<br>• For ASM mode, this value is set to false. |
| httpsTargetOnly | This is an optional parameter.<br>This is global parameter which will be taken into consideration if route (under routeConfig section) based httpsTargetOnly parameter is not available. true: Select SbiRouting instances for https list only false: Run existing logic as per provided scheme. Note: double quotes to be enclosed for values of httpsTargetOnly. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| httpRuriOnly | This is an optional parameter.<br>Global parameter is taken into consideration if route (under routeConfig section) based httpRuriOnly parameter is not available. true: Means change Scheme of RURI to http false: Keep scheme as is. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| sbiRouting.sbiRoutingDefaultScheme | This is an optional parameter.<br>Default scheme applicable when3gpp-sbi-target apirootheader is missing | Data Type: String<br>Range: NA<br>Default Value: https |
| sbiRouting.peerConfiguration[0].id | This is a mandatory parameter.<br>Peer identifier for the peer | Data Type: String<br>Range: NA<br>Default Value: peer1 |
| sbiRouting.peerConfiguration[0].host | This is a mandatory parameter.<br>First peer instance HTTP IP/ FQDN | Data Type: String<br>Range: NA<br>Default Value: <release-name>-plmn-ingress-gateway |
| sbiRouting.peerConfiguration[0].port | This is a mandatory parameter.<br>First peer instance Port | Data Type: Integer<br>Range: NA<br>Default Value: 80 |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `sbiRouting.peerConfiguration[0].apiPrfix` | This is an optional parameter.<br>First peer instance apiPrefix. Change this value to corresponding prefix if "/" is not expected to be provided. Applicable only for SCP with TLS enabled. | Data Type: String<br>Range: NA<br>Default Value: "/" |
| `sbiRouting.peerSetConfiguration[0].id[0]` | This is a mandatory parameter. (If route-level "metadata.sbiRoutingEnabled" flag is set to true)<br>This is the peer set id that contains list of http and http instances. | Data Type: String<br>Range: NA<br>Default Value: set0 |
| `sbiRouting.peerSetConfiguration[0].id[0].httpConfiguration[0].priority` | This is a mandatory parameter. (If route-level "metadata.sbiRoutingEnabled" flag is set to true)<br>This denotes the priority of the http instance that request needs to be forwarded. Lower the priority, higher the preference. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| `sbiRouting.peerSetConfiguration[0].id[0].httpConfiguration[0].peerIdentifier` | This is a mandatory parameter. (If route-level "metadata.sbiRoutingEnabled" flag is set to true)<br>This denotes the peer id that is present in the list of peers configured with unique ids. | Data Type: String<br>Range: NA<br>Default Value: peer1 |
| `headlessServiceEnabled` | This is an optional parameter.<br>Enabling this will make the service type default to ClusterIP. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| `log.level.root` | This is an optional parameter.<br>Log level for root logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| `log.level.egress` | This is an optional parameter.<br>Log level for ingress logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: ERROR |
| `log.level.oauth` | This is an optional parameter.<br>Log level for oauth logs. | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: WARN |
| `log.level.updateContainer` | This is an optional parameter.<br>Log level for update container logs | Data Type: String<br>Range: DEBUG/ INFO/ WARN/ ERROR<br>Default Value: WARN |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| connectionTimeout | This is an optional parameter.<br>Connection timeout in milliseconds | Data Type: Integer<br>Range: NA<br>Default Value: 2000 |
| requestTimeout | This is an optional parameter.<br>Request Timeout in milli seconds | Data Type: Integer<br>Range: NA<br>Default Value:<br>10000 #ms |
| gracefulCloseDelay | This is an mandatory parameter.<br>gracefulCloseDelay value should be positive value greater than request Timeout and lesser than jettyIdleTimeout. If gracefulCloseDelay is set to 0 then default value of 30000 ms will be considered internally. | Data Type: Integer<br>Range: NA<br>Default Value:<br>30000 ms |
| service.ssl.privateKey.k8SecretName | This is a mandatory parameter.<br>Name of the privatekey secret | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.privateKey.k8NameSpace | This is a mandatory parameter.<br>Namespace of privatekey | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.privateKey.rsa.fileName | This is a mandatory parameter.<br>rsa private key file name | Data Type: String<br>Range: NA<br>Default Value:<br>rsa_private_key_pkcs1.pem |
| service.ssl.privateKey.ecdsa.fileName | This is a mandatory parameter.<br>ecdsa private key file name | Data Type: String<br>Range: NA<br>Default Value:<br>ssl_ecdsa_private_key.pem |
| service.ssl.certificate.k8SecretName | Name of the certificate secret | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.certificate.k8NameSpace | This is a mandatory parameter.<br>Namespace of certificate | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.certificate.rsa.fileName | This is a mandatory parameter.<br>rsa certificate key file name | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp.cer |
| service.ssl.certificate.ecdsa.fileName | This is a mandatory parameter.<br>ecdsa certificate key file name | Data Type: String<br>Range: NA<br>Default Value:<br>ssl_ecdsa_certificate.crt |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| service.ssl.caBundle.k8SecretName | This is a mandatory parameter. Name of the caBundle secret | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.caBundle.k8NameSpace | This is a mandatory parameter. Namespace of private | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.caBundle.fileName | This is a mandatory parameter. rsa private key file name | Data Type: String<br>Range: NA<br>Default Value:<br>caroot.cer |
| service.ssl.keyStorePassword.k8SecretName | This is a mandatory parameter. Name of the privatekey secret | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.keyStorePassword.k8NameSpace | This is a mandatory parameter. Namespace of privatekey | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.keyStorePassword.fileName | This is a mandatory parameter. File name that has password for keyStore | Data Type: String<br>Range: NA<br>Default Value:<br>key.txt |
| service.ssl.trustStorePassword.k8SecretName | This is a mandatory parameter. Name of the privatekey secret | Data Type: String<br>Range: NA<br>Default Value:<br>ocsepp-plmn-secret |
| service.ssl.trustStorePassword.k8NameSpace | This is a mandatory parameter. Namespace of privatekey | Data Type: String<br>Range: NA<br>Default Value:<br>DEPLOYMENT_NAMESPACE |
| service.ssl.trustStorePassword.fileName | This is a mandatory parameter. File name that has password for trustStore | Data Type: String<br>Range: NA<br>Default Value:<br>trust.txt |
| service.ssl.initialAlgorithm | This is a mandatory parameter. Algorithm based on the certificate | Data Type: String<br>Range: NA<br>Default Value:<br>RS256 |
| service.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to plmn-egw specific Service | Data Type: String<br>Range: NA<br>Default Value:<br>{ } |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| service.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to plmn-egw specific Services | Data Type: String<br>Range: NA<br>Default Value:<br>{ } |
| deployment.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to plmn-egw specific deployment | Data Type: String<br>Range: NA<br>Default Value:<br>{ } |
| deployment.customExtension.annotations | This is an optional parameter. Custom Annotations that needs to be added to plmn-egw specific deployment | Data Type: String<br>Range: NA<br>Default Value:<br>{ } |
| deDupeResponseHeader | This is an optional parameter.<br>it is used for handling duplicate values in response headers.<br>Multiple values can be provided with space.<br># Ex: content-type nettylatency requestmethod, RETAIN_LAST | Data Type: String<br>Range: NA<br>Default Value: content-type, RETAIN_LAST |
| commonCfgClient.enabled | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: true or false<br>Default Value:<br>true |
| commonCfgServer.configServerSvcName | This is a mandatory parameter if commonCfgClient. enabled is set to true<br>Service name of common configuration service to which the client tries to poll for configuration updates | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.host | This is an optional parameter. No (It is needed if commonCfgServer.configServerSvcName is not available)<br>Host name of Common configuration server to which client tries to poll for configuration updates. This value is picked up if commonCfgServer .configServer SvcName is not available | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| commonCfgServer.port | This is a mandatory parameter if commonCfgClient. enabled is set to true<br>Port of Common Configurationserver | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| commonCfgServer.pollingInterval | This is a mandatory parameter if commonCfgClient. enabled is set to true<br>This is the interval between two subsequent polling requests from config client toserver | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| commonServiceName | This is a Mandatory parameter if commonCfgClient.enabled is set to true.<br>This is the common service name that is currently requesting for configuration updates from server | Data Type: String<br>Range: NA<br>Default Value:<br>egw |
| enableSecondaryInstance | To enable secondary instance of config client enableSecondaryInstance must beset to true. | Data Type: Boolean<br>Range: NA<br>Default Value: false |
| ingressServiceName | IngressServiceName must be set with the value of commonServiceName present in ingress values.yaml. | Data Type: string<br>Range: NA<br>Default Value: igw |
| ingressReleaseVersion | IngressReleaseVersion must be same as version in Chart.yaml of IngressGateway. | Data Type: String<br>Range: NA<br>Default Value: helm-gateway-ingress-tag |
| restoreBackupOnInstall | This is an optional parameter.<br>This flag when enabled picks up the data from the backup table during installation of gateway | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| dbConfig.dbHost | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Hostname of Mysql in which the configuration must be stored | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| dbConfig.dbPort | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Port of mysql | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |
| dbConfig.configFile | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>File name for initial configuration that must be stored in the db | Data Type: String<br>Range: NA<br>Default Value: defaultconfig.yaml |
| dbConfig.schemaFile | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>File name for json schema validation | Data Type: String<br>Range: NA<br>Default Value: defaultschema.json |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| dbConfig.secretName | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Secret name from which the db name, db password and db user name is picked | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| dbConfig.dbName | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Database name | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| dbConfig.dbUNameLiteral | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Name of the Key configured for "DB Username" in Secret with following name: "<dbConfig.secretName>" | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| dbConfig.dbPwdLiteral | This is a mandatory parameter. (if commonCfgClient enabled is set to true)<br>Name of the Key configured for "DB Password" in Secret with following name: "<dbConfig.secretName>" | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| dbConfig.dbEngine | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| globalretry.enabled | This is an optional parameter<br>Can be set to true if Scp re-route feature (scpRerouteEnabled) is enabled. | Data Type: Boolean<br>Range: true or false<br>Default Value:<br>false |
| globalretry.retries | This is a mandatory parameter if, "routesConfig[0].filterName2 .retries" is not defined<br>Number of reroute to be attempted to alternate SCP instances and this property will be considered in the absence of "routesConfig[0].filterName2.retries"<br>attribute at route level. | Data Type: Interger<br>Range: NA<br>Default Value: 2 |
| routesConfig[0].id | This is a mandatory parameter.<br>id of the route. Multiple routes can be configured in a similar way. | Data Type: Interger<br>Range: NA<br>Default Value: scp_via_proxy |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].uri | This is a mandatory parameter.<br>Provide any dummy url, existing url can also left with existing value. Please note provided sample url does not make any impact (http or<br>https) as url's will be constructed in the code. | Data Type: String<br>Range: NA<br>Default Value: http://request.uri |
| routesConfig[0].path | This is a mandatory parameter.<br>Provide the path to be matched. | Data Type: String<br>Range: NA<br>Default Value: /** |
| routesConfig[0].order | This is a mandatory parameter.<br>Provide the order of the execution of this route. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| routesConfig[0].metadata.httpRuriOnly | This is an optional parameter<br>Provide true or false enclosed with double quotes. If "true" then change scheme of RURI to http , "false" then keep scheme as is. | Data Type: Boolean<br>Range: true or false<br>Default Value:<br>false |
| routesConfig[0].metadata.httpsTargetOnly | This is an optional parameter<br>Provide true or false enclosed with double quotes. If "true" then select SBI instances for https list only (if 3gpp sbi target root header is<br>http), if "false" then run existing logic as per the provided scheme. | Data Type: Boolean<br>Range: true or false<br>Default Value:<br>false |
| routesConfig[0].metadata.sbiRoutingEnabled | This is an optional parameter<br>true: SbiRouting functionality is enabled<br>false: SbiRouting functionality is disabled | Data Type: Boolean<br>Range: true or false<br>Default Value:<br>false |
| routesConfig[0].filterName1.name | This is a mandatory parameter if routesConfig[0].metadata.sbiRoutingEnabled is true<br>Provide filtername as "SBIRoutingFilter"<br>If FilterName1 is not provided then it would be considered as direct Egress Gateway path and configured accordingly during deployment. | Data Type: String<br>Range: NA<br>Default Value: "SBIRoutingFilter" |
| routesConfig[0].filterName1.args.peerSetIdentifier | This is a mandatory parameter if routesConfig[0].metadata.sbiRoutingEnabled is true<br>This flag maps to id of peerSetConfiguration | Data Type: String<br>Range: NA<br>Default Value: set0 |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routesConfig[0].filterName1.args.customPeerSelectorEnabled | This is an optional parameter<br>This flag allows the user to send request to a particular instance directly when enabled according to "ocalternaterouteattempt" header | Data Type: Boolean<br>Range: true or false<br>Default Value:<br>false |
| routesConfig[0].removeRequestHeader[0].name | This is an optional parameter<br>This field is used for removing a request header at route level. Additional header can be configured by adding a new element in the next line and so on.<br>The value of "name" attribute denotes the name of the request header which is to be removed at route level. Add a new entry in next<br>line for every header to be removed. | Data Type: String<br>Range: NA<br>Default Value: NA |
| routesConfig[0].removeResponseHeader[0]0.name | This is an optional parameter<br>This field is used for removing a responseheader at route level. Additional header can be configured by adding a new element in the next line and so on.<br>The value of "name" attribute denotes the name of the request header which is to be removed at route level. Add a new entry in next<br>line for every header to be removed. | Data Type: String<br>Range: NA<br>Default Value: NA |
| dnsSrv.host | This is a mandatory parameter, If DnsSrv integration is required, else optional<br>Host of DNS Alternate Route Service | Data Type: String<br>Range: NA<br>Default Value: NA |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| dnsSrv.alternateRouteSvcName | This is a mandatory parameter, if DnsSrv integration is required and Service Name is expected to be provided otherwise optional<br>Service name of Alternate Route Service.<br>If Service name is provided , then this parameter would be picked for integrating Egress Gateway with alternate route service. If IP or Fqdn is expected to be provided then update this parameter as blank and update above parameter accordingly.<br>If this parameter is populated with data then above parameter would be ignored. | Data Type: String<br>Range: NA<br>Default Value: alternate-route |
| dnsSrv.port | This is a mandatory parameter, If DnsSrv integration is required, else optional.<br>Port of DNS Alternate Route Service. | Data Type: Integer<br>Range: NA<br>Default Value: 80 |
| dnsSrv.scheme | This is a mandatory parameter, If DnsSrv integration is required, else optional.<br>Scheme of request that need to be sent to alternate route service. By default it is http. Just gave configurable privilege for future. | Data Type: String<br>Range: NA<br>Default Value: http |
| dnsSrv.connectTimeout | This is a mandatory parameter, If DnsSrv integration is required, else optional.<br>Duration for Egress Gateway to Alternate Route Service DNS SRV connection timeout. | Data Type: Integer<br>Range: NA<br>Default Value: 10000 |
| dnsSrv.requestTimeout | This is a mandatory parameter, If DnsSrv integration is required, else optional.<br>Duration for Egress Gateway to Alternate Route Service DNS SRV request query execution. | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| dnsSrv.fqdnSchemesForProbing | This is a mandatory parameter.<br>• Probing is executed as part of the container probe. An empty list indicates no probing.<br>• Probing sends or looks up requests to DNS SRV host for the configured FQDN and scheme.<br>• Probing is done sequentially for FQDN scheme combination, adjust container probe time based on the number of FQDNs. | Data Type: string<br>Range: NA<br>Default Value: [] |
| dnsSrv.backoffDelay | This is a mandatory parameter.<br>BackoffDelay is used for backoff during DNS SRV failures. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| dnsSrv.errorCodeOnDNSResolutionFailure | This is a mandatory parameter, If DnsSrv integration is required, else optional.<br>Currently, this value cannot be modified. | Data Type: Integer<br>Range: NA<br>Default Value: 425 |
| dnsSrv.errorDescriptionOnDNSResolutionFailure | This is an optional parameter.<br>Error Description for DNS resolution failure. Populated in ProblemDetails response in ProblemDetails.detail section.<br>Currently, this value cannot be modified. | Data Type: String<br>Range: NA<br>Default Value: "" |
| dnsSrv.errorTitleOnDNSResolutionFailure | This is an optional parameter.<br>Error title for DNS resolution failure. Populated in ProblemDetails response in ProblemDetails.title section.<br>Currently, this value cannot be modified. | Data Type: String<br>Range: NA<br>Default Value: "" |
| dnsSrv.errorCauseOnDNSResolutionFailure | This is an optional parameter.<br>Error cause for DNS resolution failure. Populated in ProblemDetails response in ProblemDetails.cause section.<br>Currently, this value cannot be modified. | Data Type: String<br>Range: NA<br>Default Value: "" |
| dnsRefreshDelay | This is an optional parameter.<br>Dns Refresh Delay in milli-seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10000 |
| resources.limits.cpu | This is an optional parameter.<br>CPU Limit | Data Type: Integer<br>Range: NA<br>Default Value: 5 |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| resources.limits.initServiceCpu | This is an optional parameter. Init Container CPU Limit | Data Type: Float<br>Range: NA<br>Default Value:<br>1 |
| resources.limits.updateServiceCpu | This is an optional parameter. Update Container CPU Limit | Data Type: Float<br>Range: NA<br>Default Value:<br>1 |
| resources.limits.memory | This is an optional parameter. Memory Limit | Data Type: String<br>Range: NA<br>Default Value:<br>5Gi |
| resources.limits.updateServiceMemory | This is an optional parameter. Update Container Memory Limit | Data Type: String<br>Range: NA<br>Default Value:<br>1Gi |
| resources.limits.initServiceMemory | This is an optional parameter. int Container Memory Limit | Data Type: String<br>Range: NA<br>Default Value:<br>1Gi |
| resources.requests.cpu | This is an optional parameter. CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value:<br>1 |
| resources.requests.initServiceCpu | This is an optional parameter. Init Container CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value:<br>1 |
| resources.requests.updateServiceCpu | This is an optional parameter. Update Container CPU for requests | Data Type: Integer<br>Range: NA<br>Default Value:<br>1 |
| resources.requests.memory | This is an optional parameter. Memory for requests | Data Type: String<br>Range: NA<br>Default Value:<br>5Gi |
| resources.requests.updateServiceMemory | This is an optional parameter. Update Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value:<br>1Gi |
| resources.requests.initServiceMemory | This is an optional parameter. Init Container Memory for requests | Data Type: String<br>Range: NA<br>Default Value:<br>1Gi |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `resources.target.averageCpuUtil` | This is an optional parameter. Resource Requirements(avg cpu utilisation) | Data Type: Integer<br>Range: NA<br>Default Value:<br>70 |
| `maxUnavailable` | Number of Pods that will be unavailable during a disruption | Data Type: String<br>Range: NA<br>Default Value:<br>25% |
| `minReplicas` | This is an optional parameter. Min replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value:<br>10 |
| `maxReplicas` | This is an optional parameter. Max replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value:<br>10 |
| `gracefulShutdown.gracePeriod` | This is an optional parameter.<br>Grace period to wait for active requests to be executed. If there are no active requests then this period is neglected. 's' in case of seconds and 'm' in<br>case of minutes | Data Type: String<br>Range: NA<br>Default Value: 1m |
| `gracefulShutdown.defaultErrorCode` | This is a optional parameter<br>Default error code returned at the time of Graceful shut down | Data Type: Integer<br>Range: NA<br>Default Value:<br>500 |
| `gracefulShutdown.errorDescription` | This is an optional parameter.<br>Graceful shut down Error description | Data Type: String<br>Range: NA<br>Default Value:<br>Shutdown in progress |
| `gracefulShutdown.errorTitle` | This is an optional parameter.<br>Graceful shut down error title | Data Type: String<br>Range: NA<br>Default Value:<br>Graceful shutdown |
| `gracefulShutdown.errorCause` | This is an optional parameter.<br>Graceful shut down error cause | Data Type: String<br>Range: NA<br>Default Value:<br>Shutdown |
| `egressRateLimiting.enabled` | This is a mandatory parameter. This parameter enables Global Rate Limiting on Gateway. | Data Type: boolean<br>Range: True or False<br>Default Value: false |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| egressRateLimiting.duration | This is a mandatory parameter. This parameter defines theduration to decide how frequently to refill(in seconds) | Data Type: Integer<br>Range: NA<br>Default Value:<br>1 |
| egressRateLimiting.bucketCapacity | This is a mandatory parameter. This parameter defines the Bucket size in which capacity to handle traffic burst is defined. | Data Type: Integer<br>Range: NA<br>Default Value:<br>7500 |
| egressRateLimiting.refillRate | This is a mandatory parameter. This parameter defines the number of tokens to be added to refill the bucket | Data Type: Integer<br>Range: NA<br>Default Value:<br>7500 |
| egressRateLimiting.errorCodeOnRateLimit | This is a mandatory parameter. This parameter defines the configurable error code to be returned | Data Type: Integer<br>Range: NA<br>Default Value:<br>429 |
| nettyIdleTimeout | This is an optional parameter.<br>Netty Idle Timeout in milli seconds | Data Type: Integer<br>Range: NA<br>Default Value:<br>120000 |
| nfFqdn | This is a mandatory parameter.<br>NF FQDN | Data Type: Integer<br>Range: NA<br>Default Value:<br>sepp2.inter.oracle.com |
| jaegerTracingEnabled | This is an optional parameter. Enable jaeger tracing | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| openTracing.jaeger.udpSender.host | This is an optional parameter. Jaeger Host | Data Type: String<br>Range: NA<br>Default Value:<br>occne-tracer-jaeger-agent.occne-infra |
| openTracing.jaeger.udpSender.port | This is an optional parameter. Jaeger Port | Data Type: Integer<br>Range: NA<br>Default Value:<br>6831 |
| openTracing.jaeger.probabilisticSampler | This is an optional parameter. Trace capture in percentage | Data Type: Float<br>Range: NA<br>Default Value: 0.5 |
| messageCopy.enabled | This is an optional parameter. This parameter enables or disables the Message feed feature at the Ingress Gateway. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| messageCopy.copyPayload | This is an optional parameter. This parameter specifies whether to copy the message payload in the feed towards Data Director or not.<br>true: the complete payload message is copied.<br>false: Only the header information is copied. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.topicName | This is an optional parameter. Name of the topic to which Ingress Gateway send the payloads. | Data Type: String<br>Range: NA<br>Default Value:<br>message.copy |
| messageCopy.ackRequired | This is a mandatory parameter. This parameter specifies if we wait for any acknowledgement from DD. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.retryOnFailure | This is a mandatory parameter. This parameter specifies how many times SEPP should retry if message was not sent to DD successfully. | Data Type: Integer<br>Range: NA<br>Default Value:<br>0 |
| messageCopy.threadPoolConfigurations.coreSize | This is an optional parameter. core Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| messageCopy.threadPoolConfigurations.maxSize | This is an optional parameter. max Size for thread pool configuration for message feed thread<br>For performance enhancement, set the value as16. | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| messageCopy.threadPoolConfigurations.queueCapacity | This is an optional parameter. queue capacity for thread pool configuration message feed thread<br>For performance enhancement, set the value as 3000. | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |
| messageCopy.security.enabled | This is a mandatory parameter. Security mode enabled for message feed feature | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| messageCopy.security.protocol | This is a conditional parameter.<br>It is used for message feed feature when security is enabled between SEPP and Gateway. | Data Type: String<br>Range: SASL_SSL or SSL<br>Default Value: SASL_SSL |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| messageCopy.security.tlsVersion | This is a mandatory parameter. TLS version details. | Data Type: String<br>Range: TLSv1.2, TLSv1.3<br>Default Value: TLSv1.3 |
| kafka.bootstrapAddress | This is an conditional parameter. List of comma- separated Kafka Nodes (to which messages should be copied if messageCopy feature is enabled). | Data Type: String<br>Range: NA<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| messageCopy.security.saslConfiguration.username | This is a mandatory parameter. username for DD<br>Refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: test |
| messageCopy.security.saslConfiguration.password.k8SecretName | This is a mandatory parameter. Secret name for gateway on which feature enabled | Data Type: String<br>Range: ocsepp-plmn-secret for PLMN Gateways and ocsepp-n32-secret for N32 Gateways<br>Default Value: message-copy-secret |
| messageCopy.security.saslConfiguration.password.k8NameSpace | This is a mandatory parameter. Namespace where DD deployed<br>Please refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: ocegress |
| messageCopy.security.saslConfiguration.password.fileName | This is a mandatory parameter. File used to create DD secrets<br>Please refer to DD guide for more details | Data Type: String<br>Range: NA<br>Default Value: password.txt |
| kafka.bootstrap-servers | This is an conditional parameter. List of comma-separated DD Nodes IP address<br>The port will change to 9092 if security is disabled | Data Type: String<br>Range: NA<br>Default Value:<br>Default Value: <kafka-broker>:<port><br>Port = 9093 for SSL protocol<br>Port = 9094 for SASL_SSL protocol |
| configureDefaultRoute | This is a mandatory parameter.<br>This parameter is used to configure default route in the plmn-egress-gateway for direct routing. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| sbiRoutingConfigMode | This is a mandatory parameter.<br>This parameter is used to enable or disable the egress rate limiting per egress rate limiting list on Ingress Gateway | Data Type: String<br>Default Value: REST |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| routeConfigMode | This is a mandatory parameter.<br>This parameter is used to configure in which all the routes should be operated. | Data Type: String<br>Default Value: REST |
| clientDisabledExtension | This is an optional parameter.<br>Disables the extension sent by messages originated by clients (ClientHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: ec_point_formats |
| serverDisabledExtension | This is an optional parameter.<br>Disables the extension sent by messages originated by servers (ServerHello). | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| tlsNamedGroups | This is an optional parameter.<br>Provides a list of values sent in the supported_groups extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| clientSignatureSchemes | This is an optional parameter.<br>Provides a list of values sent in the signature_algorithms extension. These are comma-separated values. | **Data Type**: String<br>**Range**: NA<br>**Default Value**: null |
| service.ssl.tlsVersion | This is a mandatory parameter.<br>Indicates the TLS version. | **Data Type**: String<br>**Range**:<br>• TLSv1.2 , TLSv1.3<br>• TLSv1.2<br>• TLSv1.3<br>**Default Value**: TLSv1.2, TLSv1.3 |
| allowedCipherSuites | This is an optional parameter.<br>Indicates allowed Ciphers. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| cipherSuites | This is an optional parameter. Indicates supported cipher suites. | **Data Type**: String<br>**Range**: NA<br>**Default Values**:<br>- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384<br>- TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256<br>- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256<br>- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256<br>- TLS_AES_256_GCM_SHA384<br>- TLS_AES_128_GCM_SHA256<br>- TLS_CHACHA20_POLY1305_SHA256 |
| defaultRouteRetryProfile | This is an optional parameter.<br>This parameter is used for enabling default retry feature. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| keybasedKafkaProducer | This is a mandatory parameter.<br>This parameter when set to true, enables the functionality of message copy of same transaction into same Kafka partition. | **Data Type**: Boolean<br>**Range**: True or False<br>**Default Value**: False |
| podSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents pod from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| podSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that all processes in pod must run with the provided user ID. | Data Type: Integer<br>Default Value: 10001 |
| securityContext.enable | This is a mandatory parameter.<br>Enables security context for containers. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.readOnlyRootFilesystem | This is a mandatory parameter.<br>Mounts the mediation container's root filesystem as read-only. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| containerSecurityContext.allowPrivilegeEscalation | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. allowPrivilegeEscalation is always set to true when the container:<br>• is run as privileged<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents containers from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.privileged | This is a mandatory parameter.<br>Provides containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that for any container in the pod, all processes must run with the provided user ID. | Data Type: Integer<br>Range: Valid IDs for security context for user<br>Default Value: 10001 |
| containerSecurityContext.capabilities.drop | This is a mandatory parameter.<br>Manages Linux capabilities for containers. Using Linux capabilities, you can grant certain privileges to a process without granting all the privileges of the root user. | Data Type: List of strings<br>Range: Valid Linux capabilities<br>Default Value: -all |
| enablePodSecurityContext | This is a mandatory parameter.<br>Enables security context for pod. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| egressRoutingMode | This is a mandatory parameter.<br>This parameter defines the routing mode (IPv4/IPv6) for the egress connections. | Data Type: String<br>Range: IPv4, IPv6, IPv6_IPv4, and IPv4_IPv6<br>Default Value:<br>SEPP/Roaming Hub:<br>In single stack mode, Default value: IPv4<br>In dual stack mode, Default value : IPv6_IPv4 (IPv6 preferred ) |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| checkAltRouteSvcReady | This is a mandatory parameter.<br>This parameter must be set to true if Alternate Route microservice is used for DNS SRV. If this flag is enabled, then Egress Gateway will be dependent on Alternate Route microservice to be up and running. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion | This is a mandatory parameter. This parameter defines the supported TLS versions used by Gateway Services to communicate with the Kube-API-Server. | Data Type: String<br>Range: TLS 1.2 and TLS 1.3<br>Default Value: TLS 1.3 |
| tlsVersionSupportForKubeApiServer.cipherSuites | This is a mandatory parameter. This parameter indicates the Cipher suites that are compliant with the configured tlsVersionSupportForKubeApiServer.kubeApiServerTlsVersion | Data Type: String<br>Range: NA<br>Default Value:<br>• TLS_AES_256_GCM_SHA384<br>• TLS_AES_128_GCM_SHA256<br>• TLS_CH ACHA20 _POLY1305_SHA 256 |
| tlsVersionSupportForKubeApiServer.featureSecrets | This is an optional parameter. This parameter indicates the list of all the secrets that are used for all the features of Gateway Services. These secrets are volume mounted during the pod deployment. | Data Type: String<br>Range: NA<br>Default Value:<br>• ocegress -secret1<br>• ocegress -secret2<br>• ocegress -secret3 |
| tlsVersionSupportForKubeApiServer.enabled | This is an optional parameter.<br>This parameter enables or disables TLS 1.3 support for establishing communication between Gateway Services and Kubernetes API server (Kube\u0002Api-Server). If this parameter is enabled, support for establishing communication with Kube\u0002Api-Server is provided through TLS 1.3, along with TLS 1.2 as configured in kubeApiServerTlsVersion. If this parameter is disabled, support for communication with Kube-Api-Server is provided only through TLS 1.2. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| sepp.headerAbsentPredicate | This is a mandatory parameter.<br>This parameter is used to enable the headerAbsent predicate in routes. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |
| `overloadControlLocalDiscardEnabled` | This is an optional parameter.<br>This parameter enables each pod independently to discard requests based on its local load. This parameter can have the following values:<br>• true: No coherence-based token reservation is required.<br>• false: Coherence is used for token reservations across pods. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `tlsVersionSupportForKubeApiServer.featureSecrets` | This is a mandatory parameter.<br>This parameter lists the secrets for external communication. | Data Type: String<br>Range: N32 Gateways<br>`ocsepp-n32-secret`<br>PLMN Gateways<br>`ocsepp-plmn-secret` |
| `startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |
| `startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| `readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `readinessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `readinessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `readinessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `readinessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-11 (Cont.) plmn-egress-gateway**

| Name | Description | Details |
|---|---|---|
| `livenessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `livenessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| `livenessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `livenessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `livenessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `plmn-egress-gateway.isSbiTimerEnabled` | This is an optional parameter.<br>This flag is used to enable or disable SBI Timer feature for calculating request timeout at plmn-egress-gateway. | **Data Type**: boolean<br>**Default Value**: false<br>**Range**: NA |
| `plmn-egress-gateway.sbiTimerTimezone` | This is an optional parameter.<br>This flag is used to configure Timezone mode for SBI timer logic at plmn-egress-gateway. | **Data Type**: String<br>**Default Value**: GMT<br>**Range**: GMT,ANY |

## 3.1.11 nrf-client

This section includes information about the nrf-client parameters of the SEPP.


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**Table 3-12 nrf-client**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.configmapApplicationConfig.profile | This is a mandatory parameter.<br>It contains configuration parameters that goes into nrf-client's config map.<br>Note: See configmap table for configurable parameters | Data Type: String<br>Range: NA<br>Default Value:<br><br>[appcfg]<br>primaryNrfApiRoot=<br>ocnrf-ingressgateway:80<br>nrfScheme=http<br>retryAfterTime=PT120S<br>nrfClientType=SEPP<br>nrfClientSubscribeTypes=<br>appProfiles=<br>[{"nfInstanceId":"9faf1b<br>bc-6e4a-4454-a507-<br>aef01a101a06","nfType":"<br>SEPP","nfStatus":"REGIST<br>ERED","fqdn":"ocsepp-<br>plmn-ingress-<br>gateway.DEPLOYMENT_NAMES<br>PACE","plmnList":<br>[{"mcc": "333","mnc":<br>"222"},{"mcc":<br>"444","mnc": "555"},<br>{"mcc":"444","mnc":"55"}<br>],"capacity":500,"locali<br>ty":"delhi","priority":1<br>,"nfSetIdList":<br>["set001.seppset.5gc.mnc<br>444.mcc555","set001.sepp<br>set.5gc.mnc222.mcc333"]}<br>]<br>registrationRetryInterva<br>l=5000<br>subscriptionRetryInterva<br>l=5000<br>discoveryRetryInterval=5<br>000<br>renewalTimeBeforeExpiry=<br>3600<br>validityTime=30<br>enableSubscriptionAutoRe<br>newal=true<br>nfHeartbeatRate=80<br>acceptAdditionalAttribut<br>es=false<br>retryForCongestion=5<br>supportedDataSetId= |


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**Table 3-13 NRF Retry Configuration Parameters**

| Name | Description | Details |
|---|---|---|
| serviceRequestType | This is a mandatory parameter.<br>The NRF service request type. | Data Type: String<br>Range: ALL_REQUESTS, AUTONOMOUS_NFREGISTER, AUTONOMOUS_NFSTATUS_SUBSCRIBE, AUTONOMOUS_NFUNSUBSCRIBE, AUTONOMOUS_NFSUBSCRIBE_UPDATE, AUTONOMOUS_NFDISCOVER, AUTONOMOUS_NFHEARTBEAT, AUTONOMOUS_NFPATCH(, NFREGISTER, NFUPDATE, NF_STATUS_SUBSCRIBE, NFDISCOVER, NF_SUBSCRIBE_UPDATE, NF_UNSUBSCRIBE, NFDEREGISTER, NF_PROFILE_RETRIEVAL, NF_LIST_RETRIEVAL,<br>Note: ALL_REQUESTS is mandatory service type. All additional service types can be appended to the list based on requirement.<br>Default Value: ALL_REQUESTS, AUTONOMOUS_NFREGISTER |
| primaryNrfRetryCount | This is an optional parameter.<br>Number of times a service request shall be retried to the primary NRF in case of failure. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nonPrimaryNrfRetryCount | This is an optional parameter.<br>Number of times a service request shall be retried to the non-primary NRF in case of failure. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| alternateNRFRetryCount | This is an optional parameter.<br>Number of alternate NRFs that shall be retried in case of failure. | Data Type: Integer<br>Range: NA<br>Default Value: -1<br>Note: A value of -1 indicates all available NRF instances are to be tried. |


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**Table 3-13 (Cont.) NRF Retry Configuration Parameters**

| Name | Description | Details |
|---|---|---|
| errorReasonsForFailure | This is an optional parameter.<br>The http status codes or exceptions for which retry shall be applied. | Data Type: Array[String]<br>Range: [ (All non 2xx HTTP status codes),"SocketTimeoutException","JsonProcessingException","UnknownHostException","NoRouteToHostException"]<br>Default Value: ["503","504","500","SocketTimeoutException","JsonProcessingException","UnknownHostException","NoRouteToHostException","IOException"] |
| requestTimeout | TThis is an optional parameter.<br>Indicates the timeout period where no response is received from the Egress Gateway. Unit: seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10 seconds |
| gatewayErrorCodes | This is an optional parameter.<br>The http status codes sent by the egress-gateway for which retry shall be applied. | Data Type: Array[String]<br>Range: All HTTP Status codes<br>Default Value: 303 |

**Table 3-14 Health Check Parameters**

| Name | Description | Details |
|---|---|---|
| healthCheckCount | This is an optional parameter.<br>The number of consecutive success or failures required to mark an NRF healthy or unhealthy. | Data Type: Integer<br>Range: -1,Values greater than 0. -1 (denotes that the feature is disabled)<br>Default Value: -1 |
| healthCheckInterval | This is an optional parameter.<br>The interval at which a health check of an NRF shall be performed. Unit: seconds. | Data Type: Integer<br>Range: NA<br>Default Value: 5 seconds |
| requestTimeout | This is an optional parameter.<br>The timeout period where no response is received from the egress-gateway.<br>Unit: seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10 seconds |
| errorReasonsForFailure | This is an optional parameter.<br>The http status codes or exceptions for which retry shall be applied. | Data Type: Array[String]<br>Range: ["503","500",504","SocketTimeoutException","JsonProcessingException","UnknownHostException","NoRouteToHostException"]<br>Default Value: ["503","504","500","SocketTimeoutException","IOException"] |


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**Table 3-14 (Cont.) Health Check Parameters**

| Name | Description | Details |
|---|---|---|
| gatewayErrorCodes | This is an optional parameter.<br>The http status codes sent by the Egress Gateway for which retry shall be applied. | Data Type: Array[String]<br>Range: ["503","500",504","SocketTimeoutException","JsonProcessingException","UnknownHostException","NoRouteToHostException"]<br>Default Value: [] |

**Table 3-15 nrf-client-nfdiscovery**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfdiscovery.extraContainers | This is an optional parameter.<br>This attribute is used to control the usage of extra container when DEBUG tool is ENABLED. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| nrfclient.nrf-client.nrf-client-nfdiscovery.image | This is a mandatory parameter.<br>NRF Client Microservice image name | Data Type: String<br>Range: NA<br>Default Value: nrf-client |
| nrfclient.nrf-client.nrf-client-nfdiscovery.imageTag | This is a mandatory parameter.<br>NRF Client Microservice image tag | Data Type: String<br>Range: NA<br>Default Value: helm_nrfclient_tag |
| nrfclient.nrf-client.nrf-client-nfdiscovery.extraContainers | This is an optional parameter.<br>This attribute is used to control the usage of extra container when DEBUG tool is ENABLED. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbHookImage.name | This is a mandatory parameter.<br>Image name of dbHook | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbHookImage.tag | This is a mandatory parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm_nrf_client_db_hook_tag |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbHookImage.pullPolicy | This is a mandatory parameter.<br>Indicates if the image needs to be pulled or not | Data Type: ENUM<br>Range: Always, IfNotPresent, Never<br>Default Value: IfNotPresent |
| nrfclient.nrf-client.nrf-client-nfdiscovery.global.logStorage | This is an optional parameter.<br>Log storage for ephemeral storage request | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.global.crictlStorage | This is an optional parameter.<br>Critical storage for ephemeral storage request | Data Type: Integer<br>Range: NA<br>Default Value: 32 |


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**Table 3-15 (Cont.) nrf-client-nfdiscovery**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfdiscovery.global.ephemeralStorageLimit | This is an optional parameter.<br>Ephemeral storage allocation limits | Data Type: Integer<br>Range: NA<br>Default Value: 1024 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.envJaegerSamplerParam | This is an Conditional Parameter.<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Trace capture in percentage | Data Type: Integer<br>Range: NA<br>Default Value: '1' |
| nrfclient.nrf-client.nrf-client-nfdiscovery.envJaegerSamplerType | This is an Conditional Parameter.<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Trace Sampler type | Data Type: String<br>Range: NA<br>Default Value: ratelimiting |
| nrfclient.nrf-client.nrf-client-nfdiscovery.envJaegerServiceName | This is an Conditional Parameter.<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Jaeger Service Name | Data Type: String<br>Range: NA<br>Default Value: nrf-client-nfdiscovery |
| nrfclient.nrf-client.nrf-client-nfdiscovery.cpuRequest | This is a mandatory parameter.<br>Maximum cpu limit to which it can be requested | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.cpuLimit | This is a mandatory parameter.<br>Maximum CPU limit for nrf-client discovery service. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.memoryRequest | This is a mandatory parameter.<br>Amount of memory requested. | Data Type: String<br>Range: NA<br>Default Value: 2Gi |
| nrfclient.nrf-client.nrf-client-nfdiscovery.memoryLimit | This is a mandatory parameter.<br>Memory limit for nrf-client discovery service. | Data Type: String<br>Range: NA<br>Default Value: 2Gi |
| nrfclient.nrf-client.nrf-client-nfdiscovery.minReplicas | This is a mandatory parameter.<br>Min replicas to scale to maintain an average CPU utilisation. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.maxReplicas | This is a mandatory parameter.<br>Max replicas to scale to maintain an average CPU utilisation. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.averageCpuUtil | This is a mandatory parameter.<br>CPU utilisation limit for autoscaling (creating HPA). | Data Type: Integer<br>Range: NA<br>Default Value: 70 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.upgradeStrategy | This is a mandatory parameter.<br>This parameter indicates the update strategy used in nrf-client discovery service. | Data Type: String<br>Range: NA<br>Default Value: RollingUpdate |


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**Table 3-15 (Cont.) nrf-client-nfdiscovery**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfdiscovery.maxUnavailable | This is an optional parameter.<br>Number of replicas that can go down during a disruption. | Data Type: String<br>Range: NA<br>Default Value: 25% |
| nrfclient.nrf-client.nrf-client-nfdiscovery.cacheDiscoveryResults | This is a mandatory parameter.<br>Set to true if the discovery results should be cached. | Data Type: Boolean<br>Range: NA<br>Default Value: false |
| nrfclient.nrf-client.nrf-client-nfdiscovery.envDiscoveryServicePort | This is a mandatory parameter.<br>Discovery Service Port used for subscribing to management Service. | Data Type: Integer<br>Range: NA<br>Default Value: 5910 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.envManagementServicePort | This is a mandatory parameter.<br>Management Service Port used to send subscriptions to the Management Service. | Data Type: Integer<br>Range: NA<br>Default Value: 5910 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.istioExcludePorts | This is a mandatory parameter.<br>Ports to be added in the "excludeInboundPort" and "excludeOutboundPort" ports in ASM.<br>Add actuator prometheus here for oso read of metrics as comma separated values. | Data Type: Integer<br>Range: NA<br>Default Value: 53 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.hookRestartPolicy | This is a mandatory parameter.<br>Restart Policy for hooks | Data Type: String<br>Range: NA<br>Default Value: Never |
| nrfclient.nrf-client.nrf-client-nfdiscovery.metricPrefix | This is an optional parameter.<br>A prefix that shall be added to all the metric names.By default, this shall contain the value configured in the global section metricPrefix. | Data Type: String<br>Range: NA<br>Default Value: "" |
| nrfclient.nrf-client.nrf-client-nfdiscovery.metricSuffix | This is an optional parameter.<br>A suffix that shall be added to all the metric names.By default, this shall contain the value configured in the global section metricSuffix. | Data Type: String<br>Range: NA<br>Default Value: "" |
| nrfclient.nrf-client.nrf-client-nfdiscovery.istioSidecarQuitUrl | This is an conditional parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. This value shall be considered only when serviceMeshCheck is true. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15000/quitquitquit |
| nrfclient.nrf-client.nrf-client-nfdiscovery.istioSidecarReadyUrl | This is an conditional parameter.<br>The sidecar (istio ready url) when deployed in serviceMesh. This value shall be considered only when serviceMeshCheck is true. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15000/ready |


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**Table 3-15 (Cont.) nrf-client-nfdiscovery**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfdiscovery.nfProfileConfigMode | This is an optional parameter.<br>Flag to switch between "HELM" based or "REST" based nfProfile configuration. | Data Type: String<br>Range: NA<br>Default Value: HELM |
| nrfclient.nrf-client.nrf-client-nfdiscovery.commonCfgClient.enabled | This is an optional parameter.<br>Flag to enable/disable dynamic logging using common configuration service. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| nrfclient.nrf-client.nrf-client-nfdiscovery.commonCfgServer.configServerSvcName | This is an optional parameter.<br>Service name of common configuration service to which the client tries to poll for configuration updates. | Data Type: String<br>Range: NA<br>Default Value: 'config-mgr-svc' |
| nrfclient.nrf-client.nrf-client-nfdiscovery.commonCfgServer.host | This is an optional parameter.<br>The Host name of the Nf Configuration Service name or the common config service.This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: 'config-mgr-svc' |
| nrfclient.nrf-client.nrf-client-nfdiscovery.commonCfgServer.port | This is an optional parameter.<br>The port of the Nf Configuration Service name or the common config service.This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: 9091 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.commonCfgServer.pollingInterval | This is an optional parameter.<br>The interval at which the discovery service shall poll the configuration service to check for updates in msThis attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.dbHost | This is a mandatory parameter.<br>Specifies the Hostname of MySQL that is used to store configurations. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.dbPort | This is a mandatory parameter.<br>Specifies the port number of MySQL. | Data Type: String<br>Range: NA<br>Default Value: 3306 |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.secretName | This is a mandatory parameter.<br>The database secretThis attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |


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**Table 3-15 (Cont.) nrf-client-nfdiscovery**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.dbName | This is a mandatory parameter.<br>The database name which will be used to store the common configuraiton. This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.dbUNameLiteral | This is a mandatory parameter.<br>The db literal name that shall be used as per the secrets configured.This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.dbPwdLiteral | This is a mandatory parameter.<br>The db password literal name that shall be used as per the secrets configured. This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| nrfclient.nrf-client.nrf-client-nfdiscovery.dbConfig.dbEngine | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| nrf-client-nfdiscovery.startupProbe.initialDelaySeconds | This is a mandatory parameter.<br>Tells the kubelet that it should wait second before performing the first probe | Data Type: Integer<br>Range: NA<br>Default Value: 80 |
| nrf-client-nfdiscovery.startupProbe.timeoutSeconds | This is a mandatory parameter.<br>Number of seconds after which the probe times out | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| nrf-client-nfdiscovery.startupProbe.periodSeconds | This is a mandatory parameter.<br>Specifies that the kubelet should perform a readiness probe every xx seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| nrf-client-nfdiscovery.startupProbe.successThreshold | This is a mandatory parameter.<br>Minimum consecutive successes for the probe to be considered successful after having failed | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrf-client-nfdiscovery.startupProbe.failureThreshold | This is a mandatory parameter.<br>When a Pod starts and the probe fails, Kubernetes will try failureThreshold times before giving up | Data Type: Integer<br>Range: NA<br>Default Value: 6 |


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**Table 3-15 (Cont.) nrf-client-nfdiscovery**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfdiscovery.deployment.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to nrf-client-nfdiscovery specific Deployment. | Data Type: String<br>Default Value: null<br>Range: NA |
| nrfclient.nrf-client.nrf-client-nfdiscovery.deployment.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to nrf-client-nfdiscovery specific Deployment. | Data Type: String<br>Default Value: null<br>Range: NA |
| nrfclient.nrf-client.nrf-client-nfdiscovery.service.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to nrf-client-nfdiscovery specific Service. | Data Type: String<br>Default Value: null<br>Range: NA |
| nrfclient.nrf-client.nrf-client-nfdiscovery.service.customExtension.anotations | This is an optional parameter.<br>Custom Annotations that needs to be added to nrf-client-nfdiscovery specific Services. | Data Type: String<br>Default Value: null<br>Range: NA |

**Table 3-16 nrf-client-nfmanagement**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfmanagement.image | This is a mandatory parameter.<br>NRF Client Microservice image name | Data Type: String<br>Range: NA<br>Default Value: nrf-client |
| nrfclient.nrf-client.nrf-client-nfmanagement.imageTag | This is a mandatory parameter.<br>NRF Client Microservice image tag | Data Type: String<br>Range: NA<br>Default Value: helm_nrfclient_tag |
| nrfclient.nrf-client.nrf-client-nfmanagement.extraContainers | This is an optional parameter.<br>This attribute is used to control the usage of extra container when DEBUG tool is ENABLED. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbHookImage.name | This is a mandatory parameter.<br>Image name of dbHook | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbHookImage.tag | This is a mandatory parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm_nrf_client_db_hook_tag |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbHookImage.pullPolicy | This is a mandatory parameter.<br>Indicates if the image needs to be pulled or not | Data Type: ENUM<br>Range: Always, IfNotPresent, Never<br>Default Value: IfNotPresent |
| nrfclient.nrf-client.nrf-client-nfmanagement.global.logStorage | This is an optional parameter.<br>Log storage for ephemeral storage request. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |


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**Table 3-16 (Cont.) nrf-client-nfmanagement**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfmanagement.global.crictlStorage | This is an optional parameter.<br>Critical storage for ephemeral storage request. | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| nrfclient.nrf-client.nrf-client-nfmanagement.global.ephemeralStorageLimit | This is an optional parameter.<br>Ephemeral storage allocation limits | Data Type: Integer<br>Range: NA<br>Default Value: 1024 |
| nrfclient.nrf-client.nrf-client-nfmanagement.envJaegerSamplerParam | This is an Conditional Parameter.<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Trace capture in percentage | Data Type: String<br>Range: NA<br>Default Value: '1' |
| nrfclient.nrf-client.nrf-client-nfmanagement.envJaegerSamplerType | This is an Conditional Parameter.<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Trace Sampler type | Data Type: String<br>Range: NA<br>Default Value: ratelimiting |
| nrfclient.nrf-client.nrf-client-nfmanagement.envJaegerServiceName | This is an Conditional Parameter.<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Jaeger Service Name | Data Type: String<br>Range: NA<br>Default Value: nrf-client-nfmanagement |
| nrfclient.nrf-client.nrf-client-nfmanagement.enablePDBSupport | This is an optional parameter. This flag is to enable and disable Pod Disruption Budget feature.If its enabled, nrf-client-nfmanagement.replicas should be set to 2. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| nrfclient.nrf-client.nrf-client-nfmanagement.replicas | This is a mandatory parameter.<br>Indicates the number of pods, which needs to be created as part of deployment. | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrfclient.nrf-client.nrf-client-nfmanagement.cpuRequest | This is a mandatory parameter. Maximum cpu limit to which it can be requested | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrfclient.nrf-client.nrf-client-nfmanagement.cpuLimit | This is a mandatory parameter.<br>maximum cpu limit | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrfclient.nrf-client.nrf-client-nfmanagement.memoryRequest | This is a mandatory parameter. The amount of memory requested | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| nrfclient.nrf-client.nrf-client-nfmanagement.memoryLimit | This is a mandatory parameter.<br>Memory limit for nrf-client nfmanagement service | Data Type: String<br>Range: NA<br>Default Value: 1Gi |


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**Table 3-16 (Cont.) nrf-client-nfmanagement**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfmanagement.hookRestartPolicy | This is a mandatory parameter.<br>Restart Policy for hooks | Data Type: String<br>Range: NA<br>Default Value: Never |
| nrfclient.nrf-client.nrf-client-nfmanagement.metricPrefix | This is an optional parameter.<br>A prefix that shall be added to all the metric names.By default, this shall contain the value configured in the global section metricPrefix | Data Type: String<br>Range: NA<br>Default Value: "" |
| nrfclient.nrf-client.nrf-client-nfmanagement.metricSuffix | This is an optional parameter.<br>A suffix that shall be added to all the metric names.By default, this shall contain the value configured in the global section metricSuffix | Data Type: String<br>Range: NA<br>Default Value: "" |
| nrfclient.nrf-client.nrf-client-nfmanagement.istioExcludePorts | Ports to be added in the "excludeInboundPort" and "excludeOutboundPort" ports in ASM.<br>Add actuator prometheus here for oso read of metrics as comma separated values. | Data Type: Integer<br>Range: NA<br>Default Value: 53 |
| nrfclient.nrf-client.nrf-client-nfmanagement.istioSidecarQuitUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar quit URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to explicitly shutdown the sidecar container. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15000/quitquitquit |
| nrfclient.nrf-client.nrf-client-nfmanagement.istioSidecarReadyUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar ready URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to check the readiness of the sidecar container during initialization process. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15000/ready |
| nrfclient.nrf-client.nrf-client-nfmanagement.nfProfileConfigMode | This is an optional parameter.<br>Flag to switch between "HELM" based or "REST" based nfProfile configuration | Data Type: String<br>Range: NA<br>Default Value: HELM |
| nrfclient.nrf-client.nrf-client-nfmanagement.commonCfgClient.enabled | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |


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**Table 3-16 (Cont.) nrf-client-nfmanagement**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfmanagement.commonCfgServer.configServerSvcName | This is an optional parameter.<br>Service name of common configuration service to which the client tries to poll for configuration updates | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| nrfclient.nrf-client.nrf-client-nfmanagement.commonCfgServer.host | This is an optional parameter.<br>The Host name of the Nf Configuration Service name or the common config service.This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| nrfclient.nrf-client.nrf-client-nfmanagement.commonCfgServer.port | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>Port of Common Configuration server | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| nrfclient.nrf-client.nrf-client-nfmanagement.commonCfgServer.pollingInterval | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>This is the interval between two subsequent polling requests from config client to server | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.dbHost | This is a mandatory parameter.<br>Specifies the Hostname of MySQL that is used to store configurations. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.dbPort | This is a mandatory parameter.<br>Specifies the port number of MySQL. | Data Type: String<br>Range: NA<br>Default Value: 3306 |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.secretName | This is a mandatory parameter.<br>Specifies the database secret from which the db name, db password and db user name is picked. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.dbName | This is a mandatory parameter.<br>Specifies the database name to be used to store the common configuration. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.leaderPodDbName | This is a mandatory parameter.<br>Name of the database | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.networkDbName | This is a mandatory parameter.<br>Name of the database | Data Type: String<br>Range: NA<br>Default Value: seppdb |


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**Table 3-16 (Cont.) nrf-client-nfmanagement**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.dbUNameLiteral | This is a mandatory parameter.<br>Specifies the database literal name that shall be used as per the <dbConfig.secretName>. | Data Type:<br>Range: NA<br>Default Value: mysql-username |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.dbPwdLiteral | This is a mandatory parameter.<br>Specifies the database password literal name that shall be used as per the <dbConfig.secretName>. | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| nrfclient.nrf-client.nrf-client-nfmanagement.dbConfig.dbEngine | This is a mandatory parameter. Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| nrf-client-nfmanagement.startupProbe.initialDelaySeconds | This is a mandatory parameter. Tells the kubelet that it should wait second before performing the first probe | Data Type: Integer<br>Range: NA<br>Default Value: 20 |
| nrf-client-nfmanagement.startupProbe.timeoutSeconds | This is a mandatory parameter. Number of seconds after which the probe times out | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| nrf-client-nfmanagement.startupProbe.periodSeconds | This is a mandatory parameter. Specifies that the kubelet should perform a readiness probe every xx seconds | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| nrf-client-nfmanagement.startupProbe.successThreshold | This is a mandatory parameter. Minimum consecutive successes for the probe to be considered successful after having failed | Data Type: Integer<br>Range: NA<br>Default Value: 1 |
| nrf-client-nfmanagement.startupProbe.failureThreshold | This is a mandatory parameter. When a Pod starts and the probe fails, Kubernetes will try failureThreshold times before giving up | Data Type: Integer<br>Range: NA<br>Default Value:10 |
| nrfclient.nrf-client.nrf-client-nfmanagement.deployment.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to nrf-client-nfmanagement specific Deployment. | Data Type: String<br>Default Value: null<br>Range: NA |
| nrfclient.nrf-client.nrf-client-nfmanagement.service.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to nrf-client-nfmanagement specific Service. | Data Type: String<br>Default Value: null<br>Range: NA |
| nrfclient.nrf-client.nrf-client-nfmanagement.service.customExtension.anotations | This is an optional parameter.<br>Custom Annotations that needs to be added to nrf-client-nfmanagement specific Services. | Data Type: String<br>Default Value: null<br>Range: NA |


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**Table 3-16 (Cont.) nrf-client-nfmanagement**

| Name | Description | Details |
|---|---|---|
| nrfclient.nrf-client.nrf-client-nfmanagement.deployment.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to nrf-client-nfmanagement specific Deployment. | Data Type: String<br>Default Value: null<br>Range: NA |
| trafficPrioritization.enabled | This is a mandatory parameter. This parameter is used to enable or disable the message priority feature. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| trafficPrioritization.incomingPriorityHeader | This is a mandatory parameter.<br>This is the header name for the incoming requests. | DataType: String<br>Default Value: 3gpp-sbi-message-priority |
| trafficPrioritization.outgoingPriorityHeader | This is a mandatory parameter.<br>This is the header name for the outgoing request. | DataType: String<br>Default Value: 3gpp-sbi-message-priority |
| trafficPrioritization.messageTypes | This is a mandatory parameter. This is the message priority value for rest of the message request types that are not nfSubscribe Message types. | DataType: Object<br>Default Value: NA |
| trafficPrioritization.nfSubscribeMessageTypes | This is a mandatory parameter. This is Message priority value for subscribe autonomous message request types, all autonomous operation associated to nrfClientSubscribeTypes. | DataType: Object<br>Default Value: NA |
| trafficPrioritization.nfSubscribeMessageTypes.messageType | This is a mandatory parameter. This is the MessageType value for the nfSubscribeMessageTypes. | DataType: string<br>Default Value: NA |
| trafficPrioritization.messageTypes.messageType | This is a mandatory parameter. This is MessageType value of the messageType object. | DataType: String<br>Default Value: NA |
| trafficPrioritization.nfSubscribeMessageTypes.subscribeNfTypes.nfType | This is a mandatory parameter. This is NfType value for the subscribeNfType object. | DataType:String<br>Default Value: NA |
| trafficPrioritization.nfSubscribeMessageTypes.subscribeNfTypes.priority | This is a mandatory parameter. This is Priority value for the subscribeNfType object. | DataType: String<br>Default Value: NA |
| trafficPrioritization.messageTypes.priority | This is a mandatory parameter. This is Priority value of the messageType object. | DataType: String<br>Default Value: NA |
| trafficPrioritization.nfSubscribeMessageTypes.subscribeNfTypes | This is a mandatory parameter. This is subscribeNfTypes list of nfSubscribeMessageTypes. | DataType: Object<br>Default Value: NA |

### nrf-client Global Parameters


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**Table 3-17 nrf-client Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| nfName | This is a mandatory parameter<br>nfName is used as a prefix in service names of nrf client's service and other services it connects to. | Data Type: String<br>Range: NA<br>Default Value: sepp |
| nrfClientNfDiscoveryEnable | This is a mandatory parameter<br>Global control to enable or disable deployment of NF Discovery service. Enable it if on demand discovery of NF is required. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| nrfClientNfManagementEnable | This is a mandatory parameter.<br>Global control to enable or disable deployment of NF Management service. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| alternateRouteServiceEnable | This is a mandatory parameter.<br>Global parameter to mention if alternate-route service is available (deployed) or not. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| altServiceHTTP2Enabled | This is a mandatory parameter.<br>enable HTTP2 support for alternate service requests. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| altServiceReqTimeout | This is a mandatory parameter.<br>http timeout value. Unit : milliseconds | Data Type: Integer<br>Range: NA<br>Default Value: 3000 |
| altServiceLookupInterval | This is a mandatory parameter.<br>Alternate service lookup interval | Data Type: Integer<br>Range: NA<br>Default Value: 3000 |
| envJaegerAgentHost | This is a mandatory parameter.<br>Jaeger tracing host | Data Type: String<br>Range: NA<br>Default Value: ' ' |
| envJaegerAgentPort | This is a mandatory parameter.<br>Jaeger tracing port | Data Type: Integer<br>Range: NA<br>Default Value: 6831 |
| nrfClientNodePort | This is a mandatory parameter.<br>Provide value for NodePort | Data Type: Integer<br>Range: NA<br>Default Value: 0 |
| vendor | This is a mandatory parameter.<br>Vendor name | Data Type: String<br>Range: NA<br>Default Value: Oracle |
| applicationName | This is a mandatory parameter.<br>Application name | Data Type: String<br>Range: NA<br>Default Value: nrf-client |
| metricPrefix | This is a mandatory parameter.<br>Prefix for Metrics | Data Type: String<br>Range: NA<br>Default Value: " " |


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**Table 3-17 (Cont.) nrf-client Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| metricSuffix | This is a mandatory parameter.<br>Suffix for Metrics | Data Type: String<br>Range: NA<br>Default Value: " " |
| nrfClientCommonServicePort | This is a mandatory parameter.<br>Common service port | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| prometheusScrapingConfig.enabled | This is a mandatory parameter.<br>flag to enable or disable Prometheus scraping | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| prometheusScrapingConfig.path | This is a mandatory parameter.<br>Path for Prometheus scraping | Data Type: String<br>Range: NA<br>Default Value: /actuator/prometheus |
| configServerEnable | This is a mandatory parameter.<br>Flag to enable or Disable Config server<br>If nrfclientDisable mode is set/ Roaming-Hub mode is set, set the value to false | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| configServerFullNameOverride | This is a mandatory parameter.<br>Config-Server Service full name. Shall be used as {{ ReleaseName }}-configServerFullNameOverride | Data Type: String<br>Range: NA<br>Default Value: ocpm-config |
| envMysqlHost | This is a mandatory parameter.<br>MySQL Host name | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| envMysqlPort | This is a mandatory parameter.<br>MySQL Port number | Data Type: String<br>Range: NA<br>Default Value: 3306 |
| dbCredSecretName | This is a mandatory parameter.<br>MySQL Secret name | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| appinfoServiceEnable | This is a mandatory parameter.<br>flag to enable or disable appinfo service.<br>**Note**: For the Roaming hub mode, the value must be set to false. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| performanceServiceEnable | This is a mandatory parameter.<br>flag to enable or disable performance service | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| deploymentNrfClientService.envNfNamespace | This is an optional parameter.<br>namespace of Services to be monitored by performance service.If no services are to be monitored, envNfNamespace can be left blank | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |


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**Table 3-17 (Cont.) nrf-client Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| deploymentNrfClientService.envNfType | This is an optional parameter.<br>Name of Service to be monitored by performance service.<br>If no services are to be monitored, envNfType can be left blank | Data Type: String<br>Range: NA<br>Default Value: sepp |
| deploymentNrfClientService.envConsumeSvcName | This is an optional parameter.<br>Name of consumer Service to be monitored by performance service. | Data Type: String<br>Range: NA<br>Default Value: nsepp-telescopic:ocsepp-release-plmn-ingress-gateway |
| deploymentNrfClientService.envEgressGatewayFullnameOverride | This is a mandatory parameter.<br>Egress gateway Host. | Data Type: String<br>Range: NA<br>Default Value: plmn-egress-gateway |
| deploymentNrfClientService.envEgressGatewayPort | This is a mandatory parameter.<br>Egress gateway port number | Data Type: Integer<br>Range: NA<br>Default Value: 8080 |
| deploymentNrfClientService.nodeSelectorEnabled | This is a mandatory parameter.<br>Flag to enable or disable node selector. | Data Type: Boolean<br>Range: True or False<br>Default Value: false |
| deploymentNrfClientService.nodeSelectorKey | This is a mandatory parameter.<br>NodeSelector key configuration at the microservice level when helm Based Configuration Node Selector Api Version is set to v1 then this configuration is used. And this configuration does not depend on nodeSelection flag, once configured this is used for all microservices. | Data Type: String<br>Range: NA<br>Default Value: cnf |
| deploymentNrfClientService.nodeSelectorValue | This is a mandatory parameter.<br>NodeSelector Value configuration at the global level when helmBasedConfigu rationNodeSelectorApiVersion is set to v1 then this configuration is used. And this configuration does not depend on nodeSelection flag, once configured this is used for all microservices. | Data Type: String<br>Range: NA<br>Default Value: ocsepp |
| privilegedDbCredSecretName | This is a mandatory parameter.<br>K8s Secret containing Database/ user/password for DB Hooks for creating tables | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| releaseDbName | This is a mandatory parameter<br>MySQL Release DB Name | Data Type: String<br>Range: NA<br>Default Value: seppdb |


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**Table 3-17 (Cont.) nrf-client Global Parameters**

| Parameter | Description | Details |
|---|---|---|
| leaderPodDbName | This is a mandatory parameter.<br>(if multipod is supported for NRF client)<br>Specifies the database name for LeaderPodDb database. This database is unique per site | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| networkDbName | This is a mandatory parameter.<br>(if multipod is supported for NRF client)<br>Specifies the network database name. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| discoveryHonoringRequesterNfTypeEnabled | This is a mandatory parameter.<br>Flag to determine if the Requester-Nf-Type parameter is to be taken from query parameter or not. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |

### Config Map Configuration

**Table 3-18 Config Map nrf-client Configuration**

| Parameter | Description |
|---|---|
| configmapApplicationConfig.profile.primaryNrfApiRoot | Primary NRF Hostname and Port |
| configmapApplicationConfig.profile.nrfScheme | Scheme of primary and secondary NRF http or https. |
| configmapApplicationConfig.profile.retryAfterTime | Default downtime(in Duration) of an NRF detected to be unavailable. |
| configmapApplicationConfig.profile.nrfClientType | The NfType of the NF registering |
| configmapApplicationConfig.profile.nrfClientSubscribeTypes | The NFType for which the NF wants to subscribe to the NRF. |
| configmapApplicationConfig.profile.appProfiles | The NfProfile of the NF to be registered with NRF. |
| configmapApplicationConfig.profile.registrationRetryInterval | Retry Interval after a failed autonomous registration request. |
| configmapApplicationConfig.profile.subscriptionRetryInterval | Retry Interval after a failed autonomous subscription request. |
| configmapApplicationConfig.profile.discoveryRetryInterval | Retry Interval after a failed autonomous discovery request. |
| configmapApplicationConfig.profile.renewalTimeBeforeExpiry | Time Period(seconds) before the Subscription Validity time expires. |
| configmapApplicationConfig.profile.validityTime | The default validity time(days) for subscriptions. |
| configmapApplicationConfig.profile.enableSubscriptionAutoRenewal | Enable Renewal of Subscriptions automatically. |


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**Table 3-18 (Cont.) Config Map nrf-client Configuration**

| Parameter | Description |
|---|---|
| configmapApplicationConfig.profile.nfHeartbeatRate | This value specifies the rate at which the NF shall heartbeat with the NRF. The value shall be configured in terms of percentage(1-100). if the heartbeatTimer is 60s, then the NF shall heartbeat at nfHeartBeatRate * 60/100. |
| configmapApplicationConfig.profile.discoveryRefreshInterval | This attribute defines the maximum ValidityPeriod at which the discovery results shall be refreshed.<br>The ValidityPeriod received in the discovery response shall be capped at this value.<br>If ValidityPeriod received in discovery results is 60s. The validityPeriod shall be capped to 10s as per configuration.<br>If ValidityPeriodn received in discovery results is 5s. No capping shall be applied and valdiityPeriod shall be considered as 5s.<br>Unit : seconds |
| configmapApplicationConfig.profile.discoveryDurationBeforeExpiry | This attributes defines the rate at which the NF shall resend discovery requests to NRF. The value shall be configured in terms of percentage(1-100).<br>if the discovery ValidityPeriod is 10s(after applying the capped value of discoveryRefreshInterval), then the discovery requests shall be sent at discoveryDurationBeforeExpiry * 10/100. |
| configmapApplicationConfig.profile.acceptAdditionalAttributes | Enable additionalAttributes as part of 29.510 Release 15.5. |
| configmapApplicationConfig.profile.retryForCongestion | The duration(seconds) after which nrf-client should retry to a NRF server found to be congested. |
| configmapApplicationConfig.profile.supportedDataSetId | The data-set value to be used in queryParams for NFs autonomous/on-demand discovery. |
| configmapApplicationConfig.profile.useAlternateScpOnAlternateRouting | Enable use SCP on alternate routing service. |
| configmapApplicationConfig.profile.requestTimeoutGracePeriod | The grace period at nrf-client for which it shall wait for a response from the NRF. This value shall be added to value configured at configmapApplicationConfig.profile.requestTimeout.<br>Unit : seconds<br>NOTE: The setting support for *2s* (means in seconds) or *50ms* (means in milliseconds) format since Release 1.6.x |

## 3.1.12 config-server

This section includes information about the config-server parameters of the SEPP.


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**Table 3-19 config-server**

| Name | Description | Details |
|---|---|---|
| nrfclient.config-server.extraContainers | This is an optional parameter.<br>This attribute is used to control the usage of extra container when DEBUG tool is ENABLED. | Data Type:<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: |
| nrfclient.config-server.enabled | This is a mandatory parameter.<br>flag to enable or disable config-server | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| nrfclient.config-server.image | This is a mandatory parameter.<br>config-server microservice image name. | Data Type: String<br>Range: NA<br>Default Value: occnp/oc-config-server |
| nrfclient.config-server.imageTag | This is a mandatory parameter.config-server Microservice image tag | Data Type: String<br>Range: NA<br>Default Value: helm_nrfclient_config_server_tag |
| nrfclient.config-server.fullnameOverride | This is a mandatory parameter.<br>Full name to be used for configuration server service | Data Type: String<br>Range: NA<br>Default Value: occnp-config-server |
| nrfclient.config-server.installedChartVersion | This is a mandatory parameter.<br>Chart version to be read by hooks | Data Type: String<br>Range: NA<br>Default Value: '' |
| nrfclient.config-server.envJaegerServiceName | This is an Conditional Parameter<br>Note: You must customize this parameter only when NRF client services are enabled.<br>Jaeger Service Name | Data Type: String<br>Range: NA<br>Default Value: occne-tracer-jaeger-agent.occne-infra |
| nrfclient.config-server.nfInstanceId | This is an Conditional Parameter<br>This is the NfInstanceId of NF that will get deployed.<br>This shall be used in the profile being registered. | Data Type: String<br>Range: NA<br>Default Value: 9faf1bbc-6e4a-4454-a507-aef01a101a06 |
| nrfclient.config-server.envMysqlDatabase | This is a mandatory parameter.<br>MySQL Database to be used. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| nrfclient.config-server.replicas | This is a mandatory parameter.<br>Indicates the number of pods, which needs to be created as part of deployment. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| nrfclient.config-server.minReplicas | This is a mandatory parameter.<br>Min replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| nrfclient.config-server.maxReplicas | This is a mandatory parameter.<br>Max replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range: NA<br>Default Value: 2 |


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**Table 3-19 (Cont.) config-server**

| Name | Description | Details |
|---|---|---|
| nrfclient.config-server.averageCpuUtil | This is a mandatory parameter.<br>CPU utilisation limit for autoscaling (creating HPA) | Data Type: Integer<br>Range: NA<br>Default Value: 70 |
| nrfclient.config-server.dbConfig.dbEngine | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| nrfclient.config-server.global.istioSidecarQuitUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar quit URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to explicitly shutdown the sidecar container. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15020/quitquitquit |
| nrfclient.config-server.global.istioSidecarReadyUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar ready URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to check the readiness of the sidecar container during initialisation process. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15020/healthz/ready |
| nrfclient.config-server.global.logStorage | This is an optional parameter.<br>Log storage for ephemeral storage request | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| nrfclient.config-server.global.crictlStorage | This is an optional parameter.<br>Critical storage for ephemeral storage request | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| nrfclient.config-server.resources.limits.cpu | This is an optional parameter.<br>CPU Limit for config-server service | Data Type:<br>Range:<br>Default Value: 1 |
| nrfclient.config-server.resources.limits.memory | This is an optional parameter.<br>Memory Limit for config-server service | Data Type:<br>Range:<br>Default Value: 1Gi |
| nrfclient.config-server.resources.limits.ephemeralStorage | This is an optional parameter.<br>Ephemeral storage allocation limits | Data Type:<br>Range:<br>Default Value: 1Gi |
| nrfclient.config-server.resources.requests.cpu | This is an optional parameter.<br>Requested CPU usage for config-server pod to come up | Data Type:<br>Range:<br>Default Value: 1 |


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**Table 3-19 (Cont.) config-server**

| Name | Description | Details |
|---|---|---|
| nrfclient.config-server.resources.requests.memory | This is an optional parameter.<br>Requested memory usage for config-server pod to come up | Data Type:<br>Range:<br>Default Value: 1Gi |
| nrfclient.config-server.maxUnavailable | This is an optional parameter.<br>Number of replicas that can go down during a disruption | Data Type: String<br>Range: NA<br>Default Value: 25% |
| nrfclient.config-server.servicePcfConfig.type | This is a mandatory parameter.<br>Kubernetes service type for exposing config-server deployment | Data Type: String<br>Range: NA<br>Default Value: NodePort |
| nrfclient.config-server.service.customExtension.anotations | This is an optional parameter.<br>Custom Annotations that needs to be added to config server specific Services. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| nrfclient.config-server.deployment.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to config server specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| nrfclient.config-server.deployment.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to config server specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| nrfclient.config-server.service.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to config server specific Service. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| nrfclient.config-server.startupProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |
| nrfclient.config-server.startupProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| nrfclient.config-server.startupProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-19 (Cont.) config-server**

| Name | Description | Details |
|---|---|---|
| nrfclient.config-server.startupProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.config-server.startupProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 6<br>: NA |
| nrfclient.config-server.readinessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| nrfclient.config-server.readinessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| nrfclient.config-server.readinessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| nrfclient.config-server.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.config-server.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-19 (Cont.) config-server**

| Name | Description | Details |
|---|---|---|
| nrfclient.config-server.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |
| nrfclient.config-server.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| nrfclient.config-server.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| nrfclient.config-server.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.config-server.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |

## 3.1.13 appinfo

This section includes information about the appinfo parameters of the SEPP.


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**Table 3-20 appinfo**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.appinfo.istioSidecarQuitUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar quit URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to explicitly shutdown the sidecar container. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15020/quitquitquit |
| nrfclient.appinfo.istioSidecarReadyUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar ready URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to check the readiness of the sidecar container during initialization process. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15020/ready |
| nrfclient.appinfo.extraContainers | This is an optional parameter.<br>This attribute is used to control the usage of extra container when DEBUG tool is ENABLED. | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| nrfclient.appinfo.enabled | This is a mandatory paramenet<br>Flag to enable or disable appinfo service | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| nrfclient.appinfo.image | This is a mandatory parameter.<br>Name of the docker image of app info service | Data Type: String<br>Range: NA<br>Default Value: occnp/oc-app-info |
| nrfclient.appinfo.imageTag | This is a mandatory parameter.<br>Tag of the image of app info service | Data Type: String<br>Range: NA<br>Default Value: helm_nrfclient_app_info_tag |
| nrfclient.appinfo.imagePullPolicy | This is a mandatory parameter.<br>Indicates if the image needs to be pulled or not. | Data Type: ENUM<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| nrfclient.appinfo.dbHookImage.name | This is a mandatory parameter.<br>Image name of dbHook | Data Type:<br>Range:<br>Default Value: common_config_hook |
| nrfclient.appinfo.dbHookImage.tag | This is a mandatory parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm_nrf_client_db_hook_tag |


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**Table 3-20 (Cont.) appinfo**

| Parameter | Description | Details |
|---|---|---|
| `nrfclient.appinfo.dbHookImage.pullPolicy` | This is a mandatory parameter.<br>Indicates if the image needs to be pulled or not | Data Type: ENUM<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| `nrfclient.appinfo.replicas` | This is a mandatory parameter.<br>Indicates the number of pods, which needs to be created as part of deployment. | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| `nrfclient.appinfo.minReplicas` | This is a mandatory parameter.<br>Min replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range:<br>Default Value: 2 |
| `nrfclient.appinfo.maxReplicas` | This is a mandatory parameter.<br>Max replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Range:<br>Default Value: 2 |
| `nrfclient.appinfo.prometheusUrl` | This is a mandatory parameter.<br>Prometheus server k8s service URL Information | Data Type: String<br>Default Value: http://occne-kube-prom-stack-kube-prometheus.occne-infra:80/clustername/prometheus<br>Note: The user must configure the actual name of the cluster in place of /clustername. |
| `nrfclient.appinfo.alertmanagerUrl` | This is a mandatory parameter.<br>Alert manager k8s service URL Information | Data Type: String<br>Default Value: http://occne-kube-prom-stack-kube-prometheus.occne-infra:80/clustername/alertmanager<br>Note: The user must configure the actual name of the cluster in place of /clustername. |
| `nrfclient.appinfo.tagNamespace` | This is a mandatory parameter.<br>Specifies the Kubernetes namespace. | Data Type: String<br>Range: NA<br>Default Value: namespace<br>**Note**:<br>• In OCI deployment, the value must be k8Namespace.<br>• In non OCCNE deployement, the value must be kubernetes_namespace. |
| `nrfclient.appinfo.global.logStorage` | This is an optional parameter.<br>Log storage for ephemeral storage request | Data Type:<br>Range:<br>Default Value: 32 |
| `nrfclient.appinfo.global.crictlStorage` | This is an optional parameter.<br>Critical storage for ephemeral storage request | Data Type:<br>Range:<br>Default Value: 32 |
| `nrfclient.appinfo.resources.limits.cpu` | This is an optional parameter.<br>CPU Limit for app info pod | Data Type:<br>Range:<br>Default Value: 1 |


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**Table 3-20 (Cont.) appinfo**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.appinfo.resources.limits.memory | This is an optional parameter.<br>Memory Limit for app info pod | Data Type:<br>Range:<br>Default Value: 2Gi |
| nrfclient.appinfo.resources.limits.ephemeralStorage | This is an optional parameter.<br>Ephemeral storage allocation limits | Data Type:<br>Range:<br>Default Value: 1Gi |
| nrfclient.appinfo.resources.requests.cpu | This is an optional parameter.<br>Requested CPU usage for app info pod to come up | Data Type:<br>Range:<br>Default Value: 1 |
| nrfclient.appinfo.resources.requests.memory | This is an optional parameter.<br>Requested memory usage for app info pod to come up | Data Type:<br>Range:<br>Default Value: 1Gi |
| nrfclient.appinfo.resources.maxUnavailable | This is an optional parameter.<br>Number of replicas that can go down during a disruption | Data Type:<br>Range:<br>Default Value: 25% |
| nrfclient.appinfo.serviceAccountName | This is an optional parameter.<br>Name of Service account | Data Type:<br>Range:<br>Default Value: ' ' |
| nrfclient.appinfo.commonServiceName | This is an optional parameter.<br>This is the common service name that is currently requesting for configuration updates from server | Data Type: String<br>Range: NA<br>Default Value: app-info |
| nrfclient.appinfo.log.level.appinfo | This is an optional parameter.<br>Identifies log level of app info | Data Type: ENUM<br>Range: INFO, DEBUG, ERROR<br>Default Value: INFO |
| nrfclient.appinfo.commonCfgClient.enabled | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: True or False<br>Default Value: true |
| nrfclient.appinfo.commonCfgServer.configServerSvcName | This is an optional parameter.<br>Service name of common configuration service to which the client tries to poll for configuration updates | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| nrfclient.appinfo.commonCfgServer.host | This is an optional parameter.<br>The Host name of the Nf Configuration Service name or the common config service.This attribute shall be configured only if commonCfgClient.enabled is set to true. | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |


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**Table 3-20 (Cont.) appinfo**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.appinfo.commonCfgServer.port | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>Port of Common Configuration server | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| nrfclient.appinfo.commonCfgServer.pollingInterval | This is the interval between two subsequent polling requests from configuration client to server | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| nrfclient.appinfo.commonCfgServer.connectionTimeout | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>This is the limit for connection to be established between config client and server | Data Type: Integer<br>Range: NA<br>Default Value: 10000 #ms |
| nrfclient.appinfo.dbConfig.dbHost | This is a mandatory parameter.<br>Specifies the Hostname of MySQL that is used to store configurations. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| nrfclient.appinfo.dbConfig.dbPort | This is a mandatory parameter.<br>Specifies the port number of MySQL. | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |
| nrfclient.appinfo.dbConfig.secretName | This is a mandatory parameter.<br>Specifies the database secret from which the db name, db password and db user name is picked. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| nrfclient.appinfo.dbConfig.dbName | This is a mandatory parameter.<br>Specifies the database name to be used to store the common configuration. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| nrfclient.appinfo.dbConfig.dbUNameLiteral | This is a mandatory parameter.<br>Specifies the database literal name that shall be used as per the <dbConfig.secretName>. | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| nrfclient.appinfo.dbConfig.dbPwdLiteral | This is a mandatory parameter.<br>Specifies the database password literal name that shall be used as per the <dbConfig.secretName>. | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| nrfclient.appinfo.dbConfig.dbEngine | This is a mandatory parameter. Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: ENUM<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |


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**Table 3-20 (Cont.) appinfo**

| Parameter | Description | Details |
|---|---|---|
| `nrfclient.appinfo.core_services.sepp` | This is an optional parameter.<br>Specifies the list of SEPP services to be monitored. | Data Type: String<br>Range: NA<br>Default Value: [ ] |
| `nrfclient.appinfo.infraServices` | This is a conditional parameter.<br>Specifies the URI for the health check of InfraServices that need to be monitored.<br>Examples:<br>http://mysql- cluster-db- monitor-svc.vzw1- cndbtier:8080 / actuator/ health<br>http://mysql- cluster-db-replication- svc.vzw1- cndbtier/ actuator/ health<br>Uncomment this parameter and set this parameter to an empty array if any one of following conditions is true:<br>• Deploying on OCCNE 1.4 or lower version<br>• Not deploying on OCCNE<br>• Do not wish to monitor infra services such as db-monitor service | Data Type: String<br>Range: NA<br>Default Value: [ ] |
| `nrfclient.appinfo.service.customExtension.labels` | This is an optional parameter.<br>Custom Labels that needs to be added to appinfo specific Service. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.appinfo.service.customExtension.anotations` | This is an optional parameter.<br>Custom Annotations that needs to be added to appinfo specific Services. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.appinfo.deployment.customExtension.labels` | This is an optional parameter.<br>Custom Labels that needs to be added to appinfo specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.appinfo.deployment.customExtension.annotations` | This is an optional parameter.<br>Custom Annotations that needs to be added to appinfo specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.appinfo.startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 60<br>Range: NA |


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**Table 3-20 (Cont.) appinfo**

| Parameter | Description | Details |
|---|---|---|
| `nrfclient.appinfo.startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| `nrfclient.appinfo.startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| `nrfclient.appinfo.startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `nrfclient.appinfo.startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>: NA |
| `nrfclient.appinfo.readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `nrfclient.appinfo.readinessProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `nrfclient.appinfo.readinessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |


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**Table 3-20 (Cont.) appinfo**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.appinfo.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.appinfo.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| nrfclient.appinfo.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| nrfclient.appinfo.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| nrfclient.appinfo.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 3<br>Range: NA |
| nrfclient.appinfo.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.appinfo.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |


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## 3.1.14 Pre-install hook

This section includes information about the Pre-install hook parameters of the SEPP.

**Table 3-21 Pre-install hook**

| Parameter | Description | Details |
|---|---|---|
| `pre-install-hook.image.repository` | This is a mandatory parameter.<br>Repository location of image | Data Type: String<br>Range: NA<br>Default Value: reg-1 |
| `pre-install-hook.image.name` | This is a mandatory parameter.<br>Name of image | Data Type: String<br>Range: NA<br>Default Value: ocsepp-pre-install-hook |
| `pre-install-hook.image.tag` | This is a mandatory parameter.<br>Tag of image | Data Type: String<br>Range: NA<br>Default Value: helm-tag |
| `pre-install-hook.image.pullPolicy` | This is a mandatory parameter.<br>This setting indicates if the image needs to be pulled or not | Data Type: String<br>Range: NA<br>Default Value: Always |

## 3.1.15 update-db

This section includes information about the update-db parameters of the SEPP.

**Table 3-22 update-db**

| Parameter | Description | Details |
|---|---|---|
| `update-db.istioSidecarQuitUrl` | This is a mandatory parameter.<br>The sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/quitquitquit |
| `update-db.istioSidecarReadyUrl` | This is a mandatory parameter.<br>The sidecar (istio ready url)when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Range: NA<br>Default value: http://127.0.0.1:15020/ready |
| `update-db.image.repository` | This is a mandatory parameter.<br>Repository location of image | Data Type: String<br>Range: NA<br>Default Value: reg-1 |
| `update-db.image.name` | This is a mandatory parameter.<br>Name of image | Data Type: String<br>Range: NA<br>Default Value: ocsepp-update-db |
| `update-db.image.tag` | This is a mandatory parameter.<br>Tag of image | Data Type: String<br>Range: NA<br>Default Value: helm-tag |


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**Table 3-22 (Cont.) update-db**

| Parameter | Description | Details |
|---|---|---|
| `update-db.image.pullPolicy` | This is a mandatory parameter..<br>This setting indicates if the image needs to be pulled or not. | Data Type: String<br>Range: NA<br>Default Value: Always |
| `update-db.hookAlerts.prometheus.fqdn` | This is a mandatory parameter.<br>This parameter defines the fqdn for prometheus service.<br>Incorrect value may result in timeout failures during install, upgrade or rollback. | Data Type: String<br>Range: NA<br>Default Value: occne-kube-prom-stack-kube-prometheus.<br>Format : servicename.namespace |
| `update-db.hookAlerts.prometheus.port` | This is a mandatory parameter..<br>This parameter defines the port number for prometheus service.<br>Incorrect value may result in timeout failures during install, upgrade or rollback. | Data Type: Integer<br>Range: NA<br>Default Value: 80 |
| `update-db.hookAlerts.prometheus.pathToFetchAlertManagerEndPoint` | This is a mandatory parameter.<br>This parameter defines the endpoint for prometheus actuator service. | Data Type: String<br>Range: NA<br>Default Value: /clustername/prometheus/api/v1/alertmanagers<br>**Note**: The user must configure the actual name of the cluster in place of /clustername. |
| `update-db.hookAlerts.alertManagerContainerPort` | This is a mandatory parameter.<br>This parameter defines the alert manager container port number. | Data Type: Integer<br>Range: NA<br>Default Value: 9093 |
| `update-db.hookAlerts.customAlertExpiryEnabled` | This is a mandatory parameter.<br>Following variable indicates, alert expiry occurs according to resolve_timeout value of AlertManager<br>and upgrade/rollback hooks shall clear the alerts as applicable.<br>If it is set to true, auto alert clear shall occur after customAlertExpiryDuration value and upgrade/rollback hooks may not clear the alerts. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `update-db.hookAlerts.customAlertExpiryDuration` | This is a mandatory parameter.<br>The custom duration (in minutes) post which Alert gets auto cleared, applicable only when customAlertExpiryEnabled is set to true. | Data Type: Integer<br>Range: NA<br>Default Value: 60 |


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## 3.1.16 perf-info

This section includes information about the perf-info of the SEPP.

**Table 3-23 perf-info**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.perf-info.image | This is a mandatory parameter.<br>perf-info microservice image name. | Data Type: String<br>Range: NA<br>Default Value: occnp/oc-perf-info |
| nrfclient.perf-info.imageTag | This is a mandatory parameter.<br>perf-info microservice image tag name. | Data Type: String<br>Range: NA<br>Default Value: helm_nrfclient_perf_info_tag |
| nrfclient.perf-info.istioSidecarReadyUrl | This is an conditional parameter.<br>Applicable only when serviceMeshCheck parameter is set to true.<br>Specifies the sidecar ready URL (envoy container quite URL) if deployed with serviceMesh. This URL is needed to check the readiness of the sidecar container during initialization process. | Data Type: String<br>Range: NA<br>Default Value: http://127.0.0.1:15020/ready |
| nrfclient.perf-info.dbHookImage.name | This is a mandatory parameter.<br>Image name of dbHook | Data Type: String<br>Range: NA<br>Default Value: common_config_hook |
| nrfclient.perf-info.dbHookImage.tag | This is a mandatory parameter.<br>Image tag name of dbHook | Data Type: String<br>Range: NA<br>Default Value: helm_nrf_client_db_hook_tag |
| nrfclient.perf-info.dbHookImage.pullPolicy | This is a mandatory parameter.<br>Indicates if the image needs to be pulled or not | Data Type: ENUM<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| nrfclient.perf-info.extraContainers | This is an optional parameter<br>Flag to enable addition of container configuration under extraContainersTpl to all the deployments under perf-info umbrella. This parameter is used for debug container template | Data Type: ENUM<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| nrfclient.perf-info.service_namespace | This is a mandatory parameter.<br>Namespace in which perf-info will be deployed. | Data Type: String<br>Range: NA<br>Default Value: DEPLOYMENT_NAMESPACE |
| nrfclient.perf-info.envMysqlDatabase | This is a mandatory parameter.<br>MySQL Database to be used. | Data Type: String<br>Range: NA<br>Default Value: seppdb |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.perf-info.replicas | This is a mandatory parameter.<br>Replicas for perf-info. This is exact value without scaling | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| nrfclient.perf-info.imagepullPolicy | This is a mandatory parameter.<br>Indicates if the image needs to be pulled or not | Data Type: ENUM<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| nrfclient.perf-info.service.port | This is a mandatory parameter.<br>Kubernetes service port for exposing perf-info deployment | Data Type: Integer<br>Range: NA<br>Default Value: 5905 |
| nrfclient.perf-info.global.logStorage | This is an optional parameter.<br>Log storage for ephemeral storage request | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| nrfclient.perf-info.global.crictlStorage | This is an optional parameter.<br>Critical storage for ephemeral storage request | Data Type: Integer<br>Range: NA<br>Default Value: 32 |
| nrfclient.perf-info.resources.limits.ephemeralStorage | This is an optional parameter.<br>Ephemeral Storage allocation limits | Data Type: String<br>Range: NA<br>Default Value: 1Gi |
| nrfclient.perf-info.resources.limits.cpu | This is an optional parameter.<br>CPU Limit for perf-info service | Data Type: Integer<br>Range: NA<br>Default Value: 2 |
| nrfclient.perf-info.resources.limits.memory | This is an optional parameter.<br>Memory Limit for perf-info service | Data Type: String<br>Range: NA<br>Default Value: 4Gi |
| nrfclient.perf-info.resources.requests.cpu | This is an optional parameter.<br>CPU Requested for perf-info service | Data Type:<br>Range: NA<br>Default Value: 2 |
| nrfclient.perf-info.resources.requests.memory | This is an optional parameter.<br>Memory Requested for perf-info service | Data Type:<br>Range: NA<br>Default Value: 200Mi |
| nrfclient.perf-info.maxUnavailable | This is an optional parameter.<br>Number of replicas that can go down during a disruption | Data Type:<br>Range: NA<br>Default Value: '25%' |
| nrfclient.perf-info.affinity | This is an Optional Parameter<br>Pod Affinity configurations | Data Type: String<br>Range: NA<br>Default Value: |
| nrfclient.perf-info.commonCfgClient.enabled | This is an optional parameter.<br>Set it to true if persistent configuration needs to be enabled. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| nrfclient.perf-info.commonCfgServer.configServerSvcName | This is an optional parameter.<br>Service name of common configuration service to which the client tries to poll for configuration updates | Data Type: String<br>Range: NA<br>Default Value: 'config-mgr-svc' |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.perf-info.commonCfgServer.host | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>Host name of Common configuration server to which client tries to poll for configuration updates.<br>This value is picked up if commonCfgServer.configServerSvcName is not available | Data Type: String<br>Range: NA<br>Default Value: config-mgr-svc |
| nrfclient.perf-info.commonCfgServer.port | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>Port of Common Configuration server | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| nrfclient.perf-info.commonCfgServer.pollingInterval | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>This is the interval between two subsequent polling requests from config client to server | Data Type: Integer<br>Range: NA<br>Default Value: 5000 |
| nrfclient.perf-info.commonCfgServer.connectionTimeout | This is a mandatory parameter. (Applicable only if commonCfgClient.enabled is set to true)<br>This is the limit for connection to be established between config client and server | Data Type: Integer<br>Range: NA<br>Default Value: 10000 |
| nrfclient.perf-info.commonServiceName | This is a mandatory parameter.<br>This is the common service name that is currently requesting for configuration updates from server | Data Type: String<br>Range: NA<br>Default Value: perf-info |
| nrfclient.perf-info.log.level.perfinfo | This is an optional parameter.<br>Log level for perf-info service | Data Type: ENUM<br>Range: NA<br>Default Value: INFO |
| nrfclient.perf-info.dbConfig.dbHost | This is a mandatory parameter.<br>Specifies the Hostname of MySQL that is used to store configurations. | Data Type: String<br>Range: NA<br>Default Value: sepp-mysql-svc |
| nrfclient.perf-info.dbConfig.dbPort | This is a mandatory parameter.<br>Specifies the port number of MySQL. | Data Type: Integer<br>Range: NA<br>Default Value: 3306 |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.perf-info.dbConfig.secretName | This is a mandatory parameter.<br>Specifies the database secret from which the db name, db password and db user name is picked. | Data Type: String<br>Range: NA<br>Default Value: ocsepp-mysql-cred |
| nrfclient.perf-info.dbConfig.dbName | This is a mandatory parameter.<br>Specifies the database name to be used to store the common configuration. | Data Type: String<br>Range: NA<br>Default Value: seppdb |
| nrfclient.perf-info.dbConfig.dbUNameLiteral | This is a mandatory parameter.<br>Specifies the database literal name that shall be used as per the <dbConfig.secretName>. | Data Type: String<br>Range: NA<br>Default Value: mysql-username |
| nrfclient.perf-info.dbConfig.dbPwdLiteral | This is a mandatory parameter.<br>Specifies the database password literal name that shall be used as per the <dbConfig.secretName>. | Data Type: String<br>Range: NA<br>Default Value: mysql-password |
| nrfclient.perf-info.dbConfig.dbEngine | This mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| nrfclient.perf-info.overloadManager.enabled | This is a mandatory parameter.<br>Specifies whether to enable or disable overload reporting. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| nrfclient.perf-info.overloadManager.nfType | This is a mandatory parameter.<br>Specifies the NF type that is used to query configuration from common configuration server. | Data Type: String<br>Range: NA<br>Default Value: sepp |
| nrfclient.perf-info.overloadManager.ingressGatewaySvcName | This is a mandatory parameter.<br>Specifies the names of backend services | Data Type: String<br>Range: NA<br>Default Value: n32-ingress-gateway |
| nrfclient.perf-info.overloadManager.ingressGatewayPort | This is a mandatory parameter.<br>Specifies the port number of Ingress Gateway | Data Type: Integer<br>Range: NA<br>Default Value: 80 |
| nrfclient.perf-info.ingress.enabled | This is a mandatory parameter.<br>Ingress flag control | Data Type: Boolean<br>Range: NA<br>Default Value: false |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| `nrfclient.perf-info.configmapPerformance.prometheus` | This is a mandatory parameter.<br>Prometheus server kubernetes service URL Information. | Data Type: String<br>Range: NA<br>Default Value: http://occne-kube-prom-stack-kube-prometheus.occne-infra:80/clustername/prometheus<br>Note: The user must configure the actual name of the cluster in place of `/clustername`. |
| `nrfclient.perf-info.tagNamespace` | This is a mandatory parameter.<br>Specifies the Kubernetes namespace. | Data Type: String<br>Range: NA<br>Default Value: namespace<br>**Note**:<br>• In OCI deployment, the value must be k8Namespace.<br>• In non OCCNE deployement, the value must be kubernetes_namespace. |
| `nrfclient.perf-info.tagContainerName` | This is a mandatory parameter.<br>Specifies the tag used for specifying name of the container. | Data Type: String<br>Range: NA<br>Default Value: container |
| `nrfclient.perf-info.tagServiceName` | This is a mandatory parameter.<br>Specifies the tag used for specifying name of the service. | Data Type: String<br>Range: NA<br>Default Value: service |
| `probeValidationByPass.enabled` | This is an optional parameter.<br>It is used to bypass the startup probe failure during upgrade. | Data Type: Boolean<br>Range: NA<br>Default Value: True |
| `nrfclient.perf-info.deployment.customExtension.labels` | This is an optional parameter. Custom Labels that needs to be added to perf-info specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.perf-info.deployment.customExtension.annotations` | This is an optional parameter.<br>Custom Annotations that needs to be added to perf-info specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.perf-info.service.customExtension.labels` | This is an optional parameter.<br>Custom Labels that needs to be added to perf-info specific Service. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| `nrfclient.perf-info.service.customExtension.anotations` | This is an optional parameter.<br>Custom Annotations that needs to be added to perf-info specific Services. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| `nrfclient.perf-info.startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 30<br>Range: NA |
| `nrfclient.perf-info.startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| `nrfclient.perf-info.startupProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| `nrfclient.perf-info.startupProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| `nrfclient.perf-info.startupProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>: NA |
| `nrfclient.perf-info.readinessProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 10<br>Range: NA |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.perf-info.readinessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| nrfclient.perf-info.readinessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| nrfclient.perf-info.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.perf-info.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| nrfclient.perf-info.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 20<br>Range: NA |
| nrfclient.perf-info.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | Data Type: Integer<br>Default Value: 15<br>Range: NA |
| nrfclient.perf-info.livenessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |


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**Table 3-23 (Cont.) perf-info**

| Parameter | Description | Details |
|---|---|---|
| nrfclient.perf-info.livenessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 1<br>Range: NA |
| nrfclient.perf-info.livenessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | Data Type: Integer<br>Default Value: 10<br>Range: NA |
| nrfclient.perf-info.capacityConfig.overall | This is a mandatory parameter.<br>Overall capacity for all services defined for NF. | Data Type: Integer<br>Default Value: 100<br>Range: NA |
| nrfclient.perf-info.capacityConfig.serviceLevel | This is a mandatory parameter.<br>Service level capacity for a particular NF. | Data Type: Integer<br>Default Value: Empty<br>Range: NA |
| nrfclient.perf-info.capacityConfig.default | This is a mandatory parameter.<br>Default value considered if overall capacity is not defined. | Data Type: Integer<br>Default Value: 100<br>Range: NA |

## 3.1.17 mediation

### nf-mediation parameters

This section includes information about the nf-mediation parameters of the SEPP.

**Table 3-24 nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.istioSidecarQuitUrl | This is a mandatory parameter<br>Field to define the URL that is used for quitting service mesh sidecar. This URL is used to quit the istio sidecar after successful completion of hook job. The reference variable<br>&sidecarQuitUrl should not be changed, however, the value http://127.0.0.1:15020/quitquitquit can be changed. Applicable only when serviceMeshEnabled is set to true. | Data Type: &sidecarQuitUrl"http://127.0.0.1:15000/quitquitquit"<br>Range: NA<br>Default Value: http://127.0.0.1:15020/quitquitquit |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.istioSidecarReadyUrl | This is a mandatory parameter<br>Field to define the URL that is used for checking the service mesh sidecar status and start application when the status is ready. The reference variable &sidecarReadyUrl<br>should not be changed, however, the value "http://127.0.0.1:15020/ready can be changed.Applicable only when serviceMeshEnabled isset to true. | Data Type: &sidecarReadyUrl "http://127.0.0.1:15000/ready"<br>Range: NA<br>Default Value: "http://127.0.0.1:15020/ready |
| nf-mediation.global.imageRepository | This is a mandatory parameter.<br>user need to set imageRepository to the repository where the images are kept. | Data Type: string<br>Range: NA<br>Default Value: reg-1 |
| nf-mediation.global.database.dbHost | This is a mandatory parameter.<br>DB Connection Service IP Or Hostname.<br>DB Service FQDN | Data Type: string<br>Range: Valid IPv4 address as per RFC 791 or Valid FQDN<br>Default Value: "sepp-mysql-svc" |
| nf-mediation.global.database.dbPort | This is a mandatory parameter.<br>DB Service Port | Data Type: integer<br>Range: Valid port value<br>Default Value: 3306 |
| nf-mediation.global.database.dbAppUserSecretName | This is a mandatory parameter<br>K8s Secret containing Database/user/password for all services of SCP interacting with DB. | Data Type: string<br>Range: NA<br>Default Value: 'ocsepp-mysql-cred |
| nf-mediation.global.database.dbPrivilegedUserSecretName | This is a mandatory parameter<br>Name of the Kubernetes secret object containing the Database username and password for an admin user. | Data Type: string<br>Range: NA<br>Default Value: 'ocsepp-mysql-cred' |
| nf-mediation.global.database.createUser | This is a mandatory parameter<br>This parameter can enable or disable the automatic database and application user creation. | Data Type: Boolean<br>Range: true false<br>Default Value: true |
| nf-mediation.global.database.sqlQueryLimit | This is a mandatory parameter<br>Database query limit value | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |
| nf-mediation.global.database.dbName | This is a mandatory parameter.It is the name of SEPP database. | Data Type: string<br>Range: NA<br>Default Value: seppdb |
| nf-mediation.global.database.seppBackupDbName | This is a mandatory parameter.It is the name of SEPP Backup database. Defines backupdb name where backup will be created during upgrade | Data Type: string<br>Range: NA<br>Default Value: seppbackupdb |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.global.databaseEngine | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| nf-mediation.global.hookJob.weight.mediation | This is a mandatory parameter.<br>This parameter decides the pre-hook sequence of Mediation service<br>(In Preinstall, Pre upgrade and Pre rollback) | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| nf-mediation.global.hookJob.postHookJobsWeights.mediation | This is a mandatory parameter.<br>This parameter decides the post-hook sequence of Mediation service<br>(In Post install, Post upgrade and Post rollback) | Data Type: Integer<br>Range: NA<br>Default Value: 8 |
| nf-mediation.global.upgradeLimit | This is a mandatory parameter.<br>limit of upgrade versions to be supported | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| nf-mediation.global.rollbackLimit | This is a mandatory parameter.<br>limit of rollback versions to be supported | Data Type: Integer<br>Range: NA<br>Default Value: 3 |
| nf-mediation.global.mediation.port.servicePort | This is a Mandatory parameter<br>This parameter defines the Http Port for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 9090 |
| nf-mediation.global.mediation.port.serviceHttpsPort | This is a Mandatory parameter<br>This parameter defines the Https Port for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| nf-mediation.global.mediation.port.containerPort | This is a Mandatory parameter<br>This parameter defines the container http Port for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 9090 |
| nf-mediation.global.mediation.port.containerHttpsPort | This is a Mandatory parameter<br>This parameter defines the container https Port for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 9091 |
| nf-mediation.global.mediation.port.commonServicePort | This is a Mandatory parameter<br>This parameter defines the port number for prometheus actuator service | Data Type: Integer<br>Range: NA<br>Default Value: 8091 |
| nf-mediation.global.securityContext | This is an optional parameter<br>A security context defines privilege and access control settings for a pod. | Data Type: string<br>Range: NA<br>Default Value: {} |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| `nfmediation.global.enableContainerSecurityContext` | This is a Mandatory parameter.<br>Enables security context for mediation containers. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| `nfmediation.global.containerSecurityContext.readOnlyRootFilesystem` | This is a Mandatory parameter.<br>Mounts the mediation container's root filesystem as read-only. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `nfmediation.global.containerSecurityContext.allowPrivilegeEscalation` | This is a Mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. `allowPrivilegeEscalation` parameter is always set to true when the container:<br>• is run as privileged.<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `nfmediation.global.containerSecurityContext.runAsNonRoot` | This is a Mandatory parameter.<br>Prevents mediation containers from starting as root user. | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| `nfmediation.global.containerSecurityContext.privileged` | This is a Mandatory parameter.<br>Provides mediation containers' access to the hosts resources and kernel capabilities. | Data Type: Boolean<br>Range: true or false<br>Default Value: false |
| `nfmediation.global.containerSecurityContext.runAsUser` | This is a Mandatory parameter.<br>Specifies that for any mediation container in the pod, all processes must run with the provided user ID. | Data Type: Integer<br>Range: Valid IDs for security context for user<br>Default Value: 1012 |
| `nfmediation.global.containerSecurityContext.capabilities.add` | This is a Mandatory parameter.<br>Manages Linux capabilities for containers. Using Linux capabilities, you can grant certain privileges to a process without granting all the privileges of the root user. | Data Type: List of strings<br>Range: Valid Linux capabilities<br>Default Value: -all |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.imageDetails.image | This is a mandatory parameter.<br>Indicates the Image name of mediation. | Data Type: string<br>Range: Name components may contain lowercase<br>letters, digits, and separators. A separator is<br>defined as a period, one or two underscores,<br>or one or more dashes. A name component<br>may not start or end with a separator.<br>Default Value: mediation/ocmed-nfmediation |
| nf-mediation.imageDetails.tag | This is a mandatory parameter.<br>Indicates the Image tag of mediation. | Data Type: string<br>Range: valid ASCII that may contain lowercase<br>and uppercase letters, digits, underscores,<br>periods, and dashes. A tag name may not start with<br>a period or a dash and may contain a maximum of<br>128 characters.<br>Default Value: nf_mediation_tag |
| nf-mediation.imageDetails.pullPloicy | This is a mandatory parameter.<br>Indicates if the image has to be pulled. | Data Type: string<br>Range: Always, IfNotPresent, Never<br>Default Value: Always |
| nf-mediation.targetCpuForScaling.averageCpuUtil | This is an optional parameter.<br>A new replica will be created if this much CPU utilisation is reached.<br>This parameter is used in HPA | Data Type: Integer<br>Range: NA<br>Default Value: 70. # % |
| nf-mediation.maxPdbUnavailable | This is an optional parameter.<br>determine the maximum number of pods that can remain unavailable during a voluntary disruption. For example, if maxPdbUnavailable is 25%, the evictions are allowed until not more than 25% of the desired replicas are unhealthy. | Data Type: string<br>Range: NA<br>Default Value: 25% |
| nf-mediation.upgradeStrategy | This is an optional parameter.<br>Specifies the strategy used during upgrade process. The only supported upgradeStrategy is rollingUpgrade. | Data Type: string<br>Range: RollingUpdate<br>Default Value: RollingUpdate |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.maxUnavailable | This is an optional parameter.<br>parameter determines the number of pods that are unavailable during the update.<br>Maximum number of unavailable should be 0.Since maximum number of replicas for mediation microservice is 1 | Data Type: integer<br>Range:<br>Default Value: 0 |
| nf-mediation.maxSurge | This is an optional parameter.<br>The number of pods that can be created above the desired amount of pods during an update | Data Type: integer<br>Range:<br>Default Value: 1 |
| nf-mediation.log.level | This is an mandatory parameter.<br>Enables desired level of logging for the service. | Data Type: string<br>Range: N/A<br>Default Value: ERROR |
| nf-mediation.minreplicas | This is a mandatory parameter<br>Indicates the minimum replica count of the mediation microservice. | Data Type: integer<br>Range: N/A<br>Default Value: 2 |
| nf-mediation.maxreplicas | This is a mandatory parameter<br>Indicates the maximum replica count of the mediation microservice. | Data Type: integer<br>Range: N/A<br>Default Value: 2 |
| nf-mediation.jaegerTracingEnabled | This is an optional parameter.<br>Enables Jaeger traces for mediation. | Data Type: Boolean<br>Range: true false<br>Default Value: false |
| nf-mediation.bodyInTraceEnabled | This is an optional parameter.<br>Enables body traces for mediation. | Data Type: Boolean<br>Range: true false<br>Default Value: false |
| nf-mediation.openTracing.jaeger.udpSender.host | This is an optional parameter<br>Indicates the host details of jaeger server. | Data Type: string<br>Range: N/A<br>Default Value: "jaeger-agent.cne-infra" |
| nf-mediation.openTracing.jaeger.udpSender.port | This is an optional parameter<br>Indicates the port details of Jaeger server. | Data Type: integer<br>Range: 0 - 65535<br>Default Value: 6831 |
| nf-mediation.openTracing.jaeger.logSpans | This is an optional parameter<br>Enables Jaeger log spans. | Data Type: Boolean<br>Range: true false<br>Default Value: false |
| nf-mediation.openTracing.jaeger.probabilisticSamplingRate | This is an optional parameter<br>Indicates the sampling rate for Jaeger | Data Type: string<br>Range: 0-1<br>Default Value: 0.1 |
| nf-mediation.ruleMetricsEnable | This is an optional parameter<br>Enables pegging of rule based metrics | Data Type:Boolean<br>Range: True or False<br>Default value: false |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.nfInstanceId | This is an optional parameter<br>This is the instance ID of Mediation | Data Type: String<br>Range: NA<br>Default Value: IWF1 |
| nf-mediation.MediationMode | This is an optional parameter<br>This parameter defines the mode of Mediation service | Data Type: String<br>Range: NA<br>Default Value: NFMediation |
| opentracingHost | This is an optional parameter.<br>IP address for Jaeger-Agent<br>This parameter comes into picture only if jaegerTracingEnabled parameter is enabled. | Data Type: string<br>Range: valid IP adress<br>Default Value: 10.75.157.169 |
| opentracingPort | This is an optional parameter<br>node port of Jaeger-Agent | Data Type: Integer<br>Range: valid port<br>Default Value: 32460 |
| nf-mediation.server.maxConnections | This is a mandatory parameter<br>This parameter defines the maximum connection created by tomcat server for mediation service | Data Type: Integer<br>Range:<br>Default Value: 10000 |
| nf-mediation.server.queueSize | This is a mandatory parameter<br>This parameter defines the request queue size for tomcat server for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 100 |
| nf-mediation.server.maxThreads | This is a mandatory parameter<br>This parameter defines the maximum threads for processing the requests created by tomcat server for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 200 |
| nf-mediation.server.spareThreads | This is a mandatory parameter<br>This parameter defines the spare threads for processing the requests created by tomcat server for mediation service | Data Type: Integer<br>Range: NA<br>Default Value: 20 |
| nf-mediation.undertowMaxConcurrentStream | This is a mandatory parameter<br>Maximum number of concurrent streams | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |
| nf-mediation.undertowMaxQueuedReadBuffers | This is a mandatory parameter<br>Maximum number of buffers that will be used before reads are paused in framed protocols | Data Type: Integer<br>Range: NA<br>Default Value: 200 |
| nf-mediation.undertowQueuedFramesHighWaterMark | This is a mandatory parameter<br>Maximum numbers of frames that can be queued before reads are suspended | Data Type: Integer<br>Range: NA<br>Default Value: 1000 |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.undertowQueuedFramesLowWaterMark | This is a mandatory parameter<br>The point at which reads will resume again after hitting the high water mark | Data Type: Integer<br>Range: NA<br>Default Value: 200 |
| nf-mediation.settingsMaxDownstreamConcurrentStreams | This is a mandatory parameter<br>Maximum number of down cuncurrent streams | Data Type: Integer<br>Range: NA<br>Default Value: 999 |
| nf-mediation.commonCPJCConnectFailureThreshold | This is a mandatory parameter<br>This is one of the common jetty client parameter.<br>Connection failure threshold value | Data Type: integer<br>Range: NA<br>Default Value:10 |
| nf-mediation.commonCPJCMaxConcurrentPushedStreams | This is a mandatory parameter<br>This is one of the common jetty client parameter.<br>Maximum no of Concurrent Pushed Streams | Data Type: integer<br>Range: NA<br>Default Value:1000 |
| nf-mediation.commonCPJCConnectTimeout | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the limit for connection to be established between client and server. | Data Type: integer<br>Range: NA<br>Default Value:10000 |
| nf-mediation.commonCPJCmaxRequestsQueuedPerDestination | This is a mandatory parameter<br>This is one of the common jetty client parameter.<br>Maximum Requests Queued Per Destination | Data Type: integer<br>Range: NA<br>Default Value:1024 |
| nf-mediation.commonCPJCmaxConnectionsPerDestination | This is a mandatory parameter<br>This is one of the common jetty client parameter.<br>Maximum Connections Per Destination | Data Type: integer<br>Range: NA<br>Default Value: 4 |
| nf-mediation.commonCPJCMaxConnectionsPerIp | This is a mandatory parameter<br>This is one of the common jetty client parameter.<br>Maximum Connections Per IP | Data Type: integer<br>Range: NA<br>Default Value: 4 |
| nf-mediation.commonCPJCRrequestTimeout | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the limit for the configuration for request timeout | Data Type: integer<br>Range: NA<br>Default Value:10000 |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| nf-mediation.commonCPJCDNSRefreshDelay | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the value for DNS Refresh Delay. | Data Type: integer<br>Range: NA<br>Default Value:15000 |
| nf-mediation.commonCPJCPingDelayDuration | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the value for Ping delay duration. | Data Type: integer<br>Range: NA<br>Default Value: 0 |
| nf-mediation.downstream.idleTimeout | This is a mandatory parameter<br>The Idle Timeout setting in the TCP profile specifies the length of time that a connection is idle before<br>the connection is eligible for deletion. If no traffic flow is detected within the idle session timeout, the session will be deleted. | Data Type: integer<br>Range: NA<br>Default Value: 600000(sec) |
| nf-mediation.downstream.tcpKeepalive.count | This is a mandatory parameter<br>used to adjust the count of TCP Keep-Alive packets. | Data Type: Integer<br>Range: NA<br>Default Value: 10 |
| nf-mediation.downstream.tcpKeepalive.enabled | This is a mandatory parameter<br>This parameter Enables TCP Keep alive functionality | Data Type: Boolean<br>Range: true or false<br>Default Value: true |
| nf-mediation.downstream.tcpKeepalive.interval | This is a mandatory parameter<br>used to adjust the frequency at which TCP Keep-Alive packets are sent to a remote host for connection validation | Data Type: integer<br>Range: NA<br>Default Value: 500 (sec) |
| nf-mediation.downstream.tcpKeepalive.time | This is a mandatory parameter<br>The Keep Alive Interval setting is used to adjust the frequency at which TCP Keep-Alive packets are sent to a remote host for connection validation. | Data Type: integer<br>Range: NA<br>Default Value: 1000 (sec) |
| nf-mediation.downstream.tcpKeepalive.probes | This is a mandatory parameter<br>This parameter defines the maximum number of unacknowledged keepalive packets that the system will send before considering the connection dead. | Data Type: Integer<br>Range: NA<br>Default Value: 10 |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| `nf-mediation.extraContainers` | This is a mandatory parameter.<br>Spawns debug container along with application container in the pod. This debug container is used for debugging purposes. | Data Type: string<br>Range: DISABLED, ENABLED, USE_GLOBAL_VALUE<br>Default Value: USE_GLOBAL_VALUE |
| `nf-mediation.service.loadBalancer.addressPool` | This is a mandatory parameter.<br>To request the assignment of public IP from a specific IP pool using metallb.universe.tf/address-pool annotation to mediation service. | Data Type: String<br>Range: NA<br>Default Value: signaling1 |
| `nf-mediation.service.customExtension.labels` | Optional field to configure service specific labels applicable to "Service" Resource Type. | Data Type:<br><string_label_1_key>:<string_label_1_value><br><string_label_2_key>:<string_label_2_value><br>Range: K8s label object syntax<br>Default Value:<br>customExtension:<br>labels:{}<br>annotations: {} |
| `nf-mediation.service.customExtension.annotations` | Optional field to configure service specific annotations applicable to "Service" Resource Type. | Data Type:<br><string_annotation_1_key>:<string_annotation_1_value><br><string_annotation_2_key>:<string_annotation_2_value><br>Range: K8s annotations object syntax<br>Default Value:<br>customExtension:<br>labels:{}<br>annotations: {} |
| `nf-mediation.deployment.customExtension.labels` | Optional field to configure service specific labels applicable to "Deployment" Resource Type. | Data Type:<br><string_label_1_key>:<string_label_1_value><br><string_label_2_key>:<string_label_2_value><br>Range: K8s label object syntax<br>Default Value:<br>customExtension:<br>labels:{}<br>annotations: {} |


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**Table 3-24 (Cont.) nf-mediation parameters**

| Parameter | Description | Details |
|---|---|---|
| `nf-mediation.deployment.customExtension.annotations` | Optional field to configure service specific annotations applicable to "Deployment" Resource Type. | Data Type:<br><string_annotation_1_key>:<string_annotation_1_value><br><string_annotation_2_key>:<string_annotation_2_value><br>Range: K8s annotations object syntax<br>Default Value:<br>customExtension:<br>labels:{}<br>annotations: {} |
| `nf-mediation.sidecarPortExclusion.inBound` | This is an optional parameter. This is used to exclude ports on mediation microservice. | Data Type: integer<br>Range: valid port value<br>Default Value: 8091 |

**mediationConfig**

This section includes information about the mediation config parameters of the SEPP.

**Table 3-25 mediationConfig parameters**

| Parameter | Description | Details |
|---|---|---|
| `mediationConfig.ruleApi.enabled` | This is a mandatory parameter<br>This flag is used to enable or disable the CNC Console or REST API based rules configurations feature implementation.<br>If the value is true, mediation microservice uses the rules from the CNC Console or REST APIs based rules setup.<br>If the value is false, mediation microservice uses the rules from the config map based rules setup. | Data Type: boolean<br>Range: NA<br>Default Value: true |
| `mediationConfig.idleTimeout` | This is a mandatory parameter. This indicates the maximum duration that (milliseconds) a connection can be idle for (that is, without traffic of bytes in either direction). | Data Type: integer<br>Range: NA<br>Default Value: 720000 ms |

## 3.1.18 coherence-svc

This section includes information about the coherence-svc parameters of the SEPP.


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**Table 3-26 coherence-svc**

| Parameter | Description | Details |
|---|---|---|
| coherence-svc.global.asm.istioSidecarQuitUrl | This is a mandatory parameter.<br>This indicates the sidecar (istio quit url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Default Value: " " |
| coherence-svc.global.asm.istioSidecarReadyUrl | This is a mandatory parameter.<br>This indicates the sidecar (istio ready url) when deployed in serviceMesh. Port should be modified envoy admin port. | Data Type: String<br>Default Value: "http://127.0.0.1:15000/ready" |
| coherence-svc.replicaCount | This is a mandatory parameter.<br>This indicates the maximum replicas to scale to maintain an average CPU utilisation | Data Type: Integer<br>Default Value: 1 |
| coherence-svc.clusterName | This is a mandatory parameter.<br>Name of Cluster | Data Type: Integer<br>Default Value: SEPPCoherenceCluster |
| coherence-svc.image.repository | This is a mandatory parameter.<br>Repo location of image | Data Type: Integer<br>Default Value: reg-1 |
| coherence-svc.image.name | This is a mandatory parameter.<br>Name of image | Data Type: String<br>Default Value: ocsepp-coherence-svc |
| coherence-svc.image.tag | This is a mandatory parameter.Tag of image | Data Type: String<br>Default Value: helm-tag |
| coherence-svc.image.pullPolicy | This is a mandatory parameter.<br>This setting indicates if the image needs to be pulled or not | Data Type: String<br>Default Value: Always |
| coherence-svc.service.port | This is a mandatory parameter.<br>This is the ocsepp-pn32f-cache-svc service Port number | Data Type: Integer<br>Default Value: 9070 |
| coherence-svc.service.actuatorPort | This is a mandatory parameter.<br>ActuatorPort is used for prometheus port and probes.It Cannot be same as service port. | Data Type: Integer<br>Default Value: 9090 |
| coherence-svc.log.root | This is a mandatory parameter.<br>This indicates the Root log level value | Data Type: String<br>Default Value: ERROR |
| coherence-svc.log.sepp | This is a mandatory parameter.<br>This indicates the SEPP specific log level | Data Type: String<br>Default Value: ERROR |
| coherence-svc.resources.limits.ephemeralStorage | This is an optional parameter.<br>This indicates the pods use ephemeral local storage for scratch space, caching, and logs. | Data Type: Integer<br>Default Value: 1Gi |
| coherence-svc.resources.limits.cpu | This is a mandatory parameter.<br>Resource Requirements(limit of cpu) | Data Type: Integer<br>Default Value: 1 |


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**Table 3-26 (Cont.) coherence-svc**

| Parameter | Description | Details |
|---|---|---|
| coherence-svc.resources.limits.memory | This is a mandatory parameter.<br>Resource Requirements(limit of memory) | Data Type: String<br>Default Value: 2Gi |
| coherence-svc.resources.requests.ephemeralStorage | This is an optional parameter.<br>Pods and containers can require ephemeral storage for their operation. | Data Type: String<br>Default Value: 78Mi |
| coherence-svc.resources.requests.cpu | This is a mandatory parameter.<br>Resource Requirements(requested cpu) | Data Type: Integer<br>Default Value: 1 |
| coherence-svc.resources.requests.memory | This is a mandatory parameter.<br>Resource Requirements(requested memory) | Data Type: String<br>Default Value: 2Gi |
| coherence-svc.resources.target.averageCpuUtil | This is a mandatory parameter.<br>Resource Requirements(avg cpu utilisation) | Data Type: Integer<br>Default Value: 50 |
| coherence-svc.coherence.port | This is a mandatory parameter.<br>This is coherence service port number. | Data Type: Integer<br>Default Value: 8070 |
| service.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to coherence specific Services. | Data Type: String<br>Default Value: null<br>Range: NA |
| deployment.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to coherence specific Deployment. | Data Type: String<br>Default Value: null<br>Range: NA |
| deployment.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to coherence specific Deployment. | Data Type: String<br>Default Value: null<br>Range: NA |
| service.customExtension.labels | This is an optional parameter.<br>Custom Labels that needs to be added to coherence specific Service. | Data Type: String<br>Default Value: null<br>Range: NA |
| coherence-svc.configs.dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | Data Type: Integer<br>Default Value: 30000ms<br>Range: NA |

## 3.1.19 alternate-route service

This section includes information about the alternate-route service parameters of the SEPP.


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**Table 3-27 Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| `alternate-route.logStorage` | This is an optional parameter.<br>It is the sum of "50M Logging space requirement of infrastructure (based on kubectl configuration - default log file size if 10M and it maintains max 5 copies)" and "5Kb as infra space". resources.request.ephemeral-storage will be set as 110% of the sum (logStorage + crictlStorage) | **Data Type**: Integer<br>**Default Value**: 70MB<br>**Range**: NA |
| `alternate-route.crictlStorage` | This is an optional parameter.<br>It is the disk space usage of a pod that can be collected by running the command crictl stats `` `crictl ps \| grep dummy \| cut -d" " -f1` `` in the node on which the pod is running. To know the pod details, run the `kubectl get pods -o wide` command.<br>resources.request.ephemeral-storage will be set as 110% of the sum (logStorage + crictlStorage) | **Data Type**: Integer<br>**Default Value**: 1MB<br>**Range**: NA |
| `alternate-route.nodeSelection` | This is a mandatory parameter.<br>Specifies whether Kubernetes assigns the alternate-route pod to the node that match with the specified node labels.<br>If the value is set to USE_GLOBAL_VALUE, then the pod uses the configuration from `nodeSelection` parameter in the Global Parameters section.<br>If the value is set to ENABLED, then the nodeSelector is applied to the deployments.<br>If the value is set to DISABLED, then the nodeSelector is not applied to any deployments. | **Data Type**: String<br>**Default Value**: USE_GLOBAL_VALUE<br>**Range**: ENABLED, DISABLED, USE_GLOBAL_VALUE |
| `alternate-route.helmBasedConfigurationNodeSelectorApiVersion` | This is a mandatory parameter.<br>Indicates the supported Node Selector API Version.<br>**Note**: Only v1 is supported. | **Data Type**: String<br>**Default Value**: v1<br>**Range**: NA |
| `alternate-route.nodeSelector.nodeKey` | This is a mandatory parameter.<br>nodeSelector: Use this configuration to apply nodeSelector to Configuration service pods.<br>nodeKey: Key of the node label.<br>**Note**: This is a read-only parameter. It is configured only for config client. | **Data Type**: String<br>**Default Value**: ''<br>**Range**: NA |
| `alternate-route.nodeSelector.nodeValue` | This is a mandatory parameter.<br>Indicates the value of the node label.<br>**Note**: This is a read-only parameter. It is configured only for config client. | **Data Type**: String<br>**Default Value**: ""<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| `alternate-route.tolerationsSetting` | This is an optional parameter.<br>Specifies whether Kubernetes assigns the toleration to the `alternate-route` pod.<br>If the value is set to USE_GLOBAL_VALUE, then the pod uses the configuration from the `global.tolerations` parameter configured in the Global Parameters section.<br>If the value is set to ENABLED, then the toleration is applied to the pod that is defined in the tolerations in the `alternate-route` pod.<br>If the value is set to DISABLED, then the toleration is not applied to the pod that is defined in the tolerations in the `alternate-route` pod. | **Data Type**: String<br>**Default Value**: USE_GLOBAL_VALUE<br>**Range**: ENABLED, DISABLED, USE_GLOBAL_VALUE |
| `alternate-route.tolerations` | This is an optional parameter.<br>Defines the toleration values. Following is an example to define the configuration:<br>`tolerations:`<br>`- key: "exampleKey"`<br>`operator: "Equal"`<br>`value: "value1"`<br>`effect: "NoSchedule"` | **Data Type**: String<br>**Default Value**: []<br>**Range**: NA |
| `alternate-route.maxUnavailable` | This is a mandatory parameter.<br>Indicates the maximum allowed unavailable pods during pod disruption.<br>This parameter uses the same value of the reference variable, `maxPdbUnavailable` present in the Global Parameters section.<br>**Note**: By default the global configured value is used. The reference variable must be replaced with absolute value, in case the microservice value needs to be changed. | **Data Type**: String<br>**Default Value**: *maxPdbUnavailableRef<br>**Range**: NA |
| `alternate-route.deploymentDnsSrv.name` | This is an optional parameter.<br>Indicates the full image path. | **Data Type**: String<br>**Default Value**: alternate_route<br>**Range**: NA |
| `alternate-route.deploymentDnsSrv.tag` | This is an optional parameter.<br>Indicates the tag image in docker repository.<br>This parameter uses the same value of the reference variable, `gwTag` present in the Global Parameters section.<br>**Note**: This is a read-only parameter and must not be changed. | **Data Type**: String<br>**Default Value**: *gwTagRef<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| `alternate-route.deploymentDnsSrv.pullPolicy` | This is an optional parameter.<br>Indicates if the image need to be pulled.<br>This parameter uses the same value of the reference variable, `imagePullPolicy` present in the Global Parameters section.<br>**Note**: This is a read-only parameter and must not be changed. | **Data Type**: String<br>**Default Value**: *imagePullPolicyRef<br>**Range**: Always, IfNotPresent, Never |
| `alternate-route.dbHookImage.name` | This is an optional parameter.<br>Indicates the common configuration hook image. | **Data Type**: String<br>**Default Value**: common_config_hook<br>**Range**: NA |
| `alternate-route.dbHookImage.tag` | This is an optional parameter.<br>Indicates the common configuration hook image tag. This parameter uses the same value of the reference variable, `gwTag` present in the Global Parameters section.<br>**Note**: This is a read-only parameter and must not be changed. | **Data Type**: String<br>**Default Value**: *gwTagRef<br>**Range**: NA |
| `alternate-route.dbHookImage.pullPolicy` | This is an optional parameter.<br>Indicates the common configuration hook image pull policy.<br>**Note**: This is a read-only parameter and must not be changed. | **Data Type**: String<br>**Default Value**: *imagePullPolicyRef<br>**Range**: NA |
| `alternate-route.minAvailable` | This is an optional parameter.<br>Indicates the number of pods must always be available, even during a disruption. | **Data Type**: Integer<br>**Default Value**: 2<br>**Range**: NA |
| `alternate-route.minReplicas` | This is an optional parameter.<br>Indicates the minimum number of pods that will be deployed. | **Data Type**: Integer<br>**Default Value**: 2<br>**Range**: NA |
| `alternate-route.maxReplicas` | This is an optional parameter.<br>Indicates the maximum number of pods that will be scaled up. | **Data Type**: Integer<br>**Default Value**: 2<br>**Range**: NA |
| `alternate-route.startupProbe.initialDelaySeconds` | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | **Data Type**: Integer<br>**Default Value**: 30<br>**Range**: NA |
| `alternate-route.startupProbe.periodSeconds` | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | **Data Type**: Integer<br>**Default Value**: 10<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| alternate-route.startupProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 3<br>**Range**: NA |
| alternate-route.startupProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 1<br>**Range**: NA |
| alternate-route.startupProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 6<br>**Range**: NA |
| alternate-route.readinessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing the first readiness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | **Data Type**: Integer<br>**Default Value**: 30<br>**Range**: NA |
| alternate-route.readinessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval (in seconds) for every readiness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | **Data Type**: Integer<br>**Default Value**: 10<br>**Range**: NA |
| alternate-route.readinessProbe.timeoutSeconds | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 3<br>**Range**: NA |
| alternate-route.readinessProbe.successThreshold | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 1<br>**Range**: NA |
| alternate-route.readinessProbe.failureThreshold | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes indicates failure threshold time before giving up.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 3<br>**Range**: NA |
| alternate-route.livenessProbe.initialDelaySeconds | This is an optional parameter.<br>Indicates the configurable wait time (in seconds) before performing first liveness probe by Kubelet.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | **Data Type**: Integer<br>**Default Value**: 30<br>**Range**: NA |
| alternate-route.livenessProbe.periodSeconds | This is an optional parameter.<br>Indicates the time interval ((in seconds) for every liveness probe check.<br>**Note**: Do not change the default value. If you see delays in pod to come up and probe is killing the pod then you must tune these parameters. | **Data Type**: Integer<br>**Default Value**: 15<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| `alternate-route.livenessProbe.timeoutSeconds` | This is an optional parameter.<br>Indicates the number of seconds after which the probe times out.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 3<br>**Range**: NA |
| `alternate-route.livenessProbe.successThreshold` | This is an optional parameter.<br>Indicates the minimum consecutive successes for the probe to be considered successful after having failed.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 1<br>**Range**: NA |
| `alternate-route.livenessProbe.failureThreshold` | This is an optional parameter.<br>When a pod starts and the probe fails, Kubernetes tries failure threshold times before giving up.<br>**Note**: Do not change the default value. | **Data Type**: Integer<br>**Default Value**: 3<br>**Range**: NA |
| `alternate-route.dbConfig.dbHost` | This is a mandatory parameter.<br>Indicates the hostname of database connection in which the common configuration must be stored.<br>This is the MySQL primary DB connection service IP or hostname (`mysql.primary.host`) present in the Global Parameters section. | **Data Type**: String<br>**Default Value**: *mySqlHostRef<br>**Range**: NA |
| `alternate-route.dbConfig.dbPort` | This is a mandatory parameter.<br>Indicates the port of database connection.<br>This is the MySQL primary DB connection service port (`mysql.primary.port`) present in the Global Parameters section. | **Data Type**: String<br>**Default Value**: *mySqlPortRef<br>**Range**: NA |
| `alternate-route.dbConfig.secretName` | This is a mandatory parameter.<br>Indicates the secret name from which the DB name, DB password and db user name is picked for common configuration.<br>This is the privileged user secret name used by DB hooks for creating tables (`database.privilegedUserSecretName`) present in the Global Parameters section. | **Data Type**: String<br>**Default Value**: *privilegedSecretNameRef<br>**Range**: NA |
| `alternate-route.dbConfig.dbName` | This is a mandatory parameter.<br>Indicates the name of common configuration database.<br>This is the database name to be used for common configuration (`database.commonConfigDbName`) present in the Global Parameters section. | **Data Type**: String<br>**Default Value**: *dbNameRef<br>**Range**: NA |
| `alternate-route.dbConfig.dbEngine` | This is a mandatory parameter.<br>Defines the MySQL engine that is used to store information in the MySQL database. | Data Type: String<br>Range: NDBCLUSTER or InnoDB<br>Default Value: NDBCLUSTER<br>Note: NDBCLUTER must be used when using cnDBTier. |
| `alternate-route.staticVirtualFqdns.name` | This is an optional parameter.<br>Indicates the name of the virtual FQDN or FQDN. | **Data Type**: String<br>**Default Value**: NA<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| `alternate-route.staticVirtualFqdns.alternateFqdns.target` | This is a mandatory parameter, if "`alternate-route.staticVirtualFqdns.name`" is defined.<br>Indicates the name of the alternate FQDN mapped to above virtual FQDN. | **Data Type**: String<br>**Default Value**: NA<br>**Range**: NA |
| `alternate-route.staticVirtualFqdns.alternateFqdns.port` | This is a mandatory parameter, if "`alternate-route.staticVirtualFqdns.name`" is defined.<br>Indicates the port of the alternate FQDN. | **Data Type**: Integer<br>**Default Value**: 5060<br>**Range**: NA |
| `alternate-route.staticVirtualFqdns.alternateFqdns.priority` | This is a mandatory parameter, if "`alternate-route.staticVirtualFqdns.name`" is defined.<br>Indicates the priority of the alternate FQDN. | **Data Type**: Integer<br>**Default Value**: 10<br>**Range**: NA |
| `alternate-route.dnsSrvEnabled` | This is an optional parameter.<br>Indicates the attribute to enable or disable the DNS-SRV query to DNS Server. | **Data Type**: Boolean<br>**Default Value**: true<br>**Range**: false, true |
| `alternate-route.dnsSrvFqdnSetting.enabled` | This is an optional parameter.<br>Indicates the flag to enable the usage of custom patterns for the FQDN while triggering DNS-SRV query. | **Data Type**: Boolean<br>**Default Value**: true<br>**Range**: false, true |
| `alternate-route.dnsSrvFqdnSetting.pattern` | This is an optional parameter.<br>Indicates the pattern of the FQDN used to format the incoming FQDN and Scheme while triggering the DNS-SRV query.<br>• The value must be in sync with the format used for configuring FQDN's of SRV records in DNS.<br>• If the flag "`dnsSrvFqdnSetting.enabled`" is set to false, then the default value is used for forming the FQDN while sending a DNS-SRV query to DNS. This default value is in accordance with the standards of DNS-SRV. It is recommended that this pattern must be used for configuring the SRV records in DNS. | **Data Type**: String<br>**Default Value**: "_{scheme}._tcp.{fqdn}."<br>**Range**: NA |
| `alternate-route.resources.limits.cpu` | This is an optional parameter.<br>Indicates the maximum amount of CPU that Kubernetes will allow the nrfconfiguration service container to use.<br>It is the maximum CPU resource allocated to nrfconfiguration deployment. | **Data Type**: Integer<br>**Default Value**: 2<br>**Range**: NA |
| `alternate-route.resources.limits.commonHooksCpu` | This is an optional parameter.<br>Indicates the maximum amount of CPU that Kubernetes will allow the common hooks container to use. | **Data Type**: Integer<br>**Default Value**: 1<br>**Range**: NA |
| `alternate-route.resources.limits.memory` | This is an optional parameter.<br>Indicates the maximum memory that Kubernetes will allow the nrfconfiguration service container to use.<br>It is the maximum memory allocated to nrfconfiguration deployment. | **Data Type**: Integer<br>**Default Value**: 4Gi<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| `alternate-route.resources.limits.commonHooksMemory` | This is an optional parameter.<br>Indicates the maximum amount of memory that Kubernetes will allow the common hooks container to use. | **Data Type**: Integer<br>**Default Value**: 1Gi<br>**Range**: NA |
| `alternate-route.resources.requests.cpu` | This is an optional parameter.<br>Indicates the amount of CPU that the system will guarantee for the nrfconfiguration service container, and Kubernetes will use this value to decide on which node to place the pod.<br>It is the maximum CPU resource allocated to nrfconfiguration deployment. | **Data Type**: Integer<br>**Default Value**: 2<br>**Range**: NA |
| `alternate-route.resources.requests.memory` | This is an optional parameter.<br>Indicates the memory that the system will guarantee for the nrfconfiguration, Kubernetes will use this value to decide on which node to place the pod.<br>It is the maximum memory for requests allocated to nrfconfiguration deployment. | **Data Type**: Integer<br>**Default Value**: 2Gi<br>**Range**: NA |
| `alternate-route.resources.target.averageCpuUtil` | This is an optional parameter.<br>Indicates the target CPU utilization after which Horizontal Pod Autoscaler will be triggered. | **Data Type**: Integer<br>**Default Value**: 80<br>**Range**: NA |
| `alternate-route.gracePeriodSeconds` | This is a mandatory parameter.<br>It is the grace period for pod to wait for inflight requests to be completed. If there are no inflight requests, then this period is ignored. If there are pending requests even after this period is elapsed, then the pod will be forcefully shutdown.<br>**Unit**: seconds. | **Data Type**: Integer<br>**Default Value**: 60<br>**Range**: NA |
| `alternateRouteServiceEnable` | This is a mandatory parameter.<br>This parameter is used to enable the deployment for alternate-route-service. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `dnsSrvFqdnSetting.enabled` | This is an optional parameter.<br>This parameter is used to enable or disable the usage of custom patterns for the FQDN while triggering DNS-SRV query. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `dnsSrvFqdnSetting.pattern` | This is an optional parameter.<br>This parameter is the default custom pattern for DNS SRV record to be resolved. | Data Type: String<br>Default Value: _{scheme}._tcp.{fqdn}. |
| `dnsSrvEnabled` | This is a mandatory parameter.<br>This parameter is used to enable the sending of DNS SRV queries to core-dns. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| `ports.actuatorPort` | This is a Mandatory parameter (for ASM and non ASM Setups).<br>ActuatorPort is used for prometheus port and probes.<br>It cannot be same as service port. | Data Type: Integer<br>Range: NA<br>Default Value: 9094 |
| `service.customExtension.labels` | This is an optional parameter.<br>Custom Labels that needs to be added to alternate-route specific Service. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| service.customExtension.anotations | This is an optional parameter.<br>Custom Annotations that needs to be added to alternate-route specific Services. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| deployment.customExtension.labels | This is an optional parameter. Custom Labels that needs to be added to alternate-route specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| deployment.customExtension.annotations | This is an optional parameter.<br>Custom Annotations that needs to be added to alternate-route specific Deployment. | **Data Type**: String<br>**Default Value**: null<br>**Range**: NA |
| enablePodSecurityContext | This is a mandatory parameter.<br>Enables security context for pod. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| podSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents pod from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| podSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that all processes in pod must run with the provided user ID. | Data Type: Integer<br>Default Value: 10001 |
| securityContext.enable | This is a mandatory parameter.<br>Enables security context for containers. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.readOnlyRootFilesystem | This is a mandatory parameter.<br>Mounts the mediation container's root filesystem as read-only. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.allowPrivilegeEscalation | This is a mandatory parameter.<br>Controls if a process can obtain more privileges than its primary process. This boolean data type controls whether the no_new_privs parameter gets configured on the container process. allowPrivilegeEscalation is always set to true when the container:<br>• is run as privileged<br>• has CAP_SYS_ADMIN | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsNonRoot | This is a mandatory parameter.<br>Prevents containers from starting as root user. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| containerSecurityContext.privileged | This is a mandatory parameter.<br>Provides containers' access to the host's resources and kernel capabilities. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| containerSecurityContext.runAsUser | This is a mandatory parameter.<br>Specifies that for any container in the pod, all processes must run with the provided user ID. | Data Type: Integer<br>Range: Valid IDs for security context for user<br>Default Value: 10001 |


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**Table 3-27 (Cont.) Alternate Route Service**

| Parameter | Description | Details |
|---|---|---|
| containerSecurityContext.capabilities.drop | This is a mandatory parameter.<br>Manages Linux capabilities for containers. Using Linux capabilities, you can grant certain privileges to a process without granting all the privileges of the root user. | Data Type: List of strings<br>Range: Valid Linux capabilities<br>Default Value: -all |
| refreshScheduler.enabled | This is an optional parameter.<br>Set it to true to enable the "auto refresh" scheduled task. | Data Type: Boolean<br>Range: True or False<br>Default Value: True |
| refreshScheduler.interval | This is a mandatory parameter (If refreshScheduler.enabled is true).<br>This will be used for triggering "refresh-scheduler: as per time interval configured in minutes. | Data Type: Integer<br>Default Value: 60 (in minutes) |

## 3.1.20 Timer Parameters

The following is the consolidated list of SEPP Timer Parameters:

**PN32F**

**Table 3-28 PN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| cacheRefreshTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database. | 30,000 (ms) | Integer |
| cacheRefreshInitTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database at Init time. | 5000 (ms) | Integer |
| securityCacheRefreshTimeout | This is a mandatory parameter (If Security Countermeasure feature is enabled).<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration. | 30,000 (ms) | Integer |


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**Table 3-28 (Cont.) PN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| securityCacheRefreshInitTimeout | This is a mandatory parameter (If Security Countermeasure feature is enabled).<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration at the Init time when Application comes up. | 50,000 (ms) | Integer |
| topologyhidingCacheRefreshTimeout | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration. | 30,000 (ms) | Integer |
| topologyhidingCacheRefreshInitTimeout | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration at the Init time when Application comes up. | 50,000 (ms) | Integer |
| topologyhidingHistoryUpdateTimeout | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>This is the Time for the old entries to be removed from cache.<br>Entries older than topologyhidingHistoryRefreshSeconds are purged. | 30,000 (ms) | Integer |


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**Table 3-28 (Cont.) PN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| topologyhidingHistoryRefreshSeconds | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>This value represents the Time until old Topology Hiding feature entries are kept in cache. | 60 (sec) | Integer |
| connectionTimeout | This is a mandatory parameter.<br>This is Jetty Client Settings.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | 60 (ms) | Integer |
| dnsRefreshDelay | This is a mandatory parameter.<br>This is Jetty Client Settings.<br>This value represents the Time taken to refresh the DNS entries for a destination | 10,000 (ms) | Integer |
| requestTimeout | This is a mandatory parameter.<br>This is Jetty Client Settings.<br>Request timeout is the maximum time that can be taken to process HTTP request after the connection is established.<br>Sum of time to process request plus ConnectionTimeout and should always be greater than Connection Timeout. | 1100 (ms) | Integer |
| mediationRequestTimeout | This is a mandatory parameter (If Mediation feature is enabled).<br>Time to wait for the response from mediation microservice. | 400 (ms) | Integer |


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**Table 3-28 (Cont.) PN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| nrfDiscoveryCacheRefreshTimeout | This is a mandatory parameter (If Cat 3 - Previous Location Check feature is enabled).<br>This parameter defines the timer value when UDR Discovery request will be triggered if coherence map containing UDR Profile information is empty. After this timer expiry, UDR Discovery request will be initiated by NRF Client towards NRF. | 30000 (ms)<br>Note: In ATS setup, set the value as 10. | Integer |
| nrfDiscoveryCacheRefreshInitTimeout | This is a mandatory parameter (If Cat 3 - Previous Location Check feature is enabled).<br>This parameter defines the timer value after which UDR Discovery request will be triggered at SEPP INIT Time. After this timer expiry, UDR Discovery request will be initiated by NRF Client towards NRF. | 5000 (ms) | Integer |
| evictSanHeaderCacheDelay | This is a mandatory parameter.<br>This parameter defines the timer value after which San Header Cache gets cleared out and updated with new N32F Context (if added). | 50000 (ms)<br>Note: In ATS setup, set the value as 100. | Integer |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | 30000 ms | Integer |
| nrfNotificationListenerInitTimeout | This is a mandatory parameter.<br>The initial wait time before the pn32f sepp service attempts to register the NRF notification map listener. | 30000 ms | Integer |


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**Table 3-28 (Cont.) PN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| nrfNotificationListenerTimeout | This is a mandatory parameter.<br>The fixed delay intended to control how often the notification listener registration job should run after the first run. | 300000 ms | Integer |

**CN32F**

**Table 3-29 CN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| cacheRefreshTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database. | 30,000 (ms) | Integer |
| cacheRefreshInitTimeout | This is a mandatory parameter.<br>Timeout configured for updating PN32F cache with N32F Context details present in SEPP database at Init time. | 5000 (ms) | Integer |
| securityCacheRefreshTimeout | This is a mandatory parameter (If Security Countermeasure feature is enabled).<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration. | 30,000 (ms) | Integer |
| securityCacheRefreshInitTimeout | This is a mandatory parameter (If Security Countermeasure feature is enabled).<br>Timeout configured for updating PN32F cache with SEPP Features details for loading their Database configuration at the Init time when Application comes up. | 50,000 (ms) | Integer |


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**Table 3-29 (Cont.) CN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| topologyhidingCacheRefreshTimeout | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration. | 30,000 (ms) | Integer |
| topologyhidingCacheRefreshInitTimeout | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>Timeout configured for updating PN32F cache with Topology Hiding feature configuration for loading their Database configuration at the Init time when Application comes up. | 50,000 (ms) | Integer |
| topologyhidingHistoryUpdateTimeout | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>This is the Time for the old entries to be removed from cache.<br>Entries older than topologyhidingHistoryRefreshSeconds are purged. | 30,000 (ms) | Integer |
| topologyhidingHistoryRefreshSeconds | This is a mandatory parameter (If Topology hiding feature is enabled).<br>This is Topology Hiding Settings.<br>This value represents the Time until old Topology Hiding feature entries are kept in cache. | 60 (sec) | Integer |


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**Table 3-29 (Cont.) CN32F**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| connectionTimeout | This is a mandatory parameter.<br>This is Jetty Client Settings.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | 60 (ms) | Integer |
| dnsRefreshDelay | This is a mandatory parameter.<br>This is Jetty Client Settings.<br>This value represents the Time taken to refresh the DNS entries for a destination | 10,000 (ms) | Integer |
| requestTimeout | This is a mandatory parameter<br>This is Jetty Client Settings.<br>Request timeout is the maximum time that can be taken to process HTTP request after the connection is established.<br>Sum of time to process request plus ConnectionTimeout and should always be greater than Connection Timeout. | . | Integer |
| mediationRequestTimeout | This is a mandatory parameter (If Mediation feature is enabled).<br>Time to wait for the response from mediation microservice. | 900 (ms) | Integer |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | 30000 ms | Integer |

**Update DB**


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**Table 3-30 Update DB**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| customAlertExpiryDuration | This is a mandatory parameter (applicable only when customAlertExpiryEnabled is set to true).<br>This timer indicates, alert expiry occurs according to resolve_timeout value of AlertManager and upgrade/rollback hooks shall clear the alerts as applicable. If it is set to true,<br>auto alert clear shall occur after customAlertExpiryDuration value and<br>upgrade/rollback hooks may not clear the alerts.<br>The custom duration (in minutes) post which Alert gets auto cleared, applicable only when<br>customAlertExpiryEnabled is set to true | 60 (Min) | Integer |

**NRF Client**

**Table 3-31 NRF Client**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| nrf-client-nfdiscovery.commonCfgServer.pollingInterval | This is a mandatory parameter (applicable only when commonCfgClient.enabled is set to true).<br>The interval at which the discovery service shall poll the configuration service to check for updates in ms<br>This attribute shall be configured only if commonCfgClient.enabled is set to true. | 5000 (ms) | Integer |


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**Table 3-31 (Cont.) NRF Client**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `nrf-client-nfmanagement.commonCfgServer.pollingInterval` | This is a mandatory parameter (applicable only when commonCfgClient.enabled is set to true).<br>The interval at which the management service shall poll the configuration service to check for updates in ms<br>This attribute shall be configured only if commonCfgClient.enabled is set to true. | 5000 (ms) | Integer |

**App Info**

**Table 3-32 App Info**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `commonCfgServer.pollingInterval` | This is a mandatory parameter (applicable only when commonCfgClient.enabled is set to true).<br>This is the interval between two subsequent polling requests from config client to<br>server | 5000 (ms) | Integer |
| `commonCfgServer.connectionTimeout` | This is a mandatory parameter (applicable only when commonCfgClient.enabled is set to true).<br>This is the limit for connection to be established between config client and server | 10000 (ms) | Integer |

**perf-info**


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**Table 3-33 perf-info**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `commonCfgServer.pollingInterval` | This is a mandatory parameter (Applicable only if commonCfgClient.enabled is set to true).<br>This is the interval between two subsequent polling requests from config client toserver | 5000 (ms) | Integer |
| `commonCfgServer.connectionTimeout` | This is a mandatory parameter (Applicable only if commonCfgClient.enabled is set to true).<br>This is the limit for connection to be established between config client and server | 10000 (ms) | Integer |

### Config Manager Service

**Table 3-34 Config Manager Service**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `readinessProbe.initialDelaySeconds` | This is a mandatory parameter.<br>This value Tells the kubelet that it should wait second before performing the first probe.<br>Probes start running after initialDelaySeconds after container is started. | 30 (sec) | Integer |
| `readinessProbe.timeoutSeconds` | This is a mandatory parameter.<br>This value tells the Number of seconds after which the probe times out. | 3 (sec) | Integer |
| `readinessProbe.periodSeconds` | This is a mandatory parameter.<br>This value specifies that the kubelet should perform a liveness probe every xx seconds. | 10 (sec) | Integer |


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**Table 3-34 (Cont.) Config Manager Service**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| livenessProbe.initialDelaySeconds | This is a mandatory parameter.<br>This value tells the kubelet that it should wait second before performing the first probe. | 180 (sec) | Integer |
| livenessProbe.timeoutSeconds | This is a mandatory parameter.<br>Number of seconds after which the probe times out. | 3 (sec) | Integer |
| livenessProbe.periodSeconds | This is a mandatory parameter.<br>This value specifies that the kubelet should perform a liveness probe every xx seconds. | 15 (sec) | Integer |
| dbCheckRefreshTimeout | This is a mandatory parameter.<br>This value represents time interval that checks whether Database connectivity with Service is healthy or not. | 30000 ms | Integer |

### Mediation

**Table 3-35 Mediation**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| commonCPJCConnectTimeout | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the limit for connection to be established between client and server. | 10000 | Integer |
| commonCPJCRrequestTimeout | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the limit for the configuration for request timeout | 10000 | Integer |


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**Table 3-35 (Cont.) Mediation**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| commonCPJCDNSRefreshDelay | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the value for DNS Refresh Delay. | 15000 | Integer |
| commonCPJCPingDelayDuration | This is a conditional parameter.<br>This is one of the common jetty client parameter.<br>This is the value for Ping delay duration. | 0 | Integer |
| downstream.idleTimeout | This is a mandatory parameter.<br>The Idle Timeout setting in the TCP profile specifies the length of time that a connection is idle before<br>the connection is eligible for deletion. If no traffic flow is detected within the idle session timeout, the session will be deleted. This timer is for jetty client. | 600000 (sec) | Integer |
| downstream.tcpKeepalive.interval | This is a mandatory parameter.<br>Used to adjust the frequency at which TCP Keep-Alive packets are sent to a remote host for connection validation | 500 (sec) | Integer |
| downstream.tcpKeepalive.time | This is a mandatory parameter.<br>The Keep Alive Interval setting is used to adjust the frequency at which TCP Keep-Alive packets are sent to a remote host for connection validation. | 1000 (sec) | Integer |

**PLMN Egress Gateway**


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**Table 3-36 PLMN Egress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| connectionTimeout | This is an optional parameter.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | 60 (ms) | Integer |
| requestTimeout | This is an optional parameter.<br>The configuration for request timeout for the call from Egress Gateway to the producer NF. | 1000 (ms) | Integer |
| gracefulCloseDelay | This is a mandatory parameter.<br>gracefulCloseDelay value should be positive value greater than requestTimeout and lesser than jettyIdleTimeout.<br># if gracefulCloseDelay is set to 0 then default value of 30000 ms will be considered internally | 2000 (ms) | Integer |
| dnsRefreshDelay | This is an optional parameter.<br>This is Jetty Client Settings.<br>This value represents the Time taken to refresh the DNS entries for a destination | 10000 (ms) | Integer |
| gracefulShutdown.gracePeriod | This is an optional parameter.<br>Grace period to wait for active requests to be executed.<br>If there are no active requests then this period is neglected.<br>'s' in case of seconds and 'm' in case of minutes | 1 (min) | Integer |


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**Table 3-36 (Cont.) PLMN Egress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| jettyIdleTimeout | This is a mandatory parameter.<br>Used for clearing out idle connections on Jetty Client.<br>Note: Jetty Idle timeout provides a waiting period before cleaning up the TCP socket when the client has sent a GOAWAY but the server never responded with GOAWAY. It is recommended that all NFs must set Jetty Idle timeout to a non-zero value to be resilient to bad peers that do not respond to a GOAWAY. | -1 | Integer |
| nettyIdleTimeout | This is a mandatory parameter.<br>Netty server Idle Timeout value. | 120000000 ms | Integer |

### PLMN Ingress Gateway

**Table 3-37 PLMN Ingress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| ingressServer.keepAlive.idleTime | This is an optional parameter.<br>Time after which keep alive will be tried after successful response from the peer. | 180 Sec | Integer |
| ingressServer.keepAlive.interval | This is an optional parameter.<br>The interval after which it should retry in case of failure. | 60 Sec | Integer |
| routesConfig.metadata.requestTimeout | This is a mandatory parameter.<br>requestTimeout is used to set timeout at route level. Value should be in milliseconds. | 2600 ms | Integer |


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**Table 3-37 (Cont.) PLMN Ingress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| routesConfig.metadata.requiredTime | This is a mandatory parameter (Applicable only if isSbiTimerEnabled is true).<br>requiredTime is minimum time below which request will be rejected if isSbiTimerEnabled is true.<br>Value should be in milliseconds. | 3000 ms | Integer |
| dnsRefreshDelay | This is an optional parameter.<br>This value represents the Time taken to refresh the DNS entries for a destination | 120000 (ms) | Integer |
| globalIngressRateLimiting.duration | This is a mandatory parameter (Applicable only if globalIngressRateLimiting.enabled is true).<br>Iterations of time duration(In seconds) for which bucketCapacity and refillRate are reset. | 1 (Sec) | Integer |
| gracefulShutdown.gracePeriod | This is an optional parameter.<br>Grace period to wait for active requests to be executed. If there are no active requests then this period is neglected<br># 's' in case of seconds and 'm' in case of minutes | 1 min | Integer |
| commonCfgServer.pollingInterval | This is a mandatory parameter (Applicable only if commonCfgClient.enabled is set to true).<br>This is the interval between two subsequent polling requests from config client to server | 5000 | Integer |


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**Table 3-37 (Cont.) PLMN Ingress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| connectionTimeout | This is a mandatory parameter.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | 60 ms | Integer |
| jettyIdleTimeout | This is a mandatory parameter.<br>Used for clearing out idle connections on Jetty Client<br>Note: Jetty Idle timeout provides a waiting period before cleaning up the TCP socket when the client has sent a GOAWAY but the server never responded with GOAWAY. It is recommended that all NFs must set Jetty Idle timeout to a non-zero value to be resilient to bad peers that do not respond to a GOAWAY. | -1 | Integer |
| nettyIdleTimeout | This is a mandatory parameter.<br>Netty server Idle Timeout value | 120000000 ms | Integer |

### N32 Egress Gateway

**Table 3-38 N32 Egress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| dnsRefreshDelay | This is an optional parameter.<br>This value represents the Time taken to refresh the DNS entries for a destination. | 10000 (ms) | Integer |


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**Table 3-38 (Cont.) N32 Egress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `connectionTimeout` | This is an optional parameter.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | 60 (ms) | Integer |
| `requestTimeout` | This is an optional parameter.<br>The configuration for request timeout for the call from Egress Gateway to the producer NF. | 1500 (ms) | Integer |
| `gracefulCloseDelay` | This is a mandatory parameter.<br>gracefulCloseDelay value should be positive value greater than requestTimeout and lesser than jettyIdleTimeout.<br>If gracefulCloseDelay is set to 0 then default value of 30000 ms will be considered internally | 2000 (ms) | Integer |
| `gracefulShutdown.gracePeriod` | This is an optional parameter.<br>Grace period to wait for active requests to be executed. If there are no active requests then this period is neglected.<br>'s' in case of seconds and 'm' in case of minutes | 1 min | Integer |
| `sepp.removeUnusedProxyAfter` | This is an optional parameter (If not added, default value is picked).<br>Time in minutes after which unused proxy beans are removed | 30 (min) | Integer |


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**Table 3-38 (Cont.) N32 Egress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| jettyIdleTimeout | This is a mandatory parameter.<br>Used for clearing out idle connections on Jetty Client<br>Note: Jetty Idle timeout provides a waiting period before cleaning up the TCP socket when the client has sent a GOAWAY but the server never responded with GOAWAY. It is recommended that all NFs must set Jetty Idle timeout to a non-zero value to be resilient to bad peers that do not respond to a GOAWAY. | -1 | Integer |
| nettyIdleTimeout | This is a mandatory parameter.<br>Netty server Idle Timeout value | 120000000 ms | Integer |

### N32 Ingress Gateway

**Table 3-39 N32 Ingress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| ingressServer.keepAlive.idleTime | This is an optional parameter.<br>Time after which keep alive will be tried after successful response from the peer | 180 (ms) | Integer |
| ingressServer.keepAlive.interval | This is an optional parameter.<br>The interval after which it should retry in case of failure | 60 sec | Integer |
| routesConfig.metadata.requestTimeout | This is a mandatory parameter.<br>requestTimeout is used to set timeout at route level. Value should be in milliseconds. | 1200 ms | Integer |


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**Table 3-39 (Cont.) N32 Ingress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| routesConfig.metadata.requiredTime | This is a mandatory parameter (Applicable only if isSbiTimerEnabled is set to true).<br>requiredTime is minimum time below which request will be rejected if isSbiTimerEnabled is true.<br>Value should be in milliseconds. | 3000 | Integer |
| commonCfgServer.pollingInterval | This is a mandatory parameter (Applicable only if commonCfgClient.enabled is set to true).<br>This is the interval between two subsequent polling requests from config client to server | 5000 | Integer |
| dnsRefreshDelay | This is an optional parameter.<br>Dns Refresh Delay in milli-seconds | 120000 (ms) | Integer |
| globalIngressRateLimiting.duration | This is a mandatory parameter (Applicable only if globalIngressRateLimiting.enabled).<br>Iterations of time duration(In seconds) for which bucketCapacity and refillRate are reset. | 1 (Sec) | Integer |
| gracefulShutdown.gracePeriod | This is an optional parameter.<br>Grace period to wait for active requests to be executed<br># If there are no active requests then this period is neglected | 1 (min) | Integer |
| connectionTimeout | This is an optional parameter.<br>This value represents connectTimeout the max time, in milliseconds, a connection can take to connect to destinations.<br>Zero value means infinite timeout. | 60 (ms) | Integer |


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**Table 3-39 (Cont.) N32 Ingress Gateway**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| jettyIdleTimeout | This is a mandatory parameter.<br>Used for clearing out idle connections on Jetty Client<br>Note: Jetty Idle timeout provides a waiting period before cleaning up the TCP socket when the client has sent a GOAWAY but the server never responded with GOAWAY. It is recommended that all NFs must set Jetty Idle timeout to a non-zero value to be resilient to bad peers that do not respond to a GOAWAY. | -1 | Integer |
| nettyIdleTimeout | This is a mandatory parameter.<br>Netty server Idle Timeout value | 120000000 ms | Integer |

### Global Parameters

**Table 3-40 Global Parameters**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| retryInterval | This is a mandatory parameter.<br>Retry interval | 300000 (ms) | Integer |
| altServiceReqTimeout | This is a mandatory parameter.<br>alternate route service http request timeout value. | 3000 (ms) | Integer |
| altServiceLookupInterval | This is a mandatory parameter.<br>alternate route service lookup interval. | 3000 (ms) | Integer |
| test.config.timeout | This is a mandatory parameter.<br>Estimated total time required for SEPP deployment and helm test command completion. | 180 (Sec) | Integer |


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**Table 3-40 (Cont.) Global Parameters**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `atsSpecificTimeouts.n32fCacheRefreshTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets the following timeout values for cn32f and pn32f microservice of SEPP:<br>• cacheRefreshTimeout<br>• securityCacheRefreshTimeout<br>• topologyhidingCacheRefreshTimeout<br>• nrfDiscoveryCacheRefreshTimeout | 1000 | Integer |
| `atsSpecificTimeouts.n32fRequestTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets requestTimeout for cn32f and pn32f microservices of SEPP. | 2000 | Integer |
| `atsSpecificTimeouts.egwRequestTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets requestTimeout for n32-egress-gateway and plmn-egress-gateway microservices of SEPP. | 2000 | Integer |
| `atsSpecificTimeouts.igwRequestTimeout` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets requestTimeout for n32-ingress-gateway microservice of SEPP. | 5000 | Integer |
| `atsSpecificTimeouts.pn32fEvictSanHeaderCacheDelay` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets evictSanHeaderCacheDelay for pn32f microservice of SEPP. | 100 | Integer |


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**Table 3-40 (Cont.) Global Parameters**

| Parameter Name | Description | Default Value | Data Type |
|---|---|---|---|
| `atsSpecificTimeouts.configMgrEgwRerouteAttempts` | This is a mandatory parameter (if `atsSpecificDeployment` is set to true).<br>This parameter sets sbiRoutingErrorActionSets attempts of config-mgr service in case of alternate routing. | 3 | Integer |

## 3.1.21 SEPP Configurable Parameters for OCI Deployment

This section includes information about the SEPP configurable parameters for OCI deployment.

**Table 3-41 SEPP Configurable Parameters for OCI Deployment**

| Parameter | Description | Details |
|---|---|---|
| `openTelemetry.jaeger.collector.httpHost` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: occne-tracer-jaeger-collector.occne-infra |
| `n32-ingress-gateway.openTelemetry.jaeger.httpExporter.host` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| `n32-egress-gateway.openTelemetry.jaeger.httpExporter.host` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| `plmn-ingress-gateway.openTelemetry.jaeger.httpExporter.host` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| `plmn-egress-gateway.openTelemetry.jaeger.httpExporter.host` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| `alternate-route.openTelemetry.jaeger.httpExporter.host` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| `pn32f-svc.openTelemetry.jaeger.httpExporter.host` | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |


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**Table 3-41 (Cont.) SEPP Configurable Parameters for OCI Deployment**

| Parameter | Description | Details |
|---|---|---|
| cn32f-svc.openTelemetry.jaeger.httpExporter.host | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| cn32c-svc.openTelemetry.jaeger.httpExporter.host | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| pn32c-svc.openTelemetry.jaeger.httpExporter.host | This is an optional parameter.<br>openTelemetry host. | Data Type: String<br>Range: NA<br>Default Value: jaeger-collector.cne-infra |
| cn32c-svc.openTelemetry.jaeger.httpExporter.port | This is an optional parameter.<br>openTelemetry port. | Data Type: Integer<br>Range: NA<br>Default Value: 4318 |
| cn32c-svc.openTelemetry.jaeger.logSpans | This is an optional parameter.<br>openTelemetry logspans. | Data Type: boolean<br>Range: true or false<br>Default Value: false |
| cn32c-svc.openTelemetry.jaeger.probabilisticSamplingRate | This is an optional parameter.<br>Trace capture in percentage. | Data Type: Float<br>Range: NA<br>Default Value: 0.5 (Note: it means 50%) |
| cn32c-svc.enableOpenTelemetry | This is an optional parameter.<br>This parameter enables the openTelemetry. | Data Type: boolean<br>Range: true or false<br>Default Value: false |

This section includes information about perf-info configurable parameters for OCI deployment of the SEPP.

**Table 3-42 perf-info Configurable parameters for OCI Deployment**

| Parameter | Description | Details |
|---|---|---|
| ociMetrics.apiBodyParamNamespace | This is a conditional parameter.<br>This is the metrics namespace to use when searching for metric data points to aggregate. Mandatory for integration with OCI metrics. | Data Type: String<br>Range: NA<br>Default Value: NA |
| ociMetrics.apiBodyParamTimeRangeSecs | This is an optional parameter.<br>This is the time range that should contain at least one metric data point. The guidance is to set it to 2x scraping interval (interval in which metrics is read from pods and reported to OCI).<br>. | Data Type: Integer<br>Range: 30 to 600<br>Default Value: 360 |


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**Table 3-42 (Cont.) perf-info Configurable parameters for OCI Deployment**

| Parameter | Description | Details |
|---|---|---|
| `ociMetrics.apiQueryParamCompartmentId` | This is an optional parameter.<br>This is the OCID (Oracle Cloud ID) of the compartment containing the NF. Mandatory for integration with OCI metrics. | Data Type: Integer<br>Range: NA<br>Default Value: NA |
| `ociMetrics.clientTimeoutConnectionTimeoutSecs` | This is an optional parameter.<br>This is the number of seconds to wait for client to establish a connection to the service. | Data Type: Integer<br>Range: 1- 60<br>Default Value: 1 |
| `ociMetrics.clientTimeoutReadTimeoutSecs` | This is an optional parameter.<br>This is the number of seconds the client will wait for the service to send a response. | Data Type: Integer<br>Range: 1- 60<br>Default Value: 1 |
| `ociMetrics.enabled` | This is an optional parameter.<br>This parameter indicates whether the integration with OCI metrics is enabled or not. | Data Type: Boolean<br>Range: True or False<br>Default Value: False |
| `ociMetrics.servicePrettyName` | This is an optional parameter.<br>This is the OCI Monitoring service pretty name used in metrics generated for debugging or observability. | Data Type: String<br>Range: NA<br>Default Value: OCIMONITORING |
| `summarizeMetricsDataSleepMs` | This is an optional parameter.<br>The sleep time to handle too many requests. | Data Type: Integer<br>Range: NA<br>Default Value: 300 |
| `nrfclient.perf-info.tagNamespace` | This is a mandatory parameter.<br>Specifies the Kubernetes namespace. | Data Type: String<br>Range: NA<br>Default Value: namespace<br>**Note**: In OCI deployment, the value must be k8Namespace. |

# 3.2 Configuring SEPP for NRF Interaction

This section provides the necessary steps to configure the SEPP for interaction with the Network Repository Function (NRF). The NRF acts as the central directory for all network functions in the 5G core, allowing SEPP to discover, authorize, and manage secure communication with other NFs, particularly for inter-operator roaming scenarios.

**Step 1: Configuring NRF in SEPP**

User need to modify the SEPP custom values file to configure the NRF for SEPP. Following parameters must be set and values should be same in both sections.

**Config-mgr-svc microservice settings:**

```
nrfAutoRouteCreation: true
  enableScpDeployment: false
  nrfRoutingErrorCriteriaSets: [{"id": "nrf_criteria_1", "method": ["GET",
"POST", "PUT", "DELETE", "PATCH"], "response": {"statuses": [{"status": [500,
```


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```
503, 504], "statusSeries": "5xx"}], "headersMatchingScript":
"headerCheck,server,via,.*NRF.*"}}, {"id": "nrf_criteria_0", "method":
["GET", "POST", "PUT", "DELETE", "PATCH"], "exceptions":
["java.util.concurrent.TimeoutException", "java.net.SocketException",
"java.net.SocketTimeoutException", "java.net.UnknownHostException",
"java.net.ConnectException", "java.net.NoRouteToHostException"]}]
  nrfRoutingErrorActionSets: [{"id": "nrf_action_0", "action": "reroute",
"attempts": 2, "blacklist": {"enabled": false, "duration": 60000}}]
  nrfProfile:
    enableVirtualNrfResolution: false
    static:
      primaryNrfApiRoot: ocnrf-ingressgateway.ocnrf:80
      secondaryNrfApiRoot: null
      nrfScheme: http
    virtual:
      virtualNrfFqdn: nrf.virtual.fqdn
      virtualNrfScheme: http
```

**Note**

- The Config Manager service parameters will create the necessary NRF routes at plmn-egress-gateway.
- Starting from Release 25.2.200, ensure that `nrfAutoRouteCreation` flag is enabled to activate the NRF Route Automation feature during SEPP installation.

**Step 2: Configuring NRF Client Microservice**

In the **NRF Client microservice**, configure the parameters as follows:

```
nrf-client:
    # This config map is for providing inputs to NRF-Client
    configmapApplicationConfig: &configRef
      profile: |-
        [appcfg]
        primaryNrfApiRoot= ocnrf-ingressgateway.ocnrf:80
        secondaryNrfApiRoot=
        nrfScheme= http
        enableVirtualNrfResolution=false
        virtualNrfFqdn=nrf.virtual.fqdn
        virtualNrfScheme=http

nrfRetryConfig=[{"serviceRequestType":"ALL_REQUESTS","primaryNRFRetryCount":1,
"nonPrimaryNRFRetryCount":1,"alternateNRFRetryCount":-1,"errorReasonsForFailur
e":
["503","504","500","SocketTimeoutException","JsonProcessingException","Unknown
HostException","NoRouteToHostException","IOException"],"gatewayErrorCodes":
["503"],"requestTimeout":10},
{"serviceRequestType":"AUTONOMOUS_NFREGISTER","primaryNRFRetryCount":1,"nonPri
maryNRFRetryCount":1,"alternateNRFRetryCount":-1,"errorReasonsForFailure":
["503","504","500","SocketTimeoutException","JsonProcessingException","Unknown
HostException","NoRouteToHostException","IOException"],"gatewayErrorCodes":
["503"],"requestTimeout":10}]
```


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```
healthCheckConfig={"healthCheckCount":-1,"healthCheckInterval":5,"requestTimeo
ut":10,"errorReasonsForFailure":
["503","504","500","SocketTimeoutException","IOException"],"gatewayErrorCodes"
:[]}
```

> **Note**
>
> The NRF Route Automation feature will not be applied if either `atsSpecificDeployment` or `enableNif` is set to true.

The following Helm parameters can be configured for the NRF Route Automation:

**Table 3-43 NRF Route Automation Helm Configuration**

| Parameter | Description | Details |
|---|---|---|
| `config-mgr-svc.nrfAutoRouteCreation` | This is a mandatory parameter. This parameter enables the automatic creation of NRF routes at the PLMN-EGW for routing both inter-NRF and intra-NRF traffic, as well as for handling inter and intra SBI requests destined for the NRF.<br>• For SEPP installation, this flag must be set to true.<br>• For upgrades from supported release N to 25.2.2x, this flag should be set to false.<br>• For upgrades from version 25.2.2x to later releases, the flag should be set to true in order to update the NRF routes. | DataType: Boolean<br>Range: true or false<br>Default Value: true |
| `config-mgr-svc.enableScpDeployment` | This is a mandatory parameter.<br>Indicates if SEPP is deployed with SCP. Set to true if SCP is present. | DataType: Boolean<br>Range: true or false<br>Default Value: false |
| `config-mgr-svc.nrfProfile.enableVirtualNrfResolution` | This is a mandatory parameter.<br>Specifies whether Virtual FQDN is required for NRF configuration. When set to true, it enables virtual NRF session retry by Alternate routing service. | DataType: Boolean<br>Range: true or false<br>Default Value: false |
| `config-mgr-svc.nrfProfile.static.primaryNrfApiRoot` | This is a mandatory parameter.<br>Primary NRF FQDN address (combination of Hostname and Port). Used if `global.nrfProfile.enableVirtualNrfResolution` is false. | DataType: string<br>Default Value: NA |


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**Table 3-43 (Cont.) NRF Route Automation Helm Configuration**

| Parameter | Description | Details |
|---|---|---|
| `config-mgr-svc.nrfProfile.static.secondaryNrfApiRoot` | This is a mandatory parameter.<br>Secondary NRF FQDN address (combination of Hostname and Port). Used if `global.nrfProfile.enableVirtualNrfResolution` is false. | DataType: string<br>Default Value: NA |
| `config-mgr-svc.nrfProfile.static.nrfScheme` | This is a mandatory parameter.<br>Scheme of primary and secondary NRF (Possible values: http/https). | DataType: string<br>Default Value: http |
| `config-mgr-svc.nrfProfile.virtual.virtualNrfFqdn` | This is a mandatory parameter.<br>Virtual FQDN for querying static list of routes. Used if `global.nrfProfile.enableVirtualNrfResolution` is true. | DataType: string<br>Default Value: NA |
| `config-mgr-svc.nrfProfile.virtual.virtualNrfScheme` | This is a mandatory parameter.<br>Virtual scheme supported by NRF (Possible values: http/https). Used if `global.nrfProfile.enableVirtualNrfResolution` is true. | DataType: string<br>Default Value: http |
| `config-mgr-svc.nrfRoutingErrorCriteriaSets` | This is an optional parameter.<br>List of errors/exceptions for alternate routing between NRFs. This is similar to Gateways Criteria Sets. | DataType: list<br>Default Value: NA |
| `config-mgr-svc.nrfRoutingErrorActionSets` | This is an optional parameter.<br>Action sets to be configured for multiple NRFs.This is similar to Gateway Action Sets. | DataType: list<br>Default Value: NA |

# 3.3 Configuring DNS for FQDN Resolution

Refer the following document to configure the DNS Server for Inter PLMN FQDN resolution in CNE Environment:

*Oracle Communications Cloud Native Core, Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide.*

> **Note**
>
> For any other environment other than CNE, refer the corresponding document for configuring the DNS Server for FQDN resolution.


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# 3.4 Routing Across Multiple Endpoints

> **Note**
>
> It is mandatory to configure Remote SEPP and Remote SEPP Set to allow traffic to flow between partner SEPPs.

SEPP provides flexible and configurable mechanisms for routing SBI and non-SBI traffic across multiple endpoints, supporting both inter-PLMN and intra-PLMN communication scenarios.

Traffic handling, such as routing, load balancing and load sharing is fully configurable based on the deployment architecture and configurations. Depending on the operational and performance requirements, users can define specific routing behaviours through configuration profiles.

The SEPP allows the operator to select from a range of supported routing configurations to ensure an efficient traffic distribution. These configurations enable:

- **Load Sharing and Balancing**: Parallel utilization of multiple endpoints and SBI message flows based on priority and weight using SRV records.
- **Endpoint Routing**: Directed forwarding of messages to specific SEPP peer endpoints.

The following sections provide detailed descriptions of each supported traffic routing mechanism.

## 3.4.1 Traffic Routing for Inter-PLMN Communication

Following are the different traffic management and routing methods for Inter-PLMN traffic.

### 3.4.1.1 Failover Routing Across Remote SEPPs

This routing mechanism enables SEPP to route inter-PLMN traffic through a statically configured list of Remote SEPP FQDNs. Messages are sent to the primary FQDN. If the primary SEPP is unreachable, the SEPP retries with the secondary FQDN, followed by the tertiary if needed. This ensures a predictable and reliable switch to the next available SEPP if one fails. This is a default routing mechanism for inter-plmn communication. This can be achieved by providing static FQDN (seppFqdn) in Remote SEPP configuration using CNC Console.

For more details, refer to "Alternate Routing Across Remote SEPPs" section in *Cloud Native Core, Security Edge Protection Proxy User Guide*.

### 3.4.1.2 Virtual FQDN or Virtual Host Based Load sharing Across Remote SEPPs

This routing mechanism enables SEPP to load share traffic using Virtual FQDNs or Virtual Hosts through DNS SRV queries. It supports load sharing across multiple Remote SEPPs by utilising DNS SRV records using alternate route service and share load on the basis of priority or weight. This can be achieved by providing virtual FQDN OR virtual Host in Remote SEPP's using CNC Console.


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For more details, refer to "Load Sharing among Multiple Remote SEPP Nodes" in *Cloud Native Core, Security Edge Protection Proxy User Guide*.

## 3.4.2 Traffic Routing for Intra-PLMN Communication

Following are the different traffic management and routing methods for Intra-PLMN traffic.

### 3.4.2.1 3gpp-sbi-target-apiRoot Header Based Routing Across Producer NFs

This is the default routing mechanism where messages are forwarded to backend NFs in core network based on the 3gpp-sbi-target-apiRoot header value. The corresponding default route is automatically provisioned during the SEPP installation.

### 3.4.2.2 Failover Routing Across Producer NFs

This routing mechanism allows SEPP to route intra-PLMN traffic towards backend NFs (Example: NRF, SCP, and UDR) using statically configured FQDNs. Traffic is directed to a primary FQDN, with automatic failover to secondary and tertiary FQDNs upon failure. This can be achieved by providing static FQDN in peer configuration on plmn-egress-gateway using CNC Console. This behaviour is configured through CNC Console using defined Peers, Peersets, and routes based on network requirements.

For more details, refer to "Support for Core Networks with or without SCP/Routing Proxy" section in *Cloud Native Core, Security Edge Protection Proxy User Guide*.

### 3.4.2.3 Virtual FQDN or Virtual Host Based Load sharing Across Producer NFs

This feature enables SEPP to load share traffic using Virtual FQDNs or Virtual Hosts through DNS SRV queries. It supports load sharing across multiple backend NFs by utilising DNS SRV records using alternate route service and share load on the basis of priority or weight. This can be achieved by providing Virtual FQDN or Virtual Host in Peer configuration on plmn-egress-gateway using CNC Console.

For more details, refer to "Alternate Routing and Load sharing based on the DNS SRV Record for Home Network Functions" in *Cloud Native Core, Security Edge Protection Proxy User Guide*.

> **Note**
>
> Load sharing is supported only through DNS SRV records.


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# 4 Upgrading SEPP

This chapter provides information about upgrading Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP) deployment to the latest release. It is recommended to perform SEPP upgrade in a specific order. For more information about the upgrade order, see *Oracle Communications Cloud Native Core, Solution Upgrade Guide.*

The SEPP upgrade procedures for single cluster and multicluster deployments. SEPP instance can be upgraded from current version to the latest version using Helm upgrade command.

Following steps must be performed while upgrading the SEPP:

1. SEPP DB Backup
2. SEPP Upgrade

## 4.1 Supported Upgrade Paths

The following table lists the supported upgrade paths for SEPP:

> **Note**
>
> - SEPP delpoyed in SEPP mode can be upgraded only to SEPP mode.
> - SEPP deployed in Roaming Hub mode can be upgraded only to Roaming Hub mode.
> - SEPP deployed in Hosted SEPP mode can be upgraded only to Hosted SEPP mode.
> - Before proceeding with SEPP helm upgrade in this deployment model, SEPP instance database backup must be taken and stored in a location which can be easily restored. Refer SEPP Instance DB Backup section for more information.

> **Note**
>
> Since version 25.2.200 is the initial release of Hosted SEPP mode, upgrading to this release is not supported for Hosted SEPP mode.

**Table 4-1 Supported Upgrade Paths**

| Source SEPP Release | Target SEPP Release |
|---|---|
| 25.2.1xx | 25.2.200 |
| 25.1.2xx | 25.2.200 |


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**Table 4-2 Supported Upgrade Paths**

| Source Roaming Hub Release | Target Roaming Hub Release |
|---|---|
| 25.2.1xx | 25.2.200 |
| 25.1.2xx | 25.2.200 |

> **Note**
> - SEPP must be upgraded before upgrading cnDBTier.

# 4.2 Upgrade Strategy

SEPP supports in-service upgrade. The supported upgrade strategy is `RollingUpdate`. The rolling update strategy is a gradual process that allows you to update your Kubernetes system with only a minor effect on performance and no downtime. The advantage of the rolling update strategy is that the update is applied Pod-by-Pod so the greater system can remain active.

> **Note**
>
> It is recommended to perform SEPP upgrade in a specific order. For more information about the upgrade order, see *Oracle Communications Cloud Native Core, Solution Upgrade Guide*.

The following engineering configuration parameters are used to define upgrade strategy:

- `upgradeStrategy` parameter indicates the update strategy used in SEPP.
- `maxUnavailable` parameter determines the maximum number of pods that can be unavailable during upgrade.

**Predefined Upgrade Strategy Value**

**Table 4-3 Predefined Upgrade Strategy Value**

| Microservice | Upgrade Value (maxUnavailable) |
|---|---|
| nf-mediation | 1 |
| n32-ingress-Gateway | 25% |
| n32-egress-Gateway | 25% |
| plmn-ingress-Gateway | 25% |
| plmn-egress-Gateway | 25% |
| pn32f-svc | Not Applicable<br>**Note**: maxSurge=25% attribute is used for this microservice. |
| cn32f-svc | Not Applicable<br>**Note**: maxSurge=25% attribute is used for this microservice. |


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**Table 4-3 (Cont.) Predefined Upgrade Strategy Value**

| Microservice | Upgrade Value (maxUnavailable) |
|---|---|
| pn32c-svc | Not Applicable<br>**Note**: maxSurge=25% attribute is used for this microservice. |
| cn32c-svc | Not Applicable<br>**Note**: maxSurge=25% attribute is used for this microservice. |
| config-mgr-svc | Not Applicable<br>**Note**: maxSurge=25% attribute is used for this microservice. |
| Appinfo | 25% |
| ocpm-config | 50% |
| performance | 50% |
| sepp-nrf-client-nfmanagement | Single Replica |
| sepp-nrf-client-nfdiscovery | 25% |
| coherence-svc | 1 |
| alternate-route | 25% |

> **Note**
>
> When SEPP is deployed with OCCM, follow the specific upgrade sequence as mentioned in *Oracle Communications, Cloud Native Core Solution Upgrade Guide*.

# 4.3 Preupgrade Tasks

This section provides information about preupgrade tasks to be performed before upgrading SEPP.

While upgrading an existing SEPP deployment, the running set of containers and pods are replaced with the new set of containers and pods. However, if there is no change in the pod configuration, the running set of containers and pods are not replaced.

> **Note**
>
> - No configuration should be performed during the upgrade.
> - Do not exit from Helm upgrade command manually. After running the Helm upgrade command, it takes some time (depending upon the number of PODs to upgrade) to upgrade all of the services. In the meantime, you must not press "ctrl+c" to come out from Helm upgrade command. It may lead to anomalous behavior.


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**Note**

- The `releaseVersion` value in the `ocsepp_values.yaml` file can not be changed.
- While performing an upgrade from an older release to a newer release, you must align the `ocsepp_values.yaml` file of the new release as per the `ocsepp_values.yaml` file of the older release. Ensure that you do not change any Helm parameter values. Do not enable any new feature during the upgrade. Any `ocsepp_values.yaml` parameter must not be changed while upgrading unless explicitly specified in this guide. For information about enabling any new feature through Helm parameters, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*.
- Install or upgrade the network policies, if applicable. For more information, see Configuring Network Policies.
- While performing an upgrade, the Global Rate Limiting feature must be disabled on both the ingress gateways (n32-ingress-gateway, plmn-ingress-gateway) in the source `custom_values.yaml` file.

```
rateLimiting:
    enabled: false
  rssRateLimiter:
    enabled: false
  globalIngressRateLimiting:
    enabled: false
```

- After the upgrade, the Cat-3 Previous Location Check feature must be restored to its previous state, if the feature was enabled previously.

### Preupgrade Steps

1. Keep current custom_values.yaml file as backup, that is, `ocsepp_custom_values_<version>.yaml` for upgrading.
2. Update the new *custom_values.yaml* defined for target SEPP release. See Customizing SEPP section for more details about Helm configurable parameters.
3. Perform sanity check using Helm test. See the Performing Helm Test section for the Helm test procedure.
4. Before starting upgrade, take a manual backup of SEPP REST based configuration. It will help if manual backup is taken in case the data need to be restored before the upgrade. For REST API configuration details, see SEPP Instance DB Backup section to take the backup.
5. If you are upgrading from version 24.3.x to target SEPP release, follow the steps below:
   - Before starting the procedure to upgrade, perform the following tasks:
     - Perform the following scenarios for enabling or disabling the Open Telemetry tracing as per the requirement, when upgrading from 24.3.x to target SEPP release:
       * To enable tracing in the target SEPP release, perform the following:
         a. Ensure that Jaeger collector service is up and running inside occne-infra, with port specified in `ocsepp_custom_values_<version>.yaml` file.


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b. The following flag must be set to true to enable the Open Telemetry for n32c and n32f SEPP services:

```
enableOpenTelemetry: true
```

c. Ensure that following configuration is added or updated in 24.3.x in `ocsepp_custom_values_<version>.yaml` in n32c and n32f microservices.

```
#Jaeger Tracing
jaegerTracingEnabled: false
bodyInTraceEnabled: false
otel:
  jaeger:
    udpSender:
      host: "jaeger-collector.cne-infra"
      port: 4318
    logSpans: false
    probabilisticSamplingRate: 0.1
```

d. Ensure that following configuration is added or updated in 24.3.x in `ocsepp_custom_values_<version>.yaml` in n32-ingress-gateway, plmn-ingress-gateway, n32-egress-gateway, and plmn-egress-gateway.

```
# enable jaeger telemetry tracing
jaegerTelemetryTracingEnabled: false

openTelemetry:
  jaeger:
    httpExporter:
      host: "jaeger-collector.cne-infra"
      port: 4318
    probabilisticSampler: 0.5
```

* To disable tracing for n32c and n32f microservices, the following flag must be set to false in `eocsepp_custom_values_<version>.yaml` file:

```
enableOpenTelemetry: 'false'
```

### SEPP Instance DB Backup

This section describes the procedure to perform the DB backup of SEPP Instance.

Prerequisites:

- MySQL NDB cluster should be in a healthy state.
- Every database node of the MySQL NDB cluster should be in running state.
- For cnDBTier to verify the prerequisites, check mysql pod is up and running.
- Log in to the deployment and run the following command to take the dump (backup) of the database. The user is required to enter the password.

```
kubectl exec -i -n <namespace> <sql-node> -- mysqldump --single-
transaction --no-tablespaces --no-create-info -h 127.0.0.1 -u <username> -
p <sepp database-name> | gzip > <backup_filename>.sql.gz
```


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For example:

```
kubectl exec -i -n occne-ndb ndbappmysqld-0 -- mysqldump --single-
transaction --no-tablespaces --no-create-info
      -h 127.0.0.1 -u seppusr -p seppdb_sepp1 | gzip >
sepp_sepp1_dbBackup.sql.gz
```

> **Note**
>
> The operator must ensure there is enough space on the current directory in order to save the backup file.

### Verifying cnDBTier

Perform the following steps while upgrading from SEPP 24.2.x or earlier versions to SEPP 24.3.x:

1. Run the following command to check the current plugin:

   ```
   SELECT user, host, plugin FROM mysql.user;
   ```

   Example:

   ```
   SELECT user, host, plugin FROM mysql.user;
   ```

   Output:

   ```
   user             | host      | plugin                |
   +------------------+-----------+-----------------------+
   | cnccusr          | %         | caching_sha2_password |
   | occnerepluser    | %         | caching_sha2_password |
   | occneuser        | %         | mysql_native_password |
   | seppuser1        | %         | caching_sha2_password |
   | seppuser3        | %         | mysql_native_password |
   | healthchecker    | localhost | caching_sha2_password |
   | mysql.infoschema | localhost | caching_sha2_password |
   | mysql.session    | localhost | caching_sha2_password |
   | mysql.sys        | localhost | caching_sha2_password |
   | root             | localhost | caching_sha2_password |
   +------------------+-----------+-----------------------+
   10 rows in set (0.00 sec)
   ```

2. Run the following command to check the plugin that is associated with the seppuser, and used for the SEPP that is planned to be upgraded:
   Example: `| seppuser3 | % | mysql_native_password |`
3. If the plugin is ‘mysql_native_password’, run the following command to change the plugin from ‘mysql_native_password’’ to ‘caching_sha2_password’:

   ```
   ALTER USER '<username>'@'%' IDENTIFIED WITH caching_sha2_password BY
   '<password>';
   ```


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Example:

```
ALTER USER 'seppuser3'@'%' IDENTIFIED WITH caching_sha2_password BY
'NextGenCne1';
```

4. Run the following command to verify that the plugin is updated:

   ```
   SELECT user, host, plugin FROM mysql.user;
   ```

   The plugin should get updated to 'caching_sha2_password'.
   Output: `| seppuser3 | % | caching_sha2_password |`
5. Wait for some time and verify the health of the SEPP pods. Run the following command to check if the pods are up and running:

   ```
   Kubectl get po -n <namespace>
   ```

> **Note**
>
> If the plugin selected is '`caching_sha2_password`', then the above changes are not required.

# 4.4 Upgrade Tasks

This section includes information about upgrading an existing SEPP deployment.

## 4.4.1 Helm Upgrade

Upgrading an existing deployment replaces the running containers and pods with new containers and pods. If there is no change in the pod configuration, it is not replaced.

Unless there is a change in the service configuration of a microservice, the service endpoints remain unchanged.

## 4.4.2 Upgrading SEPP

Perform the following procedure to upgrade SEPP.

> **Caution**
>
> - Stop the provisioning traffic before you start the upgrade procedure.
> - No configuration should be performed during upgrade.
> - Do not exit from `helm upgrade` command manually. After running the `helm upgrade` command, it takes some time (depending upon the number of pods to upgrade) to upgrade all the services. In the meantime, you must not press "`ctrl+c`" to come out from `helm upgrade` command. It may lead to anomalous behavior.


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**Note**

- If the Helm upgrade results in failure and displays *ConfigMap <Egress Rate Limiting ConfigMap Name> in namespace <Namespace> exists and cannot be imported into the current release: invalid ownership metadata* error, do the following:

  Delete the Egress Rate Limit ConfigMap using the following command: `kubectl delete cm <Egress Rate Limiting ConfigMap Name> -n <namespace>` and run the Helm upgrade again.

1. Untar the latest SEPP package and if required, re-tag and push the images to registry. For more information, see Downloading SEPP package and Pushing the Images to Customer Docker Registry.
2. Modify the `ocsepp_custom_values_25.2.200.yaml` file parameters as per site requirement.
3. Run the following command to upgrade an existing SEPP deployment:
   a. Using local Helm chart:

      ```
      helm upgrade <release_name> <helm_chart> -f
      <ocsepp_customized_values.yaml> --namespace <namespace-name>
      ```

      Example:

      ```
      helm upgrade ocsepp-release ocsepp-25.2.200.tgz -f ocsepp-custom
      values-25.2.200.yaml --namespace seppsvc
      ```

      Where,

      `<release_name>` is the SEPP release name.

      `<helm_chart>` is the Helm chart.

      `<sepp_customized_values.yaml>` is the latest custom-values.yaml file.

      For example, `ocsepp-25.2.200.0.0.custom-values.yaml`

      `<namespace>` is namespace of SEPP deployment.

   b. Using chart from Helm repo:

      ```
      helm upgrade <release_name> <helm_repo/helm_chart> --version
      <chart_version> -f <ocsepp_customized_values.yaml> --namespace
      <namespace>
      ```

      Example:

      ```
      helm upgrade ocsepp-release ocsepp-25.2.200.tgz --version
      <chart_version> -f ocsepp-custom values-25.2.200.yaml --namespace
      seppsvc
      ```

      Where,

      `<release_name>` is the SEPP release name.


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<helm_chart> is the Helm chart.

<sepp_customized_values.yaml> is the latest custom-values.yaml file.

For example, ocsepp-25.2.200.0.0.custom-values.yaml

<namespace> is namespace of SEPP deployment.

4. Run the following command to check the status of the upgrade:

```
helm status <release_name> --namespace <namespace-name>
```

Where,

<release_name> is the SEPP release name.

<namespace> is namespace of SEPP deployment.

For example:

```
$ helm status ocsepp-release --namespace seppsvc
```

Sample output of a successful upgrade:

```
[cloud-user@occne-22-2-0-cluster-bastion-1 ocsepp-25.2.200]$  helm history
ocsepp-release -n seppsvc
REVISION        UPDATED                         STATUS
CHART           APP VERSION     DESCRIPTION
1               Wed May  13 07:19:50 2023        superseded
ocsepp-25.2.200   25.2.200.0.0      Install complete
2               Wed May  13 07:31:21 2023        superseded
ocsepp-25.2.200   25.2.200.0.0      Upgrade complete
3               Wed May  13 07:50:08 2023        superseded
ocsepp-25.2.200   25.2.200.0.0      Rollback to 1
```

5. Perform sanity check using Helm test. See the Performing Helm Test section for the Helm test procedure.
6. If the upgrade fails, see Upgrade or Rollback failure in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide*.

> **Note**
>
> For more information about Upgrading SEPP for NRF Configuration, refer 'Upgrading SEPP for NRF Configuration' section in *Cloud Native Core, Security Edge Protection Proxy User Guide*.


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# 4.5 Postupgrade Tasks

> **Note**
>
> - To upgrade cnDBTier with resources recommended for SEPP, customize the `ocsepp_dbtier_25.2.200_custom_values_25.2.200.yaml` file in the `ocsepp_csar_25_2_2_0_0_0.zip` folder with the required deployment parameters. cnDBTier parameters will vary depending on whether the deployment is on a single site, two site, or three site. For more information about cnDBTier upgrade, see *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*.
> - To automate the lifecycle management of the certificates through OCCM, you can migrate the lifecycle of certificates and key management from manual to OCCM. For more information, see "Introducing OCCM in an Existing NF Deployment" section in *Oracle Communications Cloud Native Core, Certificate Management User Guide*. SEPP application does not manage the LCM of the certificate and key.

## 4.5.1 Alert Configuration

This section describes how to modify or update SEPP alerts as needed, based on requirements, after performing the upgrade.

For more details, see the following sections:

Alert Configuration

- Configuring Alerts for CNE 1.8.x and Previous Versions
- Configuring Alerts for CNE 1.9.x and Higher Versions
- Configuring SEPP Alerts for non-OCCNE Versions
- Configuring Alerts in OCI


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# 5
# Rolling Back SEPP

This chapter provides information about rolling back Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP) deployment to the previous release. It is recommended to perform SEPP rollback in a specific order. For more information about the rollback order, see *Oracle Communications Cloud Native Core, Solution Upgrade Guide.*

Following steps must be followed while performing rollback:

1. SEPP DB Rollback or Restore
2. SEPP Rollback

> **Note**
>
> It is recommended to verify the copy pasted content especially when the hyphens or any special characters are part of copied content.

> **Note**
>
> Rollback sequence for n-site geo-replicated setup (n = 2, 3, 4)
>
> 1. Begin by rolling back cnDBTier-S(n), followed by SEPP-S(n) and CNC Console-S(n) for the most recent site (Site n).
> 2. Next, move to cnDBTier-S(n-1) and initiate Geo Replication Recovery to sync it with the healthy cnDBTier-S(n). Then, rollback SEPP-S(n-1) and CNC Console-S(n-1).
> 3. Continue the rollback down to Site 1, starting with cnDBTier-S(1) and performing Geo Replication Recovery with the healthy cnDBTier-S(2), followed by rolling back SEPP-S(1) and CNC Console-S(1).
>
> For more details about the georedundancy and rolling back geo-replicated setups, refer to 'Georedundancy' section in the *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide.*

## 5.1 Supported Rollback Paths

The following table lists the supported rollback paths for SEPP:

> **Note**
>
> - SEPP deployed in SEPP mode can be rolled back only to SEPP mode.
> - SEPP deployed in Roaming Hub mode can be rolled back only to Roaming Hub mode.


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**Table 5-1 Supported Rollback Paths**

| Source Release | Target Release |
|---|---|
| 25.2.200 | 25.2.1xx |
| 25.2.200 | 25.1.2xx |

**Table 5-2 Supported Rollback Paths**

| Source Roaming Hub Release | Target Roaming Hub Release |
|---|---|
| 25.2.200 | 25.2.1xx |
| 25.2.200 | 25.1.2xx |

> **Note**
>
> When performing a rollback from 25.2.1x to 24.2.x release, ensure `ndb_allow_copying_alter_table` in cnDBTier is set to ON.

# 5.2 Pre-rollback Tasks

This section describes the tasks to be performed before a rollback.

## 5.2.1 SEPP Instance DB Rollback or Restore

This section provides details of SEPP instance DB Rollback. In case of SEPP Upgrade failure, rollback SEPP DB to previous version by following the below steps.

> **Note**
>
> The latest backup must be used for rollback.

To perform a SEPP DB rollback or Restore:


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**Note**

The following are the summary of steps to be performed:

1. Log in to the deployment cluster, drop the existing database, and create a new database.
2. Run the DB Schema file provided as part of package *<ocsepp_rollback_schema_<version>.sql>* to create the SEPP database schema in the newly created database.
   - Use the schema file from the SEPP version to which you are performing the rollback.
3. Rearrange the DB Dump file (taken during SEPP instance DB backup) sequentially so that there wont be any foreign key constraints issue.
4. Run the following command to restore Database with rearranged sql file:

   ```
   mysql -h 127.0.0.1 -u occneuser -p seppdb_sepp1 < restore.sql
   ```

Perform the following steps to do a SEPP DB rollback or Restore:

1. Run the following command to drop the Database and create a new database:

   ```
   DROP DATABASE <SEPP Database>
   CREATE DATABASE IF NOT EXISTS <SEPP Database>;
   ```

   For example:

   ```
   #To be run in the mysql pod:
   DROP DATABASE seppdb_sepp1;
   CREATE DATABASE IF NOT EXISTS seppdb_sepp1;
   ```

   **Note**

   - The Database should be dropped from all the sites in case of multi site replication.
   - You must take the `<ocsepp_rollback_schema_<version>.sql>` file from the SEPP version to which you are performing the rollback.

2. Copy the DB Schema file provided as part of package into the MySQL pod (<ocsepp_rollback_schema_<version>.sql>).
   Run the following command to copy the DB Schema file to pod:

   ```
   kubectl cp<ocsepp_rollback_schema_<version>.sql> <namespace>/<pod-
   name>:<directory where you want your fileplaced>
   ```


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For example:

```
kubectl cp ocsepp_rollback_schema_<version>.sql gr-cndb-site1/
ndbappmysqld-0:/home/mysql
```

3. Run the following command to connect to the SQL node of the NDB cluster or connect to the cnDBTier:

   ```
   $ kubectl -n <cndbtier_namespace> exec -it <cndbtier_sql_pod_name> -c
   <cndbtier_sql_container_name> -- bash
   ```

   For example:

   ```
   $ kubectl -n cndbtier  exec -it ndbappmysqld-0 -c mysqlndbcluster -- bash
   ```

4. Restore this new database with the DB Schema file provided as part of package (ocsepp_rollback_schema_<version>.sql).
   Run the following command to Restore DB Schema:

   ```
   mysql -h 127.0.0.1 -u root -p <DB name> < <DB Schema file name>
   ```

   For example:

   ```
   mysql -h 127.0.0.1 -u root -p seppdb_sepp1 <
   ocsepp_rollback_schema_<version>.sql
   ```

5. The DB dump has to be rearranged sequentially not to get any foreign key constraints issue. For that, create the ENV variables and run it in a loop.

   a. Run the following command to convert the mysqldump file which was taken as a backup (sql.gz file) to a sql file to rearrange it:
      Unzipping the gz file:

      ```
      gunzip -d <backup_filename>.sql.gz
      ```

      For example:

      ```
      gunzip -d sepp_sepp1_dbBackup.sql.gz
      ```

   b. Rearrange the backup sql file in correct order by using following procedure:

      i. Run the following command to rearrange the Table Data :

         ```
         export KC_TABLES="APP_STATE MEDIATION_CONFIG_RELEASE MEDIATION_RULE
         OCMEDIATION_ROLLBACK_ACTION OCMEDIATION_SYSTEM_OPTIONS
         ROLLBACK_ACTION ReleaseConfig SiteJsonSchemaVersionInfo
         UPGRADE_ROLLBACK_EVENTS common_configuration
         common_configuration_backup snapshot_mapping topic_info
         topic_info_backup configuration_item configuration_item_backup
         NrfLeaderPod leader_election discovery_requests_nologging
         producer_profiles_nologging header topology_body
         roaming_partner_profile n32f_db_context roaming_partner_set plmn
         actual_values pseudo_values topology_option
         default_service_api_list_configuration security_allowed_list_action
         ```


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```
security_allowed_list_content security_allowed_list_rule
security_allowed_list_content_rule sepp_feature_config
mediation_trigger_rule_list mediation_trigger_rule
mediation_trigger_rule_error_config
plmn_validation_header_path_config plmn_validation_body_config
security_plmn_list_action security_allowed_plmn_content
security_plmn_list_rule security_plmn_list_content_rule
sepp_sor_config sepp_sor_allowed_rss_list sepp_sor_url_list
sepp_sor_allowed_url_join sepp_feature_error_config
ingress_rate_limiting message_validation_list_config
message_validation_rule_config message_validation_list_rule_mapping
message_validation_api_config message_validation_feature_config
previous_location_list_config previous_location_rule_config
previous_location_list_rule_config
previous_location_serving_header_config
previous_location_serving_body_config
previous_location_ue_header_config previous_location_ue_body_config
cache_refresh_config egress_rate_limit_config
egress_rate_limit_list_config sepp_service_log_configuration
orig_nw_id_hdr_support verbose_err_rsp_config";
```

ii. Run the following command to create an ENV pointing to the sql file to be filtered:

```
export KC_BACKUP="./<Backup SQL Dump File>";
```

For example:

```
export KC_BACKUP="./sepp_sepp1_dbBackup.sql";
```

iii. Run the following command to verify that the ENV variables are set:

```
echo$KC_TABLES
echo$KC_BACKUP
```

iv. Run the following command to rearrange the dump file to make it in sequential insertion order:

```
for i in $KC_TABLES; do if [ "$i" = "topic_info" ]; then echo
"DELETE FROM \`$i\` WHERE NAME='nrfclient.cfg';"; fi;  grep "INSERT
INTO \`$i\`" "$KC_BACKUP"; done > <file name along with its
location>
```

Example:

```
for i in $KC_TABLES; do if [ "$i" = "topic_info" ]; then echo
"DELETE FROM \`$i\` WHERE NAME='nrfclient.cfg';"; fi;  grep "INSERT
INTO \`$i\`" "$KC_BACKUP"; done > /tmp/restore.sql
```

v. Run the following command to provide execution permission to the file:

```
chmod +x /tmp/restore.sql
```


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6. Run the following command to copy file into the pod:

   ```
   kubectl cp <backup_file name>.sql <namespace>/<pod-name>:<directory where
   you want your file placed>
   ```

   For example:

   ```
   kubectl cp restore.sql cndbtier1/ndbappmysqld-0:/home/mysql
   ```

7. Run the following command to connect to the SQL node of the NDB cluster or connect to the cnDBTier:

   ```
   $ kubectl -n <cndbtier_namespace> exec -it <cndbtier_sql_pod_name> -c
   <cndbtier_sql_container_name>-- bash
   ```

   For example:

   ```
   $ kubectl -n cndbtier  exec -it ndbappmysqld-0 -c mysqlndbcluster -- bash
   ```

8. Populate the Database with data using the file that you have, after filtering the sqldump file.
9. Run the following command to restore Database Data:

   ```
   mysql -h 127.0.0.1 -u root -p <DB name> < <backup_filename>
   ```

   For example:

   ```
   mysql -h 127.0.0.1 -u root -p seppdb_sepp1 < restore.sql
   ```

   > **Note**
   >
   > Verify that the created restore.sql begins with the "INSERT INTO" statement. Anything appended before it must be removed.

10. Log in to the MySQL prompt and confirm that the databases are restored.
11. Run the following command to delete the sql files copied into the pod after the restore process is complete and successful (by logging into the SQL node):

    ```
    rm -rf <DB Schema file name>
    rm -rf <backup_filename>
    ```

    Example:

    ```
    rm -rf ocsepp_rollback_schema_<version>.sql
    rm -rf restore.sql
    ```


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# 5.3 Rollback Steps

Perform this procedure to roll back SEPP deployment from 25.2.200 to the previously supported versions:

**⚠ Caution**

- No configuration should be performed during rollback.
- Do not exit from `helm rollback` command manually. After running the `helm rollback` command, it takes some time (depending upon number of pods to rollback) to rollback all of the services. In the meantime, you must not press "`ctrl+c`" to come out from `helm rollback` command. It may lead to anomalous behavior.
- Ensure that no SEPP pod is in the failed state.
- If the Helm rollback results in failure and displays *Rollback "ocsepp" failed: no ConfigMap with the name "rss-ratelimit-map" found* error, it indicates that Helm is not able to merge current and rollback charts. Then run the Helm rollback again with **--force**.
- If the Helm rollback results in failure and displays *ConfigMap <Egress Rate Limiting ConfigMap Name> in namespace <Namespace> exists and cannot be imported into the current release: invalid ownership metadata* error, do the following:

  Delete the Egress Rate Limit ConfigMap using the following command: `kubectl delete cm <Egress Rate Limiting ConfigMap Name> -n <namespace>` and run the Helm rollback again.

**ⓘ Note**

SEPP might raise alerts while performing rollback. To clear any alert, see "Alerts" section in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy User Guide*.

1. Run the following command to check the revision you must roll back to:

   ```
   helm history <release_name> -n <release_namespace>
   ```

   Where,

   - `<release_name>` is the release name used by the Helm command.
   - `<release_namespace>` is the namespace where SEPP is deployed.

   For example:

   ```
   helm history ocsepp --namespace seppsvc
   ```


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2. Run the command to rollback to the required revision:

   ```
   helm rollback <release_name> <revision_number> --namespace
   <release_namespace>
   ```

   Where, `<revision_number>` is the release number to which SEPP needs to be rolled back.

   For example:

   ```
   helm rollback ocsepp 1 --namespace seppsvc
   ```

3. If the rollback fails, see "Upgrade or Rollback Failure" section in *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Troubleshooting Guide.*

# 5.4 Post Rollback Tasks

After performing rollback, restore preupgrade data obtained earlier through manual backup.

GET API for different resources can be used to see current values in SEPP, then accordingly if any update required, individual service APIs defined for different resources can be used to reconfigure the data backup taken before upgrade.

> ⚠ **Caution**
>
> Run the following command to delete the `rateLimitingConfigMap` ConfigMap manually, post rollback (applicable only for the roll back to 22.4.x or previous versions):
>
> ```
> kubectl delete cm <rateLimitingConfigMap> -n <release-namespace>
> ```

See *Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP) Rest Specification* for API details.


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# 6
# Uninstalling SEPP

This chapter provides information about uninstalling Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP).

> **Note**
>
> kubectl commands might vary based on the platform deployment. Replace kubectl with Kubernetes environment-specific command line tool to configure Kubernetes resources through kube-api server. The instructions provided in this document are as per the Oracle Communications Cloud Native Environment (CNE) version of kube-api server.

> **Caution**
>
> User, computer and applications, and character encoding settings may cause an issue when copy-pasting commands or any content from PDF. PDF reader version also affects the copy-pasting functionality. It is recommended to verify the pasted content especially when the hyphens or any special characters are part of the copied content.

## 6.1 Uninstalling SEPP Using Helm

To uninstall SEPP, run the following command:

1. Run the following command to uninstall SEPP deployment:

   ```
   helm uninstall <helm-release> -n <ocsepp namespace>
   ```

   Where,

   `helm-release` is a name provided by the user to identify the helm deployment.

   `release-namespace` is a name provided by the user to identify the namespace of SEPP deployment.

   Example:

   ```
   helm uninstall ocsepp-release -n seppsvc
   ```

2. Run the following command to reverify whether the SEPP uninstallation is successful and the config maps are deleted:

   ```
   kubectl get cm -n <namespace>
   ```


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Output:

```
[seppuser@thrust6-bastion-1 ~]$ kubectl get cm -n <namespace>
NAME                 DATA   AGE
istio-ca-root-cert   1      87m
kube-root-ca.crt     1      87m
[seppuser@thrust6-bastion-1 ~]$
```

# 6.2 Verifying Uninstallation and Deleting Kubernetes Namespace

This section describes how to verify SEPP uninstallation.

1. Run the following command to verify the SEPP uninstallation:

   ```
   $ kubectl get all -n <namespace>
   ```

2. Run the following command to delete specific resources:

   ```
   kubectl delete <resource-type> <resource-name> -n <namespace>
   ```

3. Run the following command to delete all the objects:

   ```
   $ kubectl delete all -n <namespace>
   ```

   > ⚠ **Caution**
   >
   > The command deletes all the Kubernetes objects of the specified namespace. In case you have created the RBAC resources and service accounts before the helm installation in the same namespace and these resources are required, then do not delete them.

4. For example, to remove the config map, run the following command:

   ```
   kubectl delete cm --all -n <namespace>
   ```

5. Run the following command to delete the Kubernetes namespace:

   ```
   kubectl delete namespace  <namespace>
   ```

   Example:

   ```
   kubectl delete namespace seppsvc
   ```

6. Run the following command to verify the uninstallation:

   ```
   kubectl get namespace
   ```

   No SEPP namespace must be displayed in the command output. In case of any failure, contact My Oracle Support .

In case of successful uninstallation, no SEPP resource is displayed in the command output.


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# 6.3 Cleaning up Database

This section describes the steps to completely remove MySQL database and username in the following scenarios.

> **Note**
>
> - SEPP is not going to be installed on that cluster.
> - User is configuring the MySQL database name or MySQL user name.

1. Log in to the machine which has permission to access the SQL nodes of NDB cluster.
2. Connect to the SQL node of NDB cluster successively.
3. Log in to the MySQL prompt using root permission or user, which has permission to drop the tables. For example:

   ```
   mysql -h 127.0.0.1 -u<username> -p<password>
   ```

   > **Note**
   >
   > This command may vary from system to system, path for MySQL binary, root user and root password. After running this command, the user must enter the password specific to the user mentioned in the command.

4. Run the following commands to remove SEPP database and backup database:
   a. Run the following command to remove SEPP database:

      ```
      $ DROP DATABASE if exists <SEPP database>;
      ```

      Example:

      ```
      $ DROP DATABASE if exists seppdb;
      ```

   b. Run the following command to remove SEPP backup database:

      ```
      $ DROP DATABASE if exists <SEPP backup database>;
      ```

      Example:

      ```
      $ DROP DATABASE if exists seppbackupdb;
      ```

   > **Caution**
   >
   > Removal of MySQL Users must be done on all the SQL nodes from the SEPP site.

5. Exit from MySQL prompt and SQL node.


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# 6.4 Removing Database Users

This section describes how to remove MySQL users.

Run the following command to remove MySQL users while uninstalling SEPP:

```
DROP USER IF EXISTS <OCSEPP User Name>;
```

Example:

```
DROP USER IF EXISTS seppusr;
```

> **Note**
>
> Removal of users must be done on all the SQL nodes for all SEPP sites.


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# 7 Fault Recovery

This chapter describes the procedures to perform fault recovery for Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP) deployment.

## 7.1 Overview

You must take backup of the databases and restore them either on the same or a different cluster. The SEPP database (MySQL NDB Cluster) is used for running any command or to follow any instruction.

> **Note**
>
> This section describes recovery procedures to restore SEPP completely or partially.

## 7.2 Impacted Areas

The following table provides information about the impacted areas during SEPP fault recovery:

**Table 7-1 Impacted Areas**

| Scenario | Requires Fault Recovery or re-install of CNE? | Requires Fault Recovery or re-install of cnDBTier? | Requires Fault Recovery or re-install of SEPP? | Other |
|---|---|---|---|---|
| Scenario 1: Deployment Failure | No | No | Yes | SEPP DB is not restored. Only helm uninstall/ install is done. |
| Scenario 2: cnDBTier Corruption | No | Yes | No (use helm upgrade if DB configuration is changed) | cnDBTier must be restored from backup and not re-install. If re-install of cnDBTier is needed, then CNE also need to re-installed. |
| Scenario 2A: When DBTier failed in Single or Multiple (but not all) Sites | No | Yes | No | NA |
| Scenario 2B: When DBTier failed in all Sites | No | Yes | No | NA |


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**Table 7-1 (Cont.) Impacted Areas**

| Scenario | Requires Fault Recovery or re-install of CNE? | Requires Fault Recovery or re-install of cnDBTier? | Requires Fault Recovery or re-install of SEPP? | Other |
|---|---|---|---|---|
| Scenario 3: Database Corruption | No | No | No | SEPP backup and restore of configuration database is required on impacted site. This needs automatic periodic backup. |
| Scenario 4: Site Failure | Yes | Yes | Yes | NA |
| Scenario 4A: Single or Multiple Site Failure | Yes | Yes | Yes | NA |
| Scenario 4B:All Site Failure | Yes | Yes | Yes | NA |

# 7.3 Prerequisites

Before performing any fault recovery procedure, ensure that the following prerequisites are met:

1. cnDBTier must be in a healthy state and available on multiple sites along with SEPP. To check the cnDBTier status, perform the following steps:
   a. Run the following command to ensure that all the nodes are connected:

      ```
      ndb_mgm> show
      ```

   b. Run the following command to check the pod status:

      ```
      kubectl get pods -n <namespace>
      ```

      If the pod status is `Running`, then cnDBTier is in healthy state.

   c. Run the following command to check if the replication is up:

      ```
      mysql> show slave status\G
      ```

      In case there is any error, see*Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide.*

   d. Run the following command to check which cnDBTier has ACTIVE replication to take backup:

      ```
      select * from replication_info.DBTIER_REPLICATION_CHANNEL_INFO;
      ```

2. Automatic backup must be enabled on cnDBTier. Enabling automatic backup helps in:
   - restoring stable version of the SEPP database.


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- minimizing significant loss of data due to upgrades or roll back failures.
- minimizing loss of data due to system failure.
- minimizing loss of data due to data corruption or deletion due to external input.
- migrating database information from one site to another.

3. The following files must be available for fault recovery:
   - Custom values file used at the time of network function deployment
   - Helm charts used at the time of network function deployment
   - Secrets and Certificates
   - RBAC resources

# 7.4 Fault Recovery Scenarios

This section describes the fault recovery procedures for various scenarios.

## 7.4.1 Scenario 1: Deployment Failure

This scenario describes how to recover SEPP when the deployment corrupts.

To recover SEPP:

1. Run the following command to uninstall SEPP:

   ```
   helm uninstall <release_name> --namespace <namespace>

   Example:
   helm uninstall ocsepp --namespace seppsvc
   ```

   For more information about uninstalling SEPP, see the Uninstalling SEPP section.
2. Install SEPP as described in the Installing SEPP section. Use the backup of custom values file to reinstall SEPP.

Restore SEPP, cnDBTier, and SEPP database (DB) as described in Restoring SEPP and cnDBTier.

## 7.4.2 Scenario 2: cnDBTier Corruption

This section describes how to recover database when the data replication is broken due to database corruption and cnDBTier has failed in single, multiple sites or all sites.

When the database corrupts, the database on all the other sites may also corrupt due to data replication. It depends on the replication status after the corruption has occurred. If the data replication is broken due to database corruption, then cnDBTier fails in either single or multiple sites (not all sites). And if the data replication is successful, then database corruption replicates to all the cnDBTier sites and cnDBTier fails in all sites.

The following are cnDBTier failure scenarios:

If corrupted database is replicated to mated sites, follow:

- **When DBTier failed in Single or Multiple (but not all) Sites**

If corrupted database cause replication failure and hence local to a site, follow:


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- **When DBTier failed in all Sites**

> **Note**
>
> This scenario impacts all the NFs using the corrupted cnDBTier. All the NFs sharing cnDBTier needs to do a fault recovery as cnDBTier is corrupted.

### 7.4.2.1 When cnDBTier failed in Single or Multiple (but not all) Sites

This section describes how to recover database when the data replication is broken due to database corruption and cnDBTier has failed in either single or multiple sites (not all sites).

To recover database:

1. Uninstall SEPP Helm chart. For information about uninstalling SEPP, see the Uninstalling SEPP section.
2. For cnDBTier fault recovery:
   a. Create on-demand backup from mated site that has health replication with failed site. For more information about cnDBTier backup, see the "Create On-demand Database Backup" chapter in the *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide.*
   b. Use the backup data from mate site for restore. For more information about cnDBTier restore, see the "Restore Georeplication Failure" chapter in *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide.*

   > **Note**
   >
   > The "Restore Georeplication Failure" chapter in *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide* has a procedure for two sites where one of the cluster has fatal error. You can perform that procedure for all the sites in a multiple site setup.

3. Install SEPP Helm chart. For more information about installing SEPP, see the Installing SEPP section.

### 7.4.2.2 When cnDBTier failed in all Sites

This section describes how to recover database when successful data replication corrupts all the cnDBTier sites.

To recover database:

1. Uninstall SEPP helm charts. For more information about uninstalling SEPP, see the Uninstalling SEPP section.
2. For cnDBTier fault recovery:
   a. Use on-demand backup file to restore database from the previous data backup. For more information about cnDBTier restore, see the Restore Georeplication Failure chapter in the *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide*.


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> **Note**
>
> The Restore Georeplication Failure chapter has a procedure for two sites where one of the cluster has fatal error. You can perform that procedure for all the sites in a multiple site setup.

3. Install SEPP helm charts. For more information about installing SEPP, see the see the Installing SEPP section.

## 7.4.3 Scenario 3: Configuration Database Corruption

This scenario describes how to recover SEPP when its configuration database corrupts.

The configuration database is stored in a site exclusive database along with its tables. Thus, corruption of configuration database impacts only a particular site.

To recover SEPP configuration database, user has to restore the datebase (DB) backup.

1. Transfer the `<backup_ filename >.sql.gz` file to the SQL node where user wants to restore it.
2. Log in to MySQL NDB Cluster's SQL node on the new DB cluster and create a new database where the database needs to be restored.
3. For details on creating database and user and adding permissions, see Configuring Database, Creating Users, and Granting Permissions section.

> **Note**
>
> The database name created in the above step should be same as the database name created in the following step. The Kubernetes secret must be the same as in the custom_values.yaml used later for Installing SEPP.

4. Use the following command to restore the database to the new database:

   ```
   gunzip < <backup_filename>.sql.gz | mysql -h127.0.0.1 –u <username> -p
   <backup-database-name>
   ```

   Enter the password when prompted.

   Example:

   ```
   gunzip < SEPPdbBackup.sql.gz | mysql -h127.0.0.1 -u dbuser -p seppdb
   ```

## 7.4.4 Scenario 4: Site Failure

This section describes how to perform fault recovery when either one, multiple, or all sites have a software failure. The following are site failure scenarios:

- Single or Multiple Site Failure
- All Sites Failure


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### 7.4.4.1 Single or Multiple Site Failure

This scenario applies when one or more sites, and not all sites, have failed and there is a requirement to perform fault recovery. It is assumed that the user has cnDBTier and SEPP installed on multiple sites with automatic data replication and backup enabled.

To recover the failed sites:

1. Run the Cloud Native Environment (CNE) installation procedure to install a new cluster. For more information, see *Oracle Communications Cloud Native Core, Cloud Native Environment Installation Guide*.
2. For cnDBTier fault recovery:
   a. Take on-demand backup from the mate site that has health replication with the failed site or sites. For more information about on-demand backup, see the "Create On-demand Database Backup" chapter in the *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide.*
   b. Use the backup data from the mate site to restore the database. For more information about database restore, see "Restore Georeplication Failure" chapter in the *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide.*
3. Install SEPP Helm chart. For more information about installing SEPP, see the Uninstalling SEPP section.

### 7.4.4.2 All Sites Failure

This scenario applies when all sites have failed, and there is a requirement to perform fault recovery. It is assumed that the user has cnDBTier and SEPP installed on multiple sites with automatic data replication and backup enabled.

To recover all the failed sites:

1. Run the Cloud Native Environment (CNE) installation procedure to install a new cluster. For more information, see *Oracle Communications Cloud Native Core, Cloud Native Environment Installation, Upgrade, and Fault Recovery Guide.*
2. Use on-demand backup file to restore database from previous data backup. For more information about database restore, see "Restore Georeplication Failure" chapter in *Oracle Communications Cloud Native Core, cnDBTier Installation, Upgrade, and Fault Recovery Guide.*
   Note:
   - The auto-data backup file is one that is built from scheduled automatic backup.
   - The "Restore Georeplication Failure" chapter contains a procedure for two sites where one of the clusters has fatal error. You can perform the same procedure for all the sites in a multiple site setup.
3. Install SEPP helm chart.


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# A.1 SEPP Database Backup and Restore

### Introduction

Perform this procedure to take a backup of the SEPP database (DB) and restore the database on a different cluster. This procedure is for on-demand backup and restoring of SEPP DB. The commands used for these procedures are provided by the MYSQL Network Database (NDB) cluster.

### Prerequisite

Ensure that the MYSQL NDB cluster is in a healthy state, and each database node must be in the running state. Run the following command to check the status of cnDBTier service:

```
kubectl -n <namespace> exec <management node pod> -- ndb_mgm -e show
```

Where,

- `<namespace>` is the namespace where cnDBTier is deployed.
- `<management node pod>` is the management node pod of cnDBTier.

Example:

```
[cloud-user@vcne2-bastion-1 ~]$ kubectl -n seppsvc exec ndbmgmd-0 -- ndb_mgm -
e show
Connected to Management Server at: localhost:1186
Cluster Configuration
---------------------
[ndbd(NDB)]     2 node(s)
id=1    @10.233.86.202  (mysql-8.0.22 ndb-8.0.22, Nodegroup: 0, *)
id=2    @10.233.81.144  (mysql-8.0.22 ndb-8.0.22, Nodegroup: 0)

[ndb_mgmd(MGM)] 2 node(s)
id=49   @10.233.81.154  (mysql-8.0.22 ndb-8.0.22)
id=50   @10.233.86.2  (mysql-8.0.22 ndb-8.0.22)

[mysqld(API)]   2 node(s)
id=56   @10.233.81.164  (mysql-8.0.22 ndb-8.0.22)
id=57   @10.233.96.39  (mysql-8.0.22 ndb-8.0.22)

[cloud-user@vcne2-bastion-1 ~]$
```

### SEPP DB Backup

If the SEPP database backup is required, do the following:

1. Log in to any of the SQL node or API node, and then run the following command to take dump of the database:

   ```
   kubectl exec -it <sql node> -n <namespace> bash
   mysqldump --quick -h127.0.0.1 –u <username> -p  <databasename>| gzip >
   <backup_filename>.sql.gz
   ```

   Where,


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- <sql node> is the SQL node of cnDBTier.
- <namespace> is the namespace where cnDBTier is deployed.
- <username> is the database username.
- <databasename> is the name of the database that has to be backed up.
- <backup_filename> is the name of the backup dump file.

2. Enter the SEPP database name and password in the command when prompted. Example:

```
kubectl exec -it ndbmysqld-0 -n sepp bash
mysqldump --quick -h127.0.0.1 -u dbuser -p seppdb | gzip >
SEPPdbBackup.sql.gz
```

> **Note**
>
> Ensure that there is enough space on the directory to save the backup file.

**SEPP Restore**

If the SEPP database restore is required, do the following:

1. Transfer the <backup_ filename>.sql.gz file to the SQL node where you want to restore it.
2. Log in to the SQL node of the MYSQL NDB cluster on the new DB cluster and create a new database where the database needs to be restored.
3. Create database, database user, and grant permissions as described in Configuring Database, Creating Users, and Granting Permissions section.

> **Note**
>
> The database name created in this step should be the same as the database name created in the next sub step. Also, the Kubernetes secret should be the same as in the values.yaml file used for installing SEPP.

4. To restore the database to the new database created, run the following command:

```
gunzip < <backup_filename>.sql.gz | mysql -h127.0.0.1 –u <username> -p
<databaseName >
```

Example:

```
gunzip < seppdbBackup.sql.gz | mysql -h127.0.0.1 -u dbuser -p newseppdb
```

5. Enter the password when prompted.


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# A.2 Restoring SEPP and cnDBTier

Perform this procedure to restore SEPP, cnDBTier, and SEPP database (DB).

**Prerequisites:**

- Take a backup of the `custom_values.yaml` file that was used for installing SEPP.
- Take a backup of the SEPP database and restore the database as described in SEPP Database Backup and Restore. Perform this task once every evening.

If SEPP deployment is corrupted, do the following:

1. Run the following command to uninstall the corrupted SEPP deployment:

   ```
   helm uninstall <release_name> --namespace <namespace>
   ```

   Where,

   - `<release_name>` is a name used to track this installation instance.
   - `<namespace>` is the release number.

   Example:

   ```
   helm uninstall ocSEPP --namespace SEPPsvc
   ```

2. Install SEPP using the backed up copy of the `custom_values.yaml` file.
   For information about installing SEPP using Helm, see Installing SEPP section.

If cnDBTier and NF deployment is corrupted, do the following:

1. Install cnDBTier as described in *Oracle Communication Cloud Native Core DBTier Installation, Upgrade, and Fault Recovery Guide*.
2. Restore SEPP DB as described in SEPP Database Backup and Restore.
3. Install SEPP using the backed up copy of the `custom_values.yaml` file.
   For information about installing SEPP using Helm, see Installing SEPP section.

If DB Secret or cnDBTier mysql FQDN or IP or PORT is changed, do the following:

1. In the backed up copy of the `custom_values.yaml` file, update these values: `dbHost/dbPort/dbAppUserSecretName/dbPrivilegedUserSecretName`.

   ```
   # DB Connection Service IP Or Hostname with secret name.
     database:
       dbHost: "mysql-connectivity-service.seppsvc"
       dbPort: "3306"
       # K8s Secret containing Database/user/password for all services of
   SEPP interacting with DB.
       dbAppUserSecretName: "seppuser-secret"
       # K8s Secret containing Database/user/password for DB Hooks for
   creating tables
       dbPrivilegedUserSecretName: "seppprivilegeduser-secret"
   ```


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2. Run the following Helm upgrade command to update the secrets for SEPP control plane microservices, such as configuration, subscription, audit, and notification, to connect to the DB with changed DB Secret or DB FQDN, IP, or Port:

   ```
   helm upgrade <release name> -f <custom_values.yaml> --namespace
   <namespace> <helm-repo>/chart_name --version <helm_version>
   ```

   Example:

   ```
   helm upgrade ocsepp -f /home/cloud-user/1.12/values.yaml /home/cloud-user/
   1.11.0/ocsepp --namespace seppsvc
   ```


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# A.3 Adding a Site to an Existing SEPP Georedundant Site

This section describes the procedure to add a site to an existing SEPP site.

**Prerequisites**

1. SEPP connected to a cnDBTier is up and running. This is referred as Site 1 or Site 2.
2. SEPP and cnDBTier versions used for Site 1 and Site 2 installation must be identified and same must be used for adding another site.

**Adding a site**

1. Install a new cnDBTier. This cnDBTier must act as a georedundant database to the cnDBTier in Site-1 or Site-2. For more information to install a cnDBTier, see *Oracle Communications Cloud Native Core cnDBTier User Guide*.
2. Verify the replication channel between the cnDBTier sites by sending the following request to the dbMonitor service of both the cnDBTier sites. The responses from both the cnDBTier sites must show the status of replication channel as up:

   ```
   curl http://<mysql-db-monitor-service>:8080/db-tier/status/replication/
   realtime
   ```

   Sample command:

   ```
   curl http://mysql-cluster-db-monitor-svc:8080/db-tier/status/replication/
   realtime
   ```

   Sample output:

   ```
   [{"localSiteName":"Site-1","remoteSiteName":"Site-2","remoteSiteName":"Site
   -3","replicationStatus":"UP","secondsBehindRemote":
         0}]
   ```

3. Create the required secrets to install the Site-2 or Site-3 SEPP in the same namespace as the new cnDBTier installed in step-1, by following the steps described in the "Configuring Kubernetes Secret for Accessing SEPP Database" subsection from "Installing SEPP" chapter in *Oracle Communications Cloud Native Core Security Edge Protection Proxy Installation, Upgrade, and Fault Recovery Guide*.
4. Run the following command to verify the secret created:

   ```
   $ kubectl describe secret <database secret name> -n <Namespace of SEPP
   deployment>
   ```

5. Install the Site-2 or Site-3 SEPP using the updated `ocsepp-custom values-<version>.yaml` file. For more information on installation procedure, see *Oracle Communications Cloud Native Core Security Edge Protection Proxy Installation, Upgrade, and Fault Recovery Guide.*
   Verify the installation as mentioned in *Oracle Communications Cloud Native Core Security Edge Protection Proxy Installation, Upgrade, and Fault Recovery Guide.*


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6. After the installation is complete, make sure that the "DbReplicationStatusInactive" alert is not raised in the alert dashboard. If the alert exists, verify the above configuration steps. If the alert is not present, it means the DBReplication is up and the georedundant deployment of all sites is successful.


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# A.4 Removing a Site from an Existing Georedundant Deployment

This section describes the procedure to remove a site from an existing SEPP deployment.
**Prerequisites**

1. SEPP connected to a cnDBTier is up and running. This is referred as Site 1 (SEPP-1 and SEPP-2).

**Procedure**

This section describes the procedure to remove a site (Site1 or Site 2) from an existing georedundant SEPP deployment.

1. Uninstall the SEPP instance from the site to be removed.
   For more information on uninstallation procedure, see *Oracle Communications Cloud Native Core, Security Edge Protection Proxy Installation, Upgrade, and Fault Recovery Guide*.
2. Remove the DB Replication and the NDBCluster on the site to be removed. For more information on this procedure, see *Oracle Communications Cloud Native Core, cnDBTier User Guide*.


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# A.5 Creating Private Keys and Certificate

This section explains the procedure to create private keys and certificate for enabling HTTPs on N32 gateway and PLMN Gateway (both Ingress and Egress).

> **Note**
>
> Creating keys and certificates are outside SEPP scope and user or operator should perform this at their discretion.

Gateway supports both RSA and ECDSA signing for ingress and egress traffic. Initial algorithm selection is configured by using initialAlgorithm flag in the custom-values.yaml for each gateway.

Select as follow:

- For RSA use RS256
- For ECDSA use ES256

Certificates for selected initial algorithm must be included in the ocsepp-n32-secret and ocsepp-plmn-secret.

> **Note**
>
> **Prerequisites**:
>
> Use the following sample file of ssl.conf to configure default entries along with subject alternate name (SAN) details for your certificate.
>
> - ssl.conf has various requirements such as commonName, commonName_default, subjectAltName. Configure these values as per SEPP FQDN configuration.
> - The SEPP FQDN can be extracted from `ocsepp_custom_values_<version>.yaml` file localProfile:interPlmnFqdn:
> - Other commands require similar configuration. Keep these parameters consistent across commands.

1. Use the following sample file of ssl.conf to configure default entries along with subject alternate name (SAN) details for your certificate: Run the following command to create ssl.conf file:

   Update the following parameters with SEPP inter PLMN FQDN to be used in TLS certificate:

   - commonName_default
   - commonName
   - DNS.1

   ```
   cat > ssl.conf << EOF
   ```


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```
#ssl.conf
[ req ]
default_bits = 4096
distinguished_name = req_distinguished_name
req_extensions = req_ext

[ req_distinguished_name ]
countryName = Country Name (2 letter code)
countryName_default = IN
stateOrProvinceName = State or Province Name (full name)
stateOrProvinceName_default = Karnataka
localityName = Locality Name (eg, city)
localityName_default = Bangalore
organizationName = Organization Name (eg, company)
organizationName_default = Oracle
commonName = sepp2.inter.oracle.com
commonName_max = 64
commonName_default = sepp2.inter.oracle.com

[ req_ext ]
subjectAltName = @alt_names

[alt_names]
IP = 127.0.0.1
DNS.1 = sepp2.inter.oracle.com
EOF
```

**RSA Certificate Generation (To be done for consumer SEPP and producer SEPP individually)**

2. Run the following command to generate RSA private key:

```
//Generate rsa_certificate.crt and rsa_private_key

openssl req -x509 -nodes -sha256 -days 365 -newkey rsa:2048 -keyout
rsa_private_key -out rsa_certificate.crt -subj '/C=IN/ST=Karnataka/
L=Bangalore/O=Oracle/CN=sepp2.inter.oracle.com'
```

3. Run the following command to convert the private key to .pem format:

```
//Generate rsa_private_key_pkcs1.pem
openssl rsa -in rsa_private_key -outform PEM -out rsa_private_key_pkcs1.pem
```

4. Run the following command to generate a certificate using private key:

```
/Generate ocsepp.csr
openssl req -new -key rsa_private_key -out ocsepp.csr -config ssl.conf -
subj '/C=IN/ST=Karnataka/L=Bangalore/O=Oracle/CN=sepp2.inter.oracle.com'
```

5. Run the following command to generate serial.txt file:

```
///Generate serial.txt
echo 1234 > serial.txt
```


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**Root CA creation for self signed certificates (Only done once for any SEPP)**

6. Run the following set of commands to create root certificate authority (CA):

```
//Generate cakey.pem and careq.pem
openssl req -new -keyout cakey.pem -out careq.pem -passout pass:$
{PEM_PHRASE} -subj "/C=IN/ST=Karnataka/L=Bangalore/O=Oracl/
CN=sepp2.inter.oracle.com"

//Genearte caroot.cer
openssl x509 -signkey cakey.pem -req -days 3650 -in careq.pem -out
caroot.cer -extensions v3_ca -passin pass:${PEM_PHRASE}
```

**Self Signing RSA Certificates (To be done for consumer and producer SEPP individually)**

7. Run the following command to sign the server certificate with root CA private key:

```
openssl x509 -CA caroot.cer -CAkey cakey.pem -CAserial serial.txt -req -in
ocsepp.csr -out ocsepp.cer -days 365 -extfile ssl.conf -extensions req_ext
-passin pass:${PEM_PHRASE}
```

**ECDSA Certificate Generation and Self Signing (To be done for consumer SEPP and producer SEPP individually)**

8. Run the following command to generate ECDSA private key and certificate using private key. After that sign the server certificate with root CA private key:

```
openssl ecparam -genkey -name prime256v1 -out host.key

openssl req -new -sha256 -key host.key -nodes -out ecdsa_certificate.csr -
config ssl.conf -subj "/C=IN/ST=Karnataka/L=Bangalore/O=Oracle/
CN=sepp2.inter.oracle.com"

openssl x509 -CA caroot.cer -req -sha256 -days 730 -in
ecdsa_certificate.csr -CAkey cakey.pem -CAcreateserial -extfile ssl.conf -
extensions req_ext -out ssl_ecdsa_certificate.crt -passin pass:$
{PEM_PHRASE}

openssl pkcs8 -topk8 -in host.key -out ssl_ecdsa_private_key.pem -nocrypt
```

9. Create key.txt by entering any password. This password is used to configure gateway key store.
   Example:

```
echo "password" > key.txt
```

10. Create trust.txt by entering any password. This password is used to configure gateway trust store.
    Example:

```
echo "password" > trust.txt
```


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11. Run the following commands to create a secret on n32-egress-gateway and n32-ingress-gateway:

```
kubectl create secret generic ocsepp-n32-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n <namespace>
```

Where, <namespace> is the namespace where SEPP is deployed. example:

```
kubectl create secret generic ocsepp-n32-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n seppsvc
```

12. Run the following commands to create a secret on plmn-egress-gateway and plmn-ingress-gateway:

```
kubectl create secret generic ocsepp-plmn-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n <namespace>
```

Where, <namespace> is the namespace where SEPP is deployed. example:

```
kubectl create secret generic ocsepp-plmn-secret --from-
file=ssl_ecdsa_private_key.pem --from-file=rsa_private_key_pkcs1.pem --
from-file=trust.txt --from-file=key.txt --from-file=caroot.cer --from-
file=rsa_certificate.crt --from-file=ssl_ecdsa_certificate.crt --from-
file=ocsepp.cer -n seppsvc
```


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# A.6 Customization of OpenAPI JSON

This section details the customization of openAPI JSON file.

The `ocsepp_configuration_openapi_25.2.200.json` openAPI file provides options to configure a server for SEPP configuration, status and state data APIs..

1. Open the `ocsepp_configuration_openapi_25.2.200.json file`.
2. Edit the servers section as per the deployment. Server details can be configured as follow:

```
"servers": [
    {
      "url": http://xxx.x.x.x:xxxx/,  - Indicates the CNC Console host and
port details
      "description": "<cncc service host details>:<cncc service port
details>.
    },
  ],
```

> **Note**
>
> Apart from URL, no other content should be edited or updated in the openAPI file.


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# B.1 PodDisruptionBudget Kubernetes Resource

**Background**

Pods are the basic units of Kubernetes and are used to deploy Cloud Native Core (CNC) Network Functions (NFs).

Pod disruption occurs due to voluntary and involuntary disruptions.

**Voluntary Disruptions**

Voluntary pod disruption occurs when:

- pods are removed from a cluster.
- SEPP worker nodes are drained at the time of cluster upgrade and running pods are evicted from these nodes.
- load balancing of worker nodes is performed by evenly distributing pods among worker nodes.

**Involuntary Disruptions**

Involuntary pod disruption occurs when:

- the system hardware or software fails.
- SEPP worker nodes are removed accidentally.
- pods are evicted due to insufficient resources on SEPP worker nodes.

Kubernetes has introduced the PodDisruptionBudgets (PDB) concept to manage pod disruption outages in the clusters. PDB is applicable only for voluntary disruptions. It is used to avoid service impact due to voluntary disruption and ensures high availability of NF.

**PodDisruptionBudget SEPP Implementation Overview**
PodDisruptionBudget (PDB) is a Kubernetes resource that allows you to achieve high availability of scalable application services when the cluster administrators perform voluntary disruptions to manage the cluster nodes. PDB restricts the number of pods that are down simultaneously from voluntary disruptions. Defining PDB is helpful to keep the services running undisrupted when a pod is deleted accidentally or deliberately. PDB can be defined for highly available and scalable OC SEPP services such as cn32f-svc, pn32f-svc, cn32c-svc, pn32c-svc, n32-ingress-gateway, n32-egress-gateway, plmn-ingress-gateway, plmn-egress-gateway, nfmanagement-svc, nfdiscovery-svc and perf-info services.

It allows safe eviction of pods when a Kubernetes node is drained to perform maintenance on the node. It uses the maxUnavailable parameter specified in the Helm chart to determine the maximum number of pods that can be unavailable during a voluntary disruption. For example, when a `maxUnavailable` is 25%, pod evictions are allowed as long as no more than 25% of the desired pods are in unhealthy state.

For more information about this functionality, see https://kubernetes.io/docs/concepts/workloads/pods/disruptions/#pod-disruption-budgets.

**Default PodDisruptionBudget for SEPP Deployment**


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**Table 2 Default PodDisruptionBudget for SEPP Deployment**

| Microservice | PDB Value Specified (maxUnavailable) |
|---|---|
| cn32c-svc | 25% |
| pn32c-svc | 25% |
| cn32f-svc | 25% |
| pn32f-svc | 25% |
| config-mgr-svc | Not Applicable |
| plmn-ingress-gateway | 25% |
| plmn-egress-gateway | 25% |
| n32-ingress-gateway | 25% |
| n32-egress-gateway | 25% |
| app-info | 25% |
| config-server | 50% |
| perf-info | 25% |
| nf-mediation | 25% |
| coherence-svc | 25% |


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