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Preface

- Documentation Accessibility
- Diversity and Inclusion
- Conventions

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
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Acronyms

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

Table 1 Acronyms

Acronym	Definition
3GPP	3rd Generation Partnership Project
API	Application Programming Interface
CCA	Client Credentials Assertion, 3gpp-Sbi-Client-Credentials header is defined by 3GPP. The header contains a client credentials assertion.
CNC Console	Oracle Communications Cloud Native Configuration Console
DNS	Domain Name System
FQDN	Fully Qualified Domain Name
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
K8s	Kubernetes
LCI	Load Control Information
LC-H	Load Control based on LCI Header
MCC	Mobile Country Code
MNC	Mobile Network Code
NF	Network Function
NRF	Oracle Communications Cloud Native Core, Network Repository Function
OCI	Overload Control Information
OLC-H	Overload Control based on OCI Header
PLMN	Public Land Mobile Network
REST	Representational State Transfer
SBI	Service Based Interface
SCP	Oracle Communications Cloud Native Core, Service Communication Proxy
SCPC	Service Communication Proxy Control
SEPP	Oracle Communications Cloud Native Core, Security Edge Protection Proxy
SPN	Service Proto Name
SRV	Service Records
URI	Uniform Resource Identifier
XFCC	x-forwarded-client-cert is a proxy header that indicates TLS certificate information.

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What's New in This Guide

This section introduces the documentation updates for release 25.1.2xx.

Release 25.1.201 - G33513-02, August 2025

Updated the release number to 25.1.201 throughout this document.

Release 25.1.200 - G33513-01, July 2025

- Added the following sections for the Enhanced Notifications Handling feature:
  - Added the `enhanced_notifications_handling` parameter in the Configuring SCP Features section to manage the Enhanced Notifications Handling feature.
  - Added the Configuring NF Profile Level Attribute section to describe the nfProfile-level-attribute-config REST API parameters required to configure NF profile level attributes for a specific NfType.
  - Added the Configuring NF Profile Level Attribute Configuration Data section to describe the nfProfile-level-attribute-config-data REST API parameters required to configure NF profile level attribute configurations data.
- Added the Understanding sideCarProxyServerHeader and sideCarProxyStatusCode Configurations subsection with a scenario to understanding `sideCarProxyServerHeader` and `sideCarProxyStatusCode` configurations.
- Updated the Configuring Dynamic Logging section with RX_TX_MSG_INFO log level, which is supported only by SCP-Worker.
- Added `ingress_rate_limit` and `egress_rate_limit` parameters in the Configuring SCP Features section.

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1 Introduction

This document provides information about how to configure the services and manageable objects in Oracle Communications Cloud Native Core, Service Communication Proxy (SCP) using Representational State Transfer Application Programming Interfaces (REST APIs).

The core network in 5G follows a service-based architecture, where network functions provide services that can be utilized using REST APIs by other functions. This allows the adoption of web-scale technologies and software that are used by different organizations in the telecommunications network.

SCP provides routing, load balancing, rate limiting, static configuration, dynamic discovery, and so on, functionalities to other 5G Network Functions (NFs). For more information about SCP functionalities and features, see *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*.

> **Note**
>
> The performance and capacity of the SCP system may vary based on the call model, feature or interface configuration, network conditions, and underlying CNE and hardware environment.

1.1 References

- *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*
- *Oracle Communications Cloud Native Core, Service Communication Proxy Installation, Upgrade, and Fault Recovery Guide*

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2 SCP Configuration Using REST APIs

This chapter provides information about how to configure Oracle Communications Cloud Native Core, Service Communication Proxy (SCP) using REST APIs.

SCP can be configured using Helm and REST configurations. Some configurations are performed during SCP installation using Helm and a few configurations are modified using REST APIs. REST configurations can also be performed using the Oracle Communications Cloud Native Configuration Console (CNC Console).

For more information about SCP configuration types, see the following guides:

- For Helm configuration: *Oracle Communications Cloud Native Core, Service Communication Proxy Installation, Upgrade, and Fault Recovery Guide*.
- For REST configurations using the CNC Console: *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*.

SCP uses GET, PUT, DELETE, and so on HTTP methods to retrieve, update, and remove REST API configuration data.

> **Note**
>
> - The PUT method for multiple rules as a single payload through a single API is not allowed unless specified explicitly.
> - If the query parameter is incorrect, SCP does not return an error response but considers an API call without any query parameter, and therefore the GET ALL output is returned in the response.

SCP Service Interfaces

SCP provides the following service interfaces:

- **Signaling Interface**: The signaling interface is exposed by SCP data plane called SCP-Worker. This interface is used to receive all 5G signaling traffic.
- **Config Interface**: The config interface is exposed by SCP control plane called SCPC-Config. This interface is used to receive all SCP configuration traffic.

SCP Signaling Service

SCP provides the following Signaling services:

- **FQDN**
  - Consumer NFs may use SCP Signaling service's FQDN to send 5G signaling traffic to SCP for routing. The Kubernetes service FQDN is of the following format:
    * `fqdn = scp-worker.<namespace>.<domain>`. Where, namespace is Kubernetes namespace as provided during the Helm installation, and domain is as provided in the Helm chart (values.yaml) while installation.

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    * If user NFs are deployed outside of Kubernetes cluster, then operator must ensure that this FQDN is resolvable by consumer NFs.
    * Operator can specify the public or Kubernetes-cluster FQDN of SCP in the Helm chart (`values.yaml, scpInfo.fqdn" = <releaseName>-scp-worker.<Namespace>.<domain>`) during installation.
- **IP Address**
  - Consumer NFs may use SCP Signaling service's IP address to send the 5G signaling traffic to SCP for routing.
  - IP is `<global.publicSignalingIP>` as provided in the Helm chart (values.yaml) during SCP installation.

    > **Note**
    >
    > Only IPv4 is supported.
- **Port**
  - Consumer NFs require port information along with FQDN or IP address to send 5G signaling traffic to SCP for routing.
  - Port is `<global.publicSignalingPort>` as provided in the Helm chart (values.yaml) during SCP installation.

SCP Config Service

SCP provides the following Config service:

- **FQDN**
  - Operator may use SCP Config service's FQDN to configure SCP for routing.
  - The Kubernetes service FQDN is of the following format:
    * `fqdn = scpc-config-svc.<namespace>.<domain>`. Where, `<namespace>` is Kubernetes namespace as provided during the Helm installation, and `<domain>` is as provided in the Helm chart (values.yaml) during SCP installation.
    * Operators must ensure that this FQDN is resolvable if operating from outside of the Kubernetes cluster.
- **IP Address**
  - Consumer NFs may use SCP Config service's IP Address to configure SCP for routing.
  - IP is `<scpc-soothsayer.configService.publicConfigIP>` as provided in the Helm chart (values.yaml) during SCP installation.
- **Port**
  - Operators require port information along with FQDN or IP address to configure SCP for routing.
  - Port is 8081 that is a fixed port and cannot be configured.

2.1 Configuring SCP Features

This section provides REST API configurations to enable SCP features.

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Resources

The following table describes the resource name to retrieve, add, or update SCP features.

Table 2-1 Resource Name

Resource Name	Resource URI	HTTP Method	Description
scp-features	/ocscp/scpc-configuration/v1/scp-features	GET	Retrieves all the SCP features configured list at SCP or specific records based on the query parameters.
scp-features	/ocscp/scpc-configuration/v1/scp-features/{featureName}	GET	Retrieves records based on featureName as a path variable.
scp-features	/ocscp/scpc-configuration/v1/scp-features/{featureName}	PUT	Updates the feature-specific information based on the provided feature name in the Resource URI.

Data Model

Request Body

The following table describes the field names of the SCPFeaturesWrapper data type.

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Table 2-2 SCPFeaturesWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
featureName	String	M	Indicates the unique feature name as per the requirement. Supported values are: • `modeld_routing`: To enable or disable Release 16 Model D based routing. • `mediation`: To enable or disable Mediation. • `interplmn_routing`: To enable or disable the support for 5G SBI roaming. • `global_egress_ratelimit`: To enable or disable the Global Egress Rate Limiting and its specific configurations. • `enhanced_nf_status_processing`: To enable or disable the SUSPENDED NF Status processing. • `scp_user_agent_info`: To enable or disable addition of the "User-Agent" header in the SCP originated messages towards NRF. • `lci`: To enable or disable Load Control based on the Load Control Information (LCI) Header feature. • `Traffic Feed`: To enable or disable copying of both request and response messages routed through SCP towards Data Director • `egress_host_preference`: To enable or disable egress host preference. • `location_hdr_update_for_host_mismatch`: To enable or disable inter-SCP routing of subsequent 5G SBI request messages for unknown FQDNs as part of the Location Header for Host Mismatch feature. • `cca_header_validation`: To enable or disable Client Credentials Assertion (CCA) header validation. **Note:** SCP supports the 3gpp-Sbi-Client-Credentials header with x5c - X.509 URL, not x5u - X.509 URL. • `health_check`: Enables the Health Check API feature. By default, this feature is enabled. **Note**: This feature cannot be disabled because if it is disabled, SCP will not be able to send the response to the consumer,

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Table 2-2 (Cont.) SCPFeaturesWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
			potentially causing the consumer to perceive SCP as unavailable. Therefore, disabling this feature is not allowed. • `oauth2_support`: This parameter enables or disables the OAuth2.0 (Open Authorization) access tokens feature. • `nrf_bootstrap_info`: To enable or disable NRF configuration using the DNS SRV resolution feature and its configuration. • `oci`: To enable or disable the Overload Control Information (OCI) feature. • `ignore_unknown_nfservice`: To enable or disable NFProfile Processing enhancements supported by SCP. • `enhanced_error_rsp`: To combine all the error responses from both internal and external sources, such as error responses generated by SCP and error responses received from producer NFs while performing alternate routing. • `additional_logging`: To enable or disable the additional logging feature. • `log_subscriber_info`: To enable or disable the log_subscriber_info feature and configure its settings. • `timestamp_headers_support`: To enable or disable the timestamp_headers_support feature and configure its settings. • `enhanced_notifications_handling`: To enable or disable the Enhanced Notifications Handling feature.
enabled	Boolean	M	Enables or disables a feature. The values can be true or false. By default, this value is false.
featureSpecificConfig	customObject	O	Indicates feature specific configuration objects.

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Table 2-3 Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
global_egress_ratelimit	`featureSpecificConfig : { "remoteScpOneEnabled": "false", "remoteScpTwoEnabled": "false" }`	This parameter enables or disables the Global Egress Rate Limiting feature. `remoteScpOneEnabled`: This parameter indicates whether SCP cache connectivity should be started for the remote SCP participant. Type: Boolean `remoteScpTwoEnabled`: This parameter indicates whether SCP cache connectivity should be started for the remote SCP participant.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
modeld_routing	`featureSpecificConfig: { "caching": "true", "enforceReqSpecificSvcDiscovery": "true" , "cacheCfgForNrfNotification": { "cacheUpdateMode": [ "LOCAL_REFRESH", "NRF_REFRESH" ] , "useCachedRecordOnError": 307, 308, 429, 5xx, empty2xx } }`	This parameter enables or disables the Model D Indirect 5G SBI Communication feature. `caching`: This parameter indicates whether local cache is enabled for Model D rules. `enforceReqSpecificSvcDiscovery`: This parameter enforces NF Service specific Discovery Request when possible. `cacheCfgForNrfNotification`: Configuration for model-based D cache updates using NRF information. It includes two fields: cacheUpdateMode and useCachedRecordOnError. `cacheUpdateMode`:This parameter indicates the cache update mode for SCP when an NF profile notification is received. The mode determines how cache records are updated, either locally or through a fresh discovery request to NRF, depending on the modified NF-profile attribute. The following values are supported: • NONE: Cache updates do not occur on notification. Updates happen only based on discovery responses. Setting the value to "NONE" disables this feature. • LOCAL_REFRESH: The cache is updated locally if the NF-profile attribute being modified belongs to the local cache update category. If **cacheUpdateMode** is set to `LOCAL_REFRESH` only and the modified attribute requires an NRF discovery update, the notification is ignored. • NRF_REFRESH: The cache is refreshed through a new discovery request to NRF if the NF-profile attribute being modified requires an NRF discovery update. If **cacheUpdateMode** is set to **NRF_REFRESH** only and the modified attribute requires a local update, the notification is ignored. • [NRF_REFRESH, LOCAL_REFRESH]: Both local and NRF-based cache updates occur, depending on the modified NF-profile attribute. Upon receiving a Profile Notification, if both modes are configured, NRF_REFRESH will be applied first if applicable; otherwise, LOCAL_REFRESH will be applied. • **Default value**: [NRF_REFRESH, LOCAL_REFRESH] `useCachedRecordOnError`: This parameter indicates that SCP uses the existing invalid cached response for the defined error codes if it receives an error response from NRF, if the request times out, or if it receives a 2xx response with no profiles.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		The allowed values include: • **Allowed values**: NONE, 5xx, empty2xx, and all valid reroutable codes defined for Routing Options. These include: 301, 302, 303, 304, 307, 308, 400, 401, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 421, 422, 425, 426, 428, 429, 431, 451, 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, and 511. • **Default value**: ["307", "308", "429", "5xx", "empty2xx"] • **NONE**: This value indicates that no error codes are configured. No other error codes can be used when "NONE" is set. • **5xx**: Indicates all supported error codes starting with 5. • **empty2xx**: This custom string is defined to handle cases where the NRF discovery response returns a 200 OK status with an empty list of profiles. If this value is configured, SCP will use the old invalid cached response.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
mediation	"featureSpecificConfig": { "userDefinedVariable": { "enabled": false, "maxUserDefinedVariableSize": 1024, "maxUserDefinedVariableCount": 100 } }	**userDefinedVariable**: Configuration wrapper for the userDefinedVariable feature; it contains three fields. • **enabled**: This boolean parameter indicates whether the userDefinedVariable feature is enabled for Mediation. The default value is false. • **maxUserDefinedVariableSize**: This integer parameter specifies the overall max size of all userDefinedVariables included in the request or response body for mediation. – Default Value: 1024 – Range: 512 - 4096 • **maxUserDefinedVariableCount**: This parameter is an Integer which signifies the total number of userDefinedVariables that can be configured for usage at User Defined Variables API. – Default Value: 100 – Range: 1-250 **Notes**: • If the enabled field is set to false, rules using userDefinedVariables can only be saved in a draft state and cannot be moved to the compile or applied state. • If the enabled field is changed to true and any mediation rules are in the applied state, the enabled field cannot be set back to false until all applied rules are returned to draft state. • If userDefinedVariables are added through the User Defined Variables API, the maxUserDefinedVariableCount cannot be set to a value lower than the number of userDefinedVariables currently stored in the database.
interplmn_routing	NA	Not applicable for inter-plmn routing. Keep this field blank.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
enhanced_nf_status_processing	featureSpecificConfig : { "enhancedSuspendedStateRouting": "["AMF", PCF]" , "suspendedStateRouting": ["UDM"] }	This parameter enables or disables the NF Status Processing feature. enhancedSuspendedStateRouting: This parameter is used to indicate the list of NFTypes for which SCP would consider "SUSPENDED" NFs available for routing or alternate routing only when alternate is not available in the "REGISTERED" state. This parameter is used to list NFTypes eligible for Mode 3. An * means that all NFTypes are eligible for Mode 3. suspendedStateRouting: This parameter is used to indicate the list of NFTypes for which SCP would consider "SUSPENDED" NFs available for routing. This parameter is used to list the NFTypes eligible for Mode 2. An * means that all NFTypes are eligible for Mode 2. Type: array(NFType) **Note**: To specify all NFTypes for Mode-3, the list has to be specified with the wildcard *. Example: featureSpecificConfig : { "enhancedSuspendedStateRouting": "["*"]", "suspendedStateRouting": [] } **Note**: • Mode 1: If the enhanced_nf_status_processing is set to false, only NFs in the REGISTERED state are considered for routing. • Mode 2: If the enhanced_nf_status_processing is set to true and suspendedStateRouting is present, all configured NFs are considered for routing, irrespective of their NF state (REGISTERED or SUSPENDED). • Mode 3: If the enhanced_nf_status_processing is set to true and enhancedSuspendedStateRouting is present, SCP considers SUSPENDED NFs available for routing or alternate routing only when the alternate NF is not available in the REGISTERED state. • If enhancedSuspendedStateRouting is set to a subset of NF types such as AMF and PCF, SCP applies routing Mode 3 for AMF and PCF, and the remaining NF types will be routed to Mode 1. • If suspendedStateRouting is set to a subset of NF types such as AMF and PCF, SCP applies routing Mode 2 for AMF and PCF, and the remaining NF types will be routed to Mode 1. • If suspendedStateRouting and enhancedSuspendedStateRouting are

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		configured for mutually exclusive NF types such as UDM and PCF, then SCP will route UDM to Mode 2 and PCF to Mode 3, respectively, and the remaining NF types will be routed to Mode 1.
scp_user_agent_info	"featureSpecificConfig": { "userAgentHeaderFormat": "NFTYPE-NFINSTANCEID FQDN", "uniqueID": "string/text input" }	This parameter enables or disables addition of "User-Agent" header in the SCP originated messages towards NRF. userAgentHeaderFormat: This parameter indicates the format of the"User-Agent" header that is added in the SCP originated message requests towards NRF. SCP supports the following formats of the "User-Agent" header: • NFTYPE-NFINSTANCEID FQDN • NFTYPE-NFINSTANCEID-FQDN • NFTYPE-FQDN NFINSTANCEID • NFTYPE-FQDN-NFINSTANCEID • NFTYPE-NFINSTANCEID • NFTYPE-FQDN • NFTYPE • NFTYPE-UNIQUEID uniqueID: This parameter is applicable only for NFTYPE-UNIQUEID. If you configure userAgentHeaderFormat as NFTYPE-UNIQUEID, you must configureuniqueID.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
lci	"featureSpecificConfig": { "scpLciConveyanceEnable": false, "relayPeerLci": true, "scpLciConveyanceInterval": 5000, "scpLciConveyanceMinLoadChange": 5, "scpLciConveyanceMinLoadThreshold": 30, "scpLciConveyancetoUnknownPeer": false, "peerLciProcessingMinLoadChange": 5, "unknownPeerLciExpiry": 300 }	scpLciConveyanceEnable: This parameter enables SCP to add its LCI in request and response. • Default value: false relayPeerLci: This parameter allows SCP to forward the received LCI header from producer NF. • Default value: true scpLciConveyanceInterval: This parameter indicates periodic intervals for reporting SCP LCI to a peer NF. For each interval, SCP's LCI is reported to the peer NF irrespective of any change to SCP LCI. Sending SCP LCI periodically ensures that the peer NF has not missed earlier reported SCP LCI. The SCP LCI load value is measured by SCP as the current load value of SCP if the load is more than configured scpLciConveyanceMinLoadThreshold or 0 if the load is less than scpLciConveyanceMinLoadThreshold. • Default value: 5000 milliseconds • Range: 1000 to 3600000 milliseconds **Note**: • This LCI conveyance is not limited by scpLciConveyanceMinLoadThreshold or scpLciConveyanceMinLoadChange parameter. • However, if the SCP load value is lesser than scpLciConveyanceMinLoadThreshold, then it reports 0 as a load considering SCP is not loaded. • The LCI header will be sent along with the message being forwarded to the peer NF. scpLciConveyanceMinLoadChange: This parameter indicates the minimum delta change in load to convey LCI. It is applicable when SCP Load value goes beyond the scpLciConveyanceMinLoadThreshold value. • Default value: 5% • Range: 5% to 25% Example: • If the load changes from 30 to 35 or 35 to 30, LCI is conveyed. • if the load changes from 30 to 32, no LCI is conveyed. scpLciConveyanceMinLoadThreshold: This parameter indicates that SCP considers this parameter as a starting point for updating its original load value to peers. • Default value: 30% • Range: 0% to 60% **Note**: If the SCP load value is less than the scpLciConveyanceMinLoadThreshold, then

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		SCP reports zero as a LCI load, considering SCP is not loaded. A zero load value is conveyed as part of the `scpLciConveyanceInterval`. `scpLciConveyancetoUnknownPeer`: This parameter is boolean that denotes whether SCP should convey its LCI to unknown peers or not. When it is enabled, SCP includes its Load LCI in every message which is going to that unknown peer. • Default value: false **Note**: If the SCP load value is less than the `scpLciConveyanceMinLoadThreshold`, then SCP reports zero as a LCI load, considering SCP is not loaded. `peerLciProcessingMinLoadChange`: This parameter indicates minimum load change threshold in peer NF's load as indicated in LCI or from NRF notification that should trigger LCI processing at SCP for that peer NF. • Default value: 5% • Range: 0% to 25% `unknownPeerLciExpiry`: This parameter indicates the existence of unknown peer LCI in SCP. The unknown peer represents inter PLMN NFs. When SCP receives LCI load value from inter PLMN NFs, it caches this LCI load value for the period of `unknownPeerLciExpiry`. • Default value: 300 seconds • Range: 30 to 900 seconds
`traffic_feed`	NA	The `featureSpecificConfig` field is not applicable for traffic_feed. You must keep its value empty, for example, `featureSpecificConfig: {}`

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
egress_host_preference	"featureSpecificConfig": { "hostPreference": { "request": { "apiRootHdrPresent": "passThrough", "apiRootHdrNotPresent": "ip", "scpGeneratedNrfMsg": "ip" }, "response": { "headers": "followRequest" } }, "fqdnResolution": { "fqdn": "nfProfile", "interPlmnFqdn": "dns" } }	`hostPreference.request.apiRootHdrPresent`: This parameter indicates the Host (":authority" header) preference for egress request if "3gpp-Sbi-Target-apiRoot" header is present in the ingress request. • Default value: passThrough • Range: ip, fqdn, or passThrough If set as: – ip: IP is used in host of egress message requests. – fqdn: FQDN is used in host of egress message requests. – passThrough: Uses the same type of host in egress message requests as it is received in ingress message requests. **Note**: The :authority header in the egress request must be FQDN irrespective of the host configurations of `hostPreference.request.apiRootHdrPresent` and `hostPreference.request.apiRootHdrNotPresent` if the identified request is an interplmn request. `hostPreference.request.apiRootHdrNotPresent`: This parameter indicates the host preference (":authority" header) for egress request if "3gpp-Sbi-Target-apiRoot" header is not present in the ingress request. • Default value: ip • Range: ip or fqdn If set as: • ip: IP is used in host of egress message requests. • fqdn: FQDN is used in host of egress message requests. `hostPreference.request.scpGeneratedNrfMsg`: This parameter indicates the host preference (":authority" header) for SCP generated NRF messages. • Default value: ip • Range: ip or fqdn If set as: • ip: IP is used in host of egress message requests. • fqdn: FQDN is used in host of egress message requests. `hostPreference.response.headers`: This parameter indicates the host preference for headers in egress message responses. Host present in "location" header or "3gpp-Sbi-Target-apiRoot" header will be updated as per configuration.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		• Default value: followRequest • Range: followRequest, ip, or fqdn If set as: • ip: IP is used in host of location header or 3gpp-Sbi-Target-apiRoot header for egress message responses. • fqdn: FQDN is used in host of location header or 3gpp-Sbi-Target-apiRoot header for egress message responses. • followRequest: Uses the same host as used for corresponding egress message request. **Note**: If the location header contains absolute URI, SCP does not update the authority in absolute URI. `fqdnResolution.fqdn`: This parameter indicates the resolution preference of egress message requests host FQDN if present. • Default value: nfProfile • Range: dns or nfProfile If set as: • dns: DNS resolution is used to resolve fqdn selected for egress message request. • nfProfile: IP Endpoint is used to resolve fqdn selected for egress message request. `fqdnResolution.interPlmnFqdn`: This parameter indicates the resolution preference of egress message requests inter-plmn FQDN if present. • Default value: dns • Range: dns or nfProfile If set as: • dns: DNS resolution is used to resolve fqdn selected for egress message request. • nfProfile: IP Endpoint is used to resolve fqdn selected for egress message request.
`location_hdr_update_for_host_mismatch`	NA	It is applicable when the "Location" header in the "201 Created" response has authority (FQDN or IP) different from the producer's authority (FQDN or IP) where the message is sent. The featureSpecificConfig field is not applicable for location_hdr_update_for_host_mismatch Keep this field blank. For example, `featureSpecificConfig: {}`

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
cca_header_validation	{ "featureSpecificConfig": { "validations": [{ "type": "subject", "errorProfileName": "ccaVerificationError", "producerNfTypes": ["UDM", "AMF"] }, { "type": "headerPresence", "errorProfileName": "ccaHeaderNotPresentError", "producerNfTypes": ["UDM", "AMF"] }], "tls_crt_san": { "preferred_validation_order": ["URI-ID-URN", "DNS-ID"], "max_entries_to_process": 30 } } }	validations: This parameter indicates the list of all the validations that SCP performs on 3gpp-Sbi-Client-Credentials header. • Default value: {"type": "subject","errorProfileName": "ccaVerificationError","producerNfTypes": [ ]} • Range: subject, headerPresence type: This paremeter indicates the type of validation: • headerPresence: SCP checks the presence of the 3gpp-Sbi-Client-Credentials header in the ingress request. – Validation will pass if the header is present. – Validation will fail if the header is not present. • subject: SCP checks the NF instance ID from the "sub" parameter in the 3gpp-Sbi-Client-Credentials header with the NF instance ID from the list of SANs in the client's TLS certificate. SANs directly have the NF Instance Id or the client's other identity, like the FQDN or IP address, which will be used to get the NF Instance Id. If the 3gpp-Sbi-Client-Credentials header is not present, then this validation will not be performed. – Validation will pass if the NF instance ID from the "sub" parameter matches the NF instance ID from the SAN. – Validation will fail if the NF instance ID from the "sub" parameter doesn't match the NF instance ID from the SAN. – Default value: subject – Range: subject, headerPresence errorProfileName: This parameter is used to generate an error response if the corresponding validation fails. Error profiles can be configured using the REST API: /ocscp/scpc-configuration/{version}/errorProfileConfig. • Default value: ccaVerificationError • Range: NA producerNFTypes: This parameter mentions the name of the producer NF Type. • Default value: null • Range: NA tls_crt_san.preferred_validation_order: This parameter indicates the order format-wise from which SCP picks SAN from the client's TLS certificate for verification of the "subject" type of validation.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		• Default value: URI-ID-URN, DNS-ID, IP-ADDRESS, URI-ID-APIROOT • Range: URI-ID-URN, DNS-ID, IP-ADDRESS, URI-ID-APIROOT `tls_crt_san.max_entries_to_process`: This parameter indicates the maximum number of SANs from the client's TLS certificate that SCP picks for validation. • Default value: 30 • Range: 1-100

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
health_check	featureSpecificConfig: "v1": scpHealthAPI: successRspType: "200WithEmptyPayload", overload: avgScpLoadThresholdValue: 75, overloadRspProfile: "healthCheckErrorProfile" nextHopSCP: isScpHealthCheckSvcEnabled: false requestTimeout: 1000 pollingInterval: 1000 consecutiveErrorResp: 3 conseutiveSuccessResp: 3	This parameter enables the SCP Health Check API feature, which is the default configuration. avgScpLoadThresholdValue: This parameter provides the overall average SCP load threshold value. • Default value: 75% • Range: 75% - 90% successRspType: This parameter indicates successful responses for a healthy SCP. • Default value: 200StatusCodeAndEmptyPayload • Range: 200WithPayLoad, 200WithEmptyPayload, and 204WithNoContent errorProfileName: This parameter indicates the error profile configuration for the health query response in the exception conditions. • Default value: healthCheckErrorProfile. For more information about this parameter, see Configuring Error Profiles. Sample healthCheckErrorProfile: { "name": "healthCheckErrorProfile", "errorProfile": { "status": 503, "cause": "NF_CONGESTION", "title": "NF service is overloaded/congested", "detail": "NF service is overloaded/congested" } isScpHealthCheckSvcEnabled: This parameter enables or disables the SCP health check API feature in inter-scp scenarios. • Default value: false • Range: true or false pollingInterval: This parameter indicates the duration to control the periodicity of health check requests in inter-scp scenarios. • Default value: 1000ms • Range: 300ms -60000ms requestTimeout: This parameter indicates the timer to monitor the waiting time for health check response in inter-scp scenarios. • Default value: 1000ms • Range: 300ms -60000ms noOfConsecutiveErrorResp: This parameter indicates the total number of consecutive failure responses that leads to failover in inter-scp scenarios. • Default value: 3 • Range: 1 - 20 noOfConsecutiveSuccessResp: This parameter indicates the total number of consecutive successful responses that leads to fallback in inter-scp scenarios. • Default value: 3

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		• Range: 1 - 20

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
oauth2_support	"featureSpecificConfig": { "scpAccessTokenCapability": ["INDIRECT_COM_WITH_DELEG_DISC", "INDIRECT_COM_WITHOUT_DELEG_DISC"], "accessTokenConveyance": true, "oauth2AccessTokenValidation": false, "accessTokenValidationTypes": ["TYPE1"], "accessTokenRefreshGuardTime": 60000, "accessTokenValidityGuardTime": 30000, "accessTokenCleanUpPostExpiry": 900000, "accessTokenHistorySize": 10, "accessTokenCacheSize": 50000, "requesterInfo": ["DISCOVERY-HEADERS", "CCA-HEADER", "USER-AGENT-HEADER"], "cacheEnabled": false }	This parameter enables or disables the OAuth2.0 (Open Authorization) access tokens feature. scpAccessTokenCapability: This parameter indicates Access token support for the listed indirect communication modes at SCP. (ENUM) Possible values: [INDIRECT_COM_WITH_DELEG_DISC, INDIRECT_COM_WITHOUT_DELEG_DISC] • INDIRECT_COM_WITH_DELEG_DISC: SCP initiates access token request toward NRF in delegated discovery service request. • INDIRECT_COM_WITHOUT_DELEG_DISC: SCP is expected to forward the service request with or without access token as per configuration at SCP. SCP is not expected to initiate access token request toward NRF. accessTokenConveyance: This parameter conveys acquired access token in the "3gpp-Sbi-Access-Token" header in service response to consumer NFs. • Default value: true • Range: true or false oauth2AccessTokenValidation: This parameter enables or disables validation of OAuth2 access token from consumer NFs. • Default value: Disabled • Range: Disabled or Enabled accessTokenValidationTypes: This parameter configures the list of required validation types in the network. • Default value: empty as default, only TYPE1 is in scope. • Enumeration: validationType. TYPE1: Represents validation for token expiry time. accessTokenRefreshGuardTime: This parameter initiates proactive refresh of cached access token when the configured time expires. The proactive refresh occurs if the relevant SBI messages are in exchange. • Default value: 60000ms • Range: 100ms - 300000ms accessTokenValidityGuardTime: This parameter indicates the time before the access token expiry when SCP considers not to use the existing access token and obtains new access token in the service request forwarded to producer NFs. • Default value: 30000ms • Range: 100ms - 300000ms

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		`accessTokenCleanUpPostExpiry` : This parameter indicates the duration to purge the token from cache. • Default value: 900000ms • Range: 0ms - 3600000ms `accessTokenHistorySize`: This parameter indicates the number of access tokens signature history to identify whether the access token initiated by SCP or not. • Default value: 10 records • Range: 0 - 20 records `accessTokenCacheSize`: This parameter indicates the number of access tokens that can be cached in SCP. • Default value: 50000 records • Range: 5000 - 100000 records `requesterInfo`: This parameter indicates access token requester (consumer NF) Info to generate the access token request. • Prioritized list of default values: 1. DISCOVERY-HEADERS 2. CCA-HEADER 3. USER-AGENT-HEADER `cacheEnabled`: This parameter enables or disables caching of access tokens. • Default value: true • Range: true or false
`nrf_bootstrap_info`	`"featureSpecificConfig": "source": "DNS_SRV ",` `"deRegisterScpDuringMigration": "false"`	`source`: This field is used to select whether the NRF Configuration Using DNS SRV Resolution feature should be enabled or disabled. SCP will enable the feature if the source is DNS_SRV. • Default value: DNS_SRV `deRegisterScpDuringMigration`: In the migration from static to DNS SRV task, if static and DNS SRV NRF configurations are the same, then this parameter will be used to deregister SCP with the old or static NRFset. • Default value: false • Range: true or false

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
olcHSupportInd	"featureSpecificConfig": { "olcHSupportInd": true, "scpOciConveyanceInterval": 2000, "scpOciRecoveryValidityPeriod": 3600, "nextHopScpOciEnabled": true, "nextHopScpOciRuleName": NextHopScpOciRuleName", "nextHopSeppOciEnabled": true, "nextHopSeppOciRuleName": NextHopSeppOciRuleName", "scpOciConveyance": { "enable": true, "unknownPeer": { "request": true, "response": true } } }	If this parameter is set to true, SCP sends the olcHSupportInd parameter in SCP NF profile when registering with NRF (NFRegister) or updating NRF (NFUpdate) to indicate that SCP supports Overload Control Information feature based on the 3gpp-Sbi-Oci header. • Default value: true • Range: true or false scpOciConveanceInterval: This parameter is the interval for reporting SCP OCI to peer NFs. For every interval until the validity period, the last sent OCI is reported to peer NF, irrespective of any change to SCP OCI. Sending SCP OCI periodically ensures that the peer NF has not missed an earlier reported SCP OCI. The same OCI header as sent on the last OCI threshold change or validity period expiry is sent. • Default value: 2000 milliseconds • Range: 2000 to 3600000 milliseconds **Note:** OCI is sent to peer NFs only if there is a message for that NF. scpOciRecoveryValidityPeriod: This parameter indicates the value of the validity period to be sent in the OCI header to peers when SCP recovers from a congestion state. SCP sends OCI to peers with the reduction metric set to 0. • Default value: 3600 seconds • Range: 5 to 3600 seconds nextHopScpOciEnabled: If this parameter is set to true, the OCI feature is enabled for SCP scope OCI. • Default value: true • Range: true, false nextHopScpOciRuleName: If nextHopScpOciEnabled is set to true, OCI feature enforcement is done based on ociConfigRule configured with the name provided as value for this parameter. • Default value: NextHopScpOciRuleName • Range: NextHopScpOciRuleName **Note:** When ociConfigRule is configured for nextHopScpOciRuleName, set relayPeerOci to false and ociEnforcement to true. nextHopSeppOciEnabled: If this parameter is set to true, OCI enforcement is enabled for SEPP scope OCI. • Default value: true • Range: true, false nextHopSeppOciRuleName: If nextHopSeppOciEnabled is set to true, OCI feature enforcement is done based on

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		`ociConfigRule` configured with the name provided as value for this parameter. • Default value: NextHopSeppOciRuleName • Range: NextHopSeppOciRuleName **Note:** When ociConfigRule is configured for nextHopSeppOciRuleName, set relayPeerOci to false and ociEnforcement to true. `scpOciConveyance:enable`: If this parameter is set to true, SCP starts conveying the 3gpp-Sbi-Oci header based on self-overload information. • Default value: true • Range: true or false `scpOciConveyance:unknownPeer:request`: If this parameter is set to true, SCP starts conveying self-OCI tagged to requests toward unknown peers. For unknown peers, identification of peer NFs is done based on message request's FQDN. • Default value:false • Range: true or false `scpOciConveyance:unknownPeer:response`: If this parameter is set to true, SCP starts conveying self-OCI tagged to responses toward unknown peers. • Default value:false • Range: true or false
`ignore_unknown_nfservice`	NA	The `featureSpecificConfig` field is not applicable for ignore_unknown_nfservice. You must keep its value empty, for example, `featureSpecificConfig: {}`
`enhanced_error_rsp`	`"featureSpecificConfig": { "problemDetailsEnhancement": { "errorDetailMaxSize": 2100 } }`	This parameter adds routing attempt information to `ProblemDetails` when SCP generates error responses. It enables SCP to combine all the error responses from both internal and external sources, such as error responses generated by SCP and error responses received from producer NFs while performing alternate routing. `errorDetailMaxSize`: This parameter manages the maximum length limit of the compiled error string in the `detail` parameter of `problemDetails`. SCP truncates the error string from end if the compiled string is greater than the maximum limit. • Default value: 2100 Bytes • Range: 1000 to 3100 Bytes

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description

additional_logging	"featureSpecificConfig": {
	
	"scpGeneratedErrorRspLoggi
	ng": {
	"enabled": false,
	
	"scpServiceNames": [
	"scp-worker"
	]
	}
	}
		This parameter appends additional log attributes, such as errorStatus, errorTitle, errorDetails, errorCause, and sender, to error response logs generated by SCP for WARN level logs.
		scpServiceNames: This parameter contains the list of services for which SCP generates error response logs.
		• Default value: scp-worker
		• Possible Values: ALL, scp-worker
		Note:
		• This value cannot be null.
		• Do not set this parameter to any other microservice when it is set to **ALL**.

log_subscriber_info	"featureSpecificConfig": {
	"scpServiceNames": [
	"ALL"
	]
	}
		This parameter appends User Equipment (UE) identity or subscriber ID to error logs.
		scpServiceNames: This parameter contains the list of services for which subscriber ID is added to their error logs.
		• Default value: ALL
		• Possible Values: ALL, scp-worker, scp-nrfproxy, and scp-nrfproxy-oauth
		Note:
		• This value cannot be null.
		• Do not set this parameter to any other microservice when it is set to **ALL**.

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description

timestamp_headers_support	"featureSpecificConfig": {
	
	"dynamicResponseTimeout": "true",
	
	"updateTimestampHeaders": "true",
	
	"responseTransitTime": {
	"downstreamNF": 50,
	
	"downstreamSCP": 100,
	
	"downstreamSEPP": 300
	}
	}
		To enable or disable the timestamp_headers_support feature.
		• dynamicResponseTimeout: This parameter, when set to true, enables SCP to perform dynamic response time calculations based on the received timestamp headers. It updates or adds the 3gpp-Sbi-Sender-Timestamp and 3gpp-Sbi-Max-Rsp-Time headers in the egress SBI request. Additionally, when this parameter is enabled, the value of updateTimestampHeaders will not have any impact.
		– Date Type: Boolean
		– Default Value: true
		– Range: true or false
		• updateTimestampHeaders: This parameter, when set to true and dynamicResponseTimeout is false, allows SCP to add or update the 3gpp-Sbi-Sender-Timestamp and 3gpp-Sbi-Max-Rsp-Time headers in the egress SBI request. The 3gpp-Sbi-Sender-Timestamp is set to reflect the current timestamp, while the 3gpp-Sbi-Max-Rsp-Time will be set to the configured responseTimeout value for the specific service.
		– Date Type: Boolean
		– Default Value: true
		– Range: true or false
		Moreover, when dynamicResponseTimeout is true, the value of updateTimestampHeaders will not have any impact and should be set to true. In this case, SCP will always add or update the 3gpp-Sbi-Sender-Timestamp and 3gpp-Sbi-Max-Rsp-Time headers in the egress SBI request.
		• responseTransitTime: This parameter specifies the minimum estimated transit time required (in milliseconds) for the response to reach back to the original sender, whether it's the Consumer NF, SCP, or SEPP."responseTransitTime": { "downstreamNF": 50, "downstreamSCP": 100, "downstreamSEPP": 300}
		• responseTransitTime.downstreamNF: This parameter specifies the minimum estimated transit time required (in milliseconds) for the response to return to the original requester NF.
		– Date Type: Integer
		– Default Value: 50
		– Range: 0 - 10000

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Table 2-3 (Cont.) Mapping of FeatureSpecificConfig per Feature

Feature(featureName)	featureSpecificConfig	Description
		• `responseTransitTime.downstreamSCP`: This parameter specifies the minimum estimated transit time required (in milliseconds) for the response to return to the original requester SCP. – Date Type: Integer – Default Value: 100 – Range: 0 - 10000 • `responseTransitTime.downstreamSEPP` : This parameter specifies the minimum estimated transit time required (in milliseconds) for the response to return to the original requester SEPP. – Date Type: Integer – Default Value: 300 – Range: 0 - 10000
`enhanced_notifications_handling`	`"featureSpecificConfig": { "alternateRoutingWithoutServName": false }`	To enable or disable the Enhanced Notifications Handling feature. `alternateRoutingWithoutServName`: Enables or disables SCP to alternate route notification requests even if the service name is unavailable in the 3gpp-Sbi-Routing-Binding header. This parameter can have the following values: • true: Enables SCP to perform alternate routing of notification requests. • false: Refrains SCP from performing alternate routing of notification requests. • Date Type: Boolean • Default Value: false
`ingress_rate_limit`	NA	This is not applicable for `ingress_rate_limit`. You must keep it empty, that is, `featureSpecificConfig: {}`.
`egress_rate_limit`	NA	This is not applicable for `egress_rate_limit`. You must keep it empty, that is, `featureSpecificConfig: {}`.

Response Body

The following table describes response body data models that varies based on the REST operation status.

Table 2-4 Response Body Data Type

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(SCPFeaturesWrapper)	M	1	200 OK	Indicates the list of SCP features (SCPFeaturesWrapper) matching criteria.

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Table 2-4 (Cont.) Response Body Data Type

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
ProblemDetails	M	1	404 NOT FOUND	Returns when the data is not found for given query parameters.

JSON Format

```
[
{
  "featureName": "string",
  "enabled": false,
  "featureSpecificConfig": {

   }
},{
   ....
   ...
  }
]
```

Resource Definition

GET REST API

This resource fetches the SCP feature details (SCPFeaturesWrapper) based on the query parameters.

If no query parameter is provided, all the SCP feature detail are returned.

Resource URI: /ocscp/scpc-configuration/v1/scp-features

The following table describes the URI query parameters supported by the GET method on this resource.

Table 2-5 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
featureName	String	O	Specifies the identity of featureName for which SCP features are fetched.

> **Note**
>
> featureName is a valid combination of query parameter or path variable.

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Table 2-6 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(SCPFeaturesWrapper)	M	1	200 OK	Indicates the list of SCP features or specific record based on query parameters.
ProblemDetails	M	1	404 NOT FOUND	Returns when the data is not found for given query parameters.

Example

Successful response 1

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-features" -H "accept: application/json"


[
 {
  "featureName": "interplmn_routing",
  "enabled": false,
  "featureSpecificConfig": {

   }
}
]
```

Successful response 2

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-features/interplmn_routing" -H "accept: application/json"



{
  "featureName": "interplmn_routing",
  "enabled": false,
  "featureSpecificConfig": {

   }
}
```

Successful response 3

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-features?featureName=interplmn_routing" -H "accept: application/json"
```


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```
{
  "featureName": "interplmn_routing",
  "enabled": false,
  "featureSpecificConfig": {

   }
}
```

Successful response 4

```
curl -X GET "http://10.75.212.104:32287/ocscp/scpc-configuration/v1/scp-
features/egress_host_preference"-H "accept: application/json"



Code: 200

{
  "featureName": "egress_host_preference",
  "enabled": false,
  "featureSpecificConfig": {
    "fqdnResolution": {
      "fqdn": "nfProfile",
      "interPlmnFqdn": "dns"
    },
    "hostPreference": {
      "request": {
        "apiRootHdrPresent": "passThrough",
        "scpGeneratedNrfMsg": "ip",
        "apiRootHdrNotPresent": "ip"
      },
      "response": {
        "headers": "followRequest"
      }
    }
  }
}
```

Failure case 1

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-
features?featureName=routing_options" -H "accept: application/json"


Response Body:
{
  "title": "Not Found",
  "status": "404",
  "detail": "SCP Features configuration data not found against given query
parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/scp-features?
```


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```
featureName=routing_options",
  "cause": "DATA_NOT_FOUND"
}
```

Failure case 2

```
curl -X GET "http://10.75.212.104:32287/ocscp/scpc-configuration/v1/scp-
features/egress_host_preferenceheader1" -H "accept: application/json“



Response Body:
{
  "title": "Not Found",
  "status": "404",
  "detail": "SCP Features configuration data not found against given query
parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/scp-features/
egress_host_preferenceheader1",
  "cause": "DATA_NOT_FOUND"
}
```

PUT REST API

This resource adds or updates the feature-specific information based on the provided feature name in the Resource URI.

Resource URI: /ocscp/scpc-configuration/v1/scp-features/{featureName}

Table 2-7 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
SCPFeaturesWrapper	M	1	200 OK	Indicates the SCP feature configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571 section 5.2.4.1.

Example
Successful response 1:

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-
features" -H "accept: application/json"



[
 {
  "featureName": "interplmn_routing",
  "enabled": false,
  "featureSpecificConfig": {

   }
```


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```
}
]
```

Successful response 2:

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-
features/interplmn_routing" -H "accept: application/json"


{
  "featureName": "interplmn_routing",
  "enabled": false,
  "featureSpecificConfig": {

   }
}
```

Successful response 3:

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-
features?featureName=interplmn_routing" -H "accept: application/json"


{
  "featureName": "interplmn_routing",
  "enabled": false,
  "featureSpecificConfig": {

   }
}
```

Successful response 4:

```
curl -X GET "http://10.75.212.104:32287/ocscp/scpc-configuration/v1/scp-
features/egress_host_preference"-H "accept: application/json"


Code: 200

{
  "featureName": "egress_host_preference",
  "enabled": false,
  "featureSpecificConfig": {
    "fqdnResolution": {
      "fqdn": "nfProfile",
      "interPlmnFqdn": "dns"
    },
    "hostPreference": {
      "request": {
        "apiRootHdrPresent": "passThrough",
        "scpGeneratedNrfMsg": "ip",
        "apiRootHdrNotPresent": "ip"
      },
      "response": {
```


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```
        "headers": "followRequest"
      }
    }
  }
}
```

Successful response 5:

```
$ curl -X 'GET'  'http://10.75.213.5:30472/ocscp/scpc-configuration/v1/scp-
features/location_hdr_update_for_host_mismatch'  -H 'accept: application/
json'


{
  "featureName":"location_hdr_update_for_host_mismatch",
  "enabled":false
}
```

Successful response 6:

```
$ curl -X 'GET' 'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/scp-
features/cca_header_validation' -H 'accept: application/json'


{
  "featureName": "cca_header_validation",
  "enabled": false,
  "featureSpecificConfig": {
    "validations": [
      {
        "type": "subject",
        "errorProfileName": "ccaVerificationError",
        "producerNfType": []
      }
    ],
    "tls_crt_san": {
      "preferred_validation_order": [
        "URI-ID-URN",
        "DNS-ID",
        "IP-ADDRESS",
        "URI-ID-APIROOT"
      ],
      "max_entries_to_process": 30
    }
  }
}
```


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Successful response 7:

```
$ curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-
features/enhanced_error_rsp'  -H 'accept: application/json'


{
  "featureName": "enhanced_error_rsp",
  "enabled": true,
  "featureSpecificConfig": {
    "problemDetailsEnhancement": {
        "errorDetailMaxSize": 2100
    }
  }
}
```

Successful response 8:

```
$ curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-
features/additional_logging'  -H 'accept: application/json'


{
  "featureName": "additional_logging",
  "enabled": false,
  "featureSpecificConfig": {
      "scpGeneratedErrorRspLogging": {
          "enabled": false,
           "scpServiceNames": [
              "scp-worker"
            ]
       }
   }
}
```

Successful response 9:

```
$ curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-
features/log_subscriber_info'  -H 'accept: application/json'


{
  "featureName": "log_subscriber_info",
  "enabled": false,
  "featureSpecificConfig": {
     "scpServiceNames": [
        "ALL"
      ]
   }
}
```


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Successful response 10:

```
$ curl -X GET "http://10.75.212.240:30454/ocscp/scpc-configuration/v1/scp-
features/mediation" -H "accept: application/json"


{
  "featureName": "mediation",
  "enabled": false,
  "featureSpecificConfig": {
    "userDefinedVariable": {
      "enabled": false,
      "maxUserDefinedVariableSize": 1024,
      "maxUserDefinedVariableCount": 100
    }
  },
  "createdTimestamp": "2024-11-13 10:28:24.0",
  "updatedTimestamp": "2024-11-18 08:59:40.0"
}
```

Successful response 11:

```
$ curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-
features/timestamp_headers_support'  -H 'accept: application/json'


{
    "featureName": "timestamp_headers_support",
    "enabled": true,
    "featureSpecificConfig": {
        "dynamicResponseTimeout": true,
        "updateTimestampHeaders": true,
        "responseTransitTime": {
            "downstreamNF": 50,
            "downstreamSCP": 100,
            "downstreamSEPP": 300
        }
    }
}
```

Successful response 12:

```
$ curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-
features/enhanced_notifications_handling'
        -H 'accept:
        application/json'


{
    "featureName": "enhanced_notifications_handling",
    "enabled": true,
    "featureSpecificConfig": {
        "alternateRoutingWithoutServName": true
```


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```
    }
}
```

Failure case 1:

> **Note**
>
> In case SCP is not configured with local or foreign PLMNs and invalid NF type is configured for this feature, you receive a Bad Request 400 with error message.

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/scp-features?
featureName=routing_options"-H "accept:
        application/json"


Response Body:{  "title":
        "Not Found",  "status": "404",  "detail": "SCP Features configuration
data not
        found against given query parameter(s), Please refer to the User
Guide.",  "instance": "/ocscp/scpc-configuration/v1/scp-features?
featureName=routing_options",  "cause": "DATA_NOT_FOUND"}
```

Failure case 2:

```
curl -X GET "http://10.75.212.104:32287/ocscp/scpc-configuration/v1/scp-
features/egress_host_preferenceheader1"-H "accept: application/json“


Response Body:{  "title":
        "Not Found",  "status": "404",  "detail": "SCP Features configuration
data not
        found against given query parameter(s), Please refer to the User
Guide.",  "instance": "/ocscp/scpc-configuration/v1/scp-features/
egress_host_preferenceheader1",  "cause": "DATA_NOT_FOUND"}
```

Failure case 3:

```
curl -X 'GET'  'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/scp-
features/cca_header_validation1'
        -H 'accept:
        application/json'


Response Body:{  "title":
        "Not Found",  "status": "404",  "detail": "SCP Features configuration
data not
        found against given query parameter(s), Please refer to the User
Guide.",  "instance": "/ocscp/scpc-configuration/v1/scp-features/
cca_header_validation1",  "cause": "DATA_NOT_FOUND"}
```


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Failure case 4:

```
curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-features/
additional_loggingxx'
        -H 'accept:
        application/json'


Response Body:{  "title":
        "Not Found",  "status": "404",  "detail": "SCP Features configuration
data not
        found against given query parameter(s), Please refer to the User
Guide.",  "instance": "/ocscp/scpc-configuration/v1/scp-features/
additional_loggingxx",  "cause": "DATA_NOT_FOUND"}
```

Failure case 5:

```
curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-features/
log_susbcriber_infoxx'
        -H 'accept:
        application/json'


Response Body:{  "title":
        "Not Found",  "status": "404",  "detail": "SCP Features configuration
data not
        found against given query parameter(s), Please refer to the User
Guide.",  "instance": "/ocscp/scpc-configuration/v1/scp-features/
log_subscriber_infoxx",  "cause": "DATA_NOT_FOUND"}
```

Failure case 6:

```
$ curl -X 'GET'  'http://<host>:<port>/ocscp/scpc-configuration/v1/scp-
features/timestamp_headers_supportxx'
        -H 'accept:
        application/json'


Response Body:{    "title":
        "Not Found",    "status": 404,    "detail": "SCP Features
        configuration data not found against given query parameter(s), Please
refer to the User
        Guide.",    "instance": "/ocscp/scpc-configuration/v1/scp-features/
timestamp_headers_supportxx",    "cause": "DATA_NOT_FOUND"}
```

2.2 Configuring Routing Options Config

This section describes the routing-options-config REST API parameters to configure a routing option based on the following parameters:

- `messageType`
- `notificationType`
- `nfType`

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- `nfServiceName`
- `method`
- `apiSpecificResourceUri`
- `consumerNfType`

This REST API provides a match criteria for selecting a routing option configuration. When SCP-Worker receives a message request, it extracts the above mentioned attributes from the message request and matches them to select a routing option.

> **Note**
>
> You must configure message routing related parameters, such as `maxRoutingAttempts`, `responseTimeout`, and so on, as described in Configuring Routing Config Set.

Resources

The following table describes the resource name to retrieve, add, or update routing-options-config configuration data:

Table 2-8 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
routing-options-config	/ocscp/scpc-configuration/{version}/routing-options-config	GET	• Retrieves routing options configuration for a given query parameters. • Retrieves all routing options configurations if no query parameter is specified. **Query parameters:** configName, nfType, serviceName, messageType, notificationType, consumerNfType, method, and apiSpecificResourceUri.
routing-options-config	/ocscp/scpc-configuration/{version}/routing-options-config/{configName}	GET	Retrieves routing options configuration for a given configName.

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Table 2-8 (Cont.) Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
routing-options-config	/ocscp/scpc-configuration/{version}/routing-options-config/{configName}	PUT	• Creates new routing options configuration. • Updates routing options configuration if record exists based on provided configName. • routingConfigSetName is a foreign key, and its data should be available before creating records with configName value. • messageType should be available to map to serviceType. • nfServiceName value should be available and exception is '*' value. • nfType value should be available and exception is '*' value. • Default records (defaultSvcNotificationConfig, defaultSvcRequestConfig) cannot be modified.
routing-options-config	/ocscp/scpc-configuration/{version}/routing-options-config/{configName}	DELETE	Removes routing options configuration for a given configName.

Sample Request Body:

```
{
    "configName": "mbkmYqfZzxO5E3vEYeUCg_gmCesZ7g85HC9",
    "routingOptionsConfigData": {
        "messageType": [
            "notification-message"
        ],
        "notificationType": [
            "N1_MESSAGES"
        ],
        "nfType": "udm",
        "nfServiceName": "nudm-uecm",
        "method": [
            "*"
        ],
        "apiSpecificResourceUri": "udm-nudm-uecm",
        "consumerNFType": "*",
        "routingConfigSetName": "r1"
    }
}
```

Resource Definition

GET

This resource fetches all the routing-options-config configurations.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-options-config`

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The following table describes the data structures supported by the GET response body on this resource:

Table 2-9 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
routingOptionsConfigDataWrapper	M	1..N	200 OK	Indicates routing-options-config configurations.

This resource fetches the routing-options-config configuration based on the `configName` parameter.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-options-config/{configName}`

The following table describes the path parameter supported by the GET response body on this resource:

Table 2-10 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configuration information for `configName`.

The following table describes data structures supported by the GET response body on these resources:

Table 2-11 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
routingOptionsConfigDataWrapper	M	1	200 OK	Indicates routing-options-config configurations.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

This resource fetches all the routing-options-config configuration based on queryParams: nfType, serviceName, notificationType, consumerNfType, method, apiSpecificResourceUri, configName, and messageType.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-options-config?nfType={value}&serviceName={value1}&notificationType={value2}&consumerNfType={value3}&method={value4}&apiSpecificResourceUri={value5}&configName={value6}&messageType={value7}`

The following table describes the query parameters that can be matched to retrieve matching entries:

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Table 2-12 Query Parameters

Name	Data Type	Mandatory (M) or Optional (O)	Description
nfType	String	O	Indicates the `nfType` to search. The NF type of the producer NF or server for which routing options are configured.
serviceName	String	O	Indicates the `serviceName` to search. The NF service name of producer NF or server for which routing options are configured.
notificationType	String	O	Fetches configurations based on `notificationType`.
consumerNfType	String	O	Fetches configurations based on `consumerNfType`.
method	String	O	Fetches configurations on `method`.
apiSpecificResourceUri	String	O	Fetches configurations on `apiSpecificResourceUri`.
configName	String	O	Fetches configurations on `configName`.
messageType	String	O	Fetches configurations on `messageType`.

The following table describes data structures supported by the GET response body on these resources:

Table 2-13 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
routingOptionsConfigDataWrapper	M	1..N	200 OK	Indicates routing-options-config configurations.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

Sample of a Successful GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/routing-
options-config/config1' -H 'accept:
    application/json'


{
    "configName": "config1",
    "routingOptionsConfigData": {
        "messageType": [
            "notification-message",
            "svc-request-message"
        ],
        "notificationType": [
            "N1_MESSAGES"
        ],
        "nfType": "udm",
```


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```
            "nfServiceName": "nudm-sdm",
            "method": [
                "DELETE"
            ],
            "apiSpecificResourceUri": "imsi-111110000/sdm-subscriptions/123",
            "consumerNFType": "*",
            "routingConfigSetName": "notification_req_default_config_set"
        },
        "createdTimestamp": "2024-08-06 11:18:29",
        "updatedTimestamp": "2024-08-06 11:18:29"
}
```

Sample of an Error GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/routing-
options-config/config108' -H 'accept:
    application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "Ocscp Routing Options Config data not found against given
configName. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/routing-options-config/
config108",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

PUT

This resource configures routing-options-config configuration for a given data.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-options-config/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-14 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Key for configurations on routingOptionsConfig.

The following table describes the data structures supported by the PUT request body on this resource:

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Table 2-15 Request Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Description
routingOptionsConfigDataWrapper	M	1	Indicates nftypes-nfservices configurations to be added or modified.

The following table describes data structures supported by the PUT response body on these resources:

Table 2-16 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
routingOptionsConfigDataWrapper	M	1	200 OK	Successfully updated routing-options-config data.
routingOptionsConfigDataWrapper	M	1	201 Created	Successfully created routing-options-config data.
ProblemDetails	M	1	400 Bad Request	Indicates problem details.
ProblemDetails	M	1	403 Forbidden	Forbidden updating default values.

Sample of a Successful PUT Response

```
curl -X 'PUT' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/routing-
options-config/config1' -H 'accept: application/json' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config1",
    "routingOptionsConfigData": {
        "nfType": "UDM",
        "nfserviceName": "nudm-uecm",
        "messageType": ["notification-message", "svc-request-message"],
        "routingConfigSetName": "udm_nudm-uecm_routing_config_set",
        "notificationType": ["N1_MESSAGES"],
        "consumerNFType": "*",
        "method": ["*"],
        "apiSpecificResourceUri": "imsi-111110000/registrations/amf-3gpp-
access"
    },
    "createdTimestamp": "2024-04-24 14:50:56.0",
    "updatedTimestamp": "2024-04-24 14:50:56.0"
}'


{
    "configName": "config1",
```


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```
    "routingOptionsConfigData": {
        "messageType": [
            "notification-message",
            "svc-request-message"
        ],
        "notificationType": [
            "N1_MESSAGES"
        ],
        "nfType": "UDM",
        "nfServiceName": "nudm-uecm",
        "method": [
            "*"
        ],
        "apiSpecificResourceUri": "imsi-111110000/registrations/amf-3gpp-
access",
        "consumerNFType": "*",
        "routingConfigSetName": "udm_nudm-uecm_routing_config_set"
    },
    "createdTimestamp": "2024-07-31 09:07:12",
    "updatedTimestamp": "2024-07-31 09:07:12"
}
```


Sample of an Error PUT Response

```
curl -X 'PUT' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/routing-
options-config/config111' -H 'accept: application/json' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config111",
    "routingOptionsConfigData": {
        "nfType": "CUSTOM_UDM",
        "nfserviceName": "nudm-uecm",
        "messageType": ["notification-message", "svc-request-message"],
        "routingConfigSetName": "udm_nudm-uecm_routing_config_set",
        "notificationType": ["N1_MESSAGES"],
        "consumerNFType": "*",
        "method": ["*"],
        "apiSpecificResourceUri": "imsi-111110000/registrations/amf-3gpp-
access"
    },
    "createdTimestamp": "2024-04-24 14:50:56.0",
    "updatedTimestamp": "2024-04-24 14:50:56.0"
}'


{
    "title": "Bad Request",
    "status": 400,
    "detail": "NfType NfService ServiceType/MessageType combination is not
configured. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/routing-options-config/
config111",
    "cause": "MANDATORY_IE_INCORRECT"
}
```


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```
400 Error: Bad Request
```

Sample 2 of an Error PUT Response

```
curl -X 'PUT' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/routing-
options-config/defaultSvcRequestConfig' -H 'accept: application/json' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "configName": "defaultSvcRequestConfig",
  "routingOptionsConfigData": {
        "nfType": "CUSTOM_UDM",
        "nfserviceName": "nudm-uecm",
        "messageType": ["notification-message", "svc-request-message"],
        "routingConfigSetName": "udm_nudm-uecm_routing_config_set",
        "notificationType": ["N1_MESSAGES"],
        "consumerNFType": "*",
        "method": ["*"],
        "apiSpecificResourceUri": "imsi-111110000/registrations/amf-3gpp-
access"
    }
}'


{
    "title": "Forbidden",
    "status": 403,
    "detail": "The default configuration cannot be updated. Please refer to
the user guide.",
    "instance": "/ocscp/scpc-configuration/v1/routing-options-config/
defaultSvcRequestConfig",
    "cause": "MODIFICATION_NOT_ALLOWED"
}

403 Error: Forbidden
```

DELETE

This resource removes the routing-options-config configuration based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-options-config/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-17 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Removes configurations based on `configName`.

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The following table describes the data structures supported by the DELETE response body on this resource:

Table 2-18 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
ProblemDetails	M	1	403 Forbidden	Removes default data results
ProblemDetails	M	1	404 Not Found	Indicates the problem details.
NA	-	1	204 No Content	Successful removal of record.

Sample of a Successful DELETE Response

```
curl -X 'DELETE' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
routing-options-config/config111' -H 'accept: application/json' \  -H 'accept:
    application/json'


204 No Content
```

Sample of an Error DELETE Response

```
curl -X 'DELETE' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
routing-options-config/config111' -H 'accept: application/json' \
  -H 'accept: application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "Ocscp Routing Options Config data not found against given
configName. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/routing-options-config/
config111",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Sample 2 of an Error DELETE Response

```
curl -X 'DELETE' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
routing-options-config/defaultSvcRequestConfig' -H 'accept: application/json'
\
  -H 'accept: application/json'


{
    "title": "Forbidden",
    "status": 403,
    "detail": "The default configuration cannot be deleted. Please refer to
the User Guide.",
```


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```
    "instance": "/ocscp/scpc-configuration/v1/routing-options-config/
defaultSvcRequestConfig",
    "cause": "DATA_CANT_DELETED"
}

403 Error: Forbidden
```

Data Model

The following table describes data model for request or response:

Table 2-19 routingOptionsConfigDataWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Unique configName key to identify the records. Number of characters is 256. Allowed character combinations should be alpha-numeric, hyphen, and underscore.
routingOptionsConfigData	JSON	M	User defined values for json data, structure is predefined with keys as defined in routingOptionsConfigData.
createdTimestamp	String	Read Only	Timestamp of the created record. This is not required in the request, but it is present in the response.
updatedTimestamp	String	Read Only	Timestamp of the updated record. This is not required in the request, but it is present in the response.

The following table describes parameters of routingOptionsConfigData:

Table 2-20 routingOptionsConfigData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
nfType	String	M	NA	Allowed character combinations should be alpha-numeric, hyphen, underscore, and *.	The NF type for which routing options are configured. This is either 3GPP defined NFType as per TS 29.510 or custom NFType. Entry for NFType SCP and SEPP is not allowed. "*" keyword is allowed to indicate any NFType match. **Length:** 100
nfServiceName	String	M	NA	Allowed character combinations should be alpha-numeric, hyphen, underscore, and *.	The NF service name for which routing options are configured. This is either 3GPP defined serviceName as per TS29.510 or any custom service name. If a particular NFType does not have NF service, '*' keyword is used for serviceName. **Length:** 100

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Table 2-20 (Cont.) routingOptionsConfigData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
messageType	Array(Enum)	M	NA	["notification-message", "svc-request-message"]	List of types of messages, such as notifications and SBI-messages, for which the routing configurations will apply. messageType is a foreign key mapped to serviceType and the mapping of servcie_type should be available.
routingConfigSetName	String	M	NA	Allowed character combinations should be alpha-numeric, hyphen, and underscore.	Name of the Routing Config set record, a rule with this name must be available.
notificationType	Array(Enum)	O	*	N1_MESSAGES, N2_INFORMATION, LOCATION_NOTIFICATION, DATA_REMOVAL_NOTIFICATION, DATA_CHANGE_NOTIFICATION, *, LOCATION_UPDATE_NOTIFICATION, NSSA_REAUTH_NOTIFICATION, NSSA_REVOC_NOTIFICATION,MATCH_INFO_NOTIFICATION, DATA_RESTORATION_NOTIFICATION, TSCTS_NOTIFICATION,LCS_KEY_DELIVERY_NOTIFICATION, UUAA_MM_AUTH_NOTIFICATION	Indicates the notification type. If messageType has notification messages, notificationType may be configured. If messageType is only svc-request-message, notificationType must be blank. If messageType is only notification-message, notificationType is optional, and it can be configured. If not configured, '*' value will be configured. If messageType is both, notificationType is optional, and it can be configured. If not configured by user, '*' value will be configured.

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Table 2-20 (Cont.) routingOptionsConfigData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
`consumerNFType`	String	O	*	*	Configures consumer NFType. It decides routing options based on the consumer NFType that sends the message to SCP for routing. In the current implementation, this parameter supports "*" as value, which means match all. If consumerNfType is not provided or null or empty is provided, '*' will be configured for `consumerNfType`. **Length:** 100
`method`	Array(Enum)	O	Array having the * value	*,GET,PUT,POST,PATCH,OPTIONS,TRACE,HEAD,CONNECT,DELETE	Indicates the method type. If no value is provided, '*' is configured for `method`. This indicates that SCP-Worker will match any method type from following list: • GET • PUT • POST • PATCH • OPTIONS • TRACE • HEAD • CONNECT • DELETE **Note:** Both `method` and `apiSpecificResourceUri` should be configured for service operation specific configurations.

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Table 2-20 (Cont.) routingOptionsConfigData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
apiSpecificResourceUri	String	O	.*	-	REGEX expression which is used to validate apiSpecificResourceUri in the RX request. Sample: Ingress request URI: /USEast/nudm-uecm/v1/imsi-100000001/registrations/amf-3gpp-access Incorrect regex: imsi-100000001/registrations/amf-3gpp-access Correct regex: /imsi-100000001/registrations/amf-3gpp-access Ingress request URI: /USEast/nausf-auth/v1/ue-authentications Correct regex: *auth.* **Note:** Both method and apiSpecificResourceUri should be configured for service operation specific configurations.

> **Note**
>
> - The "*" value for a parameter indicates that any value of the parameter is accepted when matching is done.
> - Duplicate entries are rejected with error response 400, Bad Request.

2.3 Configuring Routing Config Set

This section describes the routing-config-set REST API to define routing options parameters, such as maxRoutingAttempts, responseTimeout, and so on. These parameters are mapped with service operation related parameters in Configuring Routing Options Config. These routing options parameters are applied to a certain message routing when matched with service operation parameters.

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Resources

The following table describes the resource name to retrieve, add, update, and remove routing config set configurations based on the query parameters:

Table 2-21 Resources

Resource Name	Resource URI	HTTP Method	Query Parameter	Description
routing-config-set	/ocscp/scpc-configuration/<version>/routing-config-set/<routingConfigSetName>	GET	None	Retrieves routing config set records based on `routingConfigSetName`.
routing-config-set	/ocscp/scpc-configuration/<version>/routing-config-set/	GET	None	Retrieves all routing config set records.
routing-config-set	/ocscp/scpc-configuration/<version>/routing-config-set/<routingConfigSetName>	PUT	None	• Create and update the new routing config set. • Default routing config set record (notification_req_default_config_set, svc_req_default_config_set) can be updated.
routing-config-set	/ocscp/scpc-configuration/<version>/routing-config-set/<routingConfigSetName>	DELETE	None	• Removes the routing config set record for the given `routingConfigSetName`. • The default routing config set records (notification_req_default_config_set, svc_req_default_config_set) cannot be removed. • Deletion can only be processed if ocscp routing options has no reference to the specified `routingConfigSetName`. .

Resource Definition

GET

This resource fetches the routing conifig set configurations for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-config-set/{routingConfigSetName}`

The following table describes the URI query parameters supported by the GET method on this resource.

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Table 2-22 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
routingConfigSetName	String	O	The name of the routing config set used to retrieve the respective configurations.

The following table describes the data structures supported by the GET response body on this resource:

Table 2-23 Data Structures

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
routingConfigSetWrapperV2	M	1	200 OK	The routing options with the rule name.
ProblemDetails	M	1	404 Not Found	Problem details

Example

Sample Successful Response

```
curl -v -H "Content-Type: application/json" --request GET  http://
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set/
notification_req_default_config_set


200 OK

{
    "routingConfigSetName": "notification_req_default_config_set",
    "routingOptions": {
        "srv": {
            "maxRoutingAttempts": 3,
            "alternateRouting": true
        },
        "pod": {
            "alternateRouting": true,
            "maxRoutingAttempts": 1
        },
        "alternateNFGroupRoutingOptions": {
            "mode": "NF_SET"
        },
        "totalTransactionLifetime": "6s",
        "responseTimeout": "1s",
        "reRouteConditionList": [{
                "statusCode": "307"
            }, {
                "statusCode": "308"
            }, {
                "statusCode": "429"
            }, {
                "statusCode": "5xx"
```


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```
                    }, {
                        "statusCode": "timeout"
                    }, {
                        "statusCode": "connectionError"
                    }
                ],
                "exceptionErrorResponses": [{
                        "name": "Destination_Exhausted",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile":
"default_exception_error_destination_exhausted"
                    }, {
                        "name": "No_Response",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "default_exception_error_no_response"
                    }, {
                        "name": "Connect_Failure",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "default_exception_error_connect_failure"
                    }, {
                        "name": "No_Host",
                        "action": "Send_Answer",
                        "error_code": 400,
                        "error_response": "Bad Request",
                        "error_profile": "default_exception_error_no_host"
                    }, {
                        "name": "Insufficient_Time",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "timeHdrInsufficientTimeErrorProfile"
                    }
                ],
                "nextHopSCP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptions": [{
                            "name": "Destination_Exhausted",
                            "action": "Send_Answer",
                            "error_code": 504,
```


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```
                    "error_response": "Gateway Timeout",
                    "error_profile":
"default_exception_error_destination_exhausted"
                }
            ]
        },
        "nextHopSEPP": {
            "totalTransactionLifetime": "7s",
            "responseTimeout": "4s",
            "service": {
                "maxRoutingAttempts": 2
            },
            "serviceEndpoint": {
                "maxRoutingAttempts": 1
            },
            "reRouteConditionList": [{
                    "statusCode": "307"
                }, {
                    "statusCode": "308"
                }, {
                    "statusCode": "429"
                }, {
                    "statusCode": "5xx"
                }, {
                    "statusCode": "timeout"
                }, {
                    "statusCode": "connectionError"
                }
            ],
            "exceptions": [{
                    "name": "No_Host",
                    "action": "Send_Answer",
                    "error_code": 400,
                    "error_response": "Bad Request",
                    "error_profile": "default_exception_error_no_host"
                }, {
                    "name": "Destination_Exhausted",
                    "action": "Send_Answer",
                    "error_code": 504,
                    "error_response": "Gateway Timeout",
                    "error_profile":
"default_exception_error_destination_exhausted"
                }
            ]
        },
        "assignPreferredLocality": false,
        "overridePreferredLocality": false,
        "forwardRevisedPreferredLocality": false
    },
    "createdTimestamp": "2024-11-15 08:07:32",
    "updatedTimestamp": "2024-11-15 08:07:32"
}
```


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Sample Failure Response

```
curl -v -H "Content-Type: application/json" --request GET  http://
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set/defaultConfig


404 Not Found

{"title":"Not Found","status":"404","detail":"RoutingConfigSet data not found
against given RoutingConfigSetName . Please refer to the User
Guide.","instance":"/ocscp/scpc-configuration/v1/routing-config-set/
defaultConfig","cause":"DATA_NOT_FOUND"}
```

This resource fetches the routing config set configurations for all rules.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-config-set`

The following table describes the data structures supported by the GET response body on this resource:

Table 2-24 Data Structures

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
routingConfigSetWrapperV2	M	1..N	200 OK	The routing options data with the rule name.

Sample Routing Config Set Configurations for GET:

```
curl - v - H "Content-Type: application/json"--request GET http: //
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set


200 OK

[{
        "routingConfigSetName": "notification_req_default_config_set",
        "routingOptions": {
            "srv": {
                "maxRoutingAttempts": 3,
                "alternateRouting": true
            },
            "pod": {
                "alternateRouting": true,
                "maxRoutingAttempts": 1
            },
            "alternateNFGroupRoutingOptions": {
                "mode": "NF_SET"
            },
            "totalTransactionLifetime": "6s",
            "responseTimeout": "1s",
            "reRouteConditionList": [{
                    "statusCode": "307"
                }, {
                    "statusCode": "308"
```


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```
                    }, {
                        "statusCode": "429"
                    }, {
                        "statusCode": "5xx"
                    }, {
                        "statusCode": "timeout"
                    }, {
                        "statusCode": "connectionError"
                    }
                ],
                "exceptionErrorResponses": [{
                        "name": "Destination_Exhausted",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile":
"default_exception_error_destination_exhausted"
                    }, {
                        "name": "No_Response",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "default_exception_error_no_response"
                    }, {
                        "name": "Connect_Failure",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "default_exception_error_connect_failure"
                    }, {
                        "name": "No_Host",
                        "action": "Send_Answer",
                        "error_code": 400,
                        "error_response": "Bad Request",
                        "error_profile": "default_exception_error_no_host"
                    }, {
                        "name": "Insufficient_Time",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "timeHdrInsufficientTimeErrorProfile"
                    }
                ],
                "nextHopSCP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "connectionError"
                        }
                    ],
```


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```
                    "exceptions": [{
                            "name": "Destination_Exhausted",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile":
"default_exception_error_destination_exhausted"
                        }
                    ]
                },
                "nextHopSEPP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "307"
                        }, {
                            "statusCode": "308"
                        }, {
                            "statusCode": "429"
                        }, {
                            "statusCode": "5xx"
                        }, {
                            "statusCode": "timeout"
                        }, {
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptions": [{
                            "name": "No_Host",
                            "action": "Send_Answer",
                            "error_code": 400,
                            "error_response": "Bad Request",
                            "error_profile": "default_exception_error_no_host"
                        }, {
                            "name": "Destination_Exhausted",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile":
"default_exception_error_destination_exhausted"
                        }
                    ]
                },
                "assignPreferredLocality": false,
                "overridePreferredLocality": false,
                "forwardRevisedPreferredLocality": false
            },
            "createdTimestamp": "2024-10-15 08:07:32",
            "updatedTimestamp": "2024-10-15 08:07:32"
        }, {
```


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```
                "routingConfigSetName": "svc_req_default_config_set",
                "routingOptions": {
                    "srv": {
                        "maxRoutingAttempts": 3,
                        "alternateRouting": true
                    },
                    "pod": {
                        "alternateRouting": true,
                        "maxRoutingAttempts": 1
                    },
                    "alternateNFGroupRoutingOptions": {
                        "mode": "NF_SET"
                    },
                    "totalTransactionLifetime": "6s",
                    "responseTimeout": "1s",
                    "reRouteConditionList": [{
                            "statusCode": "307"
                        }, {
                            "statusCode": "308"
                        }, {
                            "statusCode": "429"
                        }, {
                            "statusCode": "5xx"
                        }, {
                            "statusCode": "timeout"
                        }, {
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptionErrorResponses": [{
                            "name": "No_Response",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile": "default_exception_error_no_response"
                        }, {
                            "name": "Connect_Failure",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile": "default_exception_error_connect_failure"
                        }, {
                            "name": "Destination_Exhausted",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile":
            "default_exception_error_destination_exhausted"
                        }, {
                            "name": "No_Host",
                            "action": "Send_Answer",
                            "error_code": 400,
                            "error_response": "Bad Request",
                            "error_profile": "default_exception_error_no_host"
                        }, {
                            "name": "Insufficient_Time",
```


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```
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "timeHdrInsufficientTimeErrorProfile"
                    }
                ],
                "nextHopSCP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptions": [{
                            "name": "Destination_Exhausted",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile":
"default_exception_error_destination_exhausted"
                        }
                    ]
                },
                "nextHopSEPP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "307"
                        }, {
                            "statusCode": "308"
                        }, {
                            "statusCode": "429"
                        }, {
                            "statusCode": "5xx"
                        }, {
                            "statusCode": "timeout"
                        }, {
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptions": [{
                            "name": "No_Host",
                            "action": "Send_Answer",
                            "error_code": 400,
```


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```
                        "error_response": "Bad Request",
                        "error_profile": "default_exception_error_no_host"
                    }, {
                        "name": "Destination_Exhausted",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile":
"default_exception_error_destination_exhausted"
                    }
                ]
            },
            "assignPreferredLocality": false,
            "overridePreferredLocality": false,
            "forwardRevisedPreferredLocality": false
        },
        "createdTimestamp": "2024-10-15 08:07:32",
        "updatedTimestamp": "2024-10-15 08:07:32"
    }
]
```

PUT

This resource creates or updates routing config set records for the specified `routingConfigSetName`.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-config-set/{routingConfigSetName}`

Table 2-25 URI Query Parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
routingConfigSetName	String	M	The name of the routing config set rule using which the respective routing config set is created or updated.

Table 2-26 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
routingConfigSetWrapperV2	M	1	200 OK	This response is generated when an existing record is updated.
routingConfigSetWrapperV2	M	1	201	This response is generated when a new record is created.
ProblemDetails	M	1	400 Bad Request	Returns problem details.

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Sample Success Response of Routing Config Set Configurations for PUT:

```
curl -v -H "Content-Type: application/json" --request PUT  http://
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set/config1 -d


'{"routingConfigSetName":"config1","routingOptions":{"srv":
{"maxRoutingAttempts":3,"alternateRouting":true},"pod":
{"alternateRouting":true,"maxRoutingAttempts":1},"alternateNFGroupRoutingOptio
ns":
{"mode":"NF_SET"},"totalTransactionLifetime":"6s","responseTimeout":"1s","reRo
uteConditionList":[{"statusCode":"307"},{"statusCode":"308"},
{"statusCode":"429"},{"statusCode":"5xx"},{"statusCode": "timeout"},
{"statusCode": "connectionError"}],"exceptionErrorResponses":
[{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"erro
r_response":"Gateway Timeout"},
{"name":"No_Response","action":"Send_Answer","error_code":504,"error_response"
:"Gateway Timeout"},
{"name":"Connect_Failure","action":"Send_Answer","error_code":504,"error_respo
nse":"Gateway Timeout"},
{"name":"No_Host","action":"Send_Answer","error_code":504,"error_response":"Ga
teway Timeout"},
{"name":"Insufficient_Time","action":"Send_Answer","error_code":504,"error_res
ponse":"Gateway Timeout"}],"nextHopSCP":
{"totalTransactionLifetime":"7s","responseTimeout":"4s","reRouteConditionList"
:[{"statusCode":"connectionError"}],"service":
{"maxRoutingAttempts":2},"serviceEndpoint":
{"maxRoutingAttempts":1},"exceptions":
[{"name":"No_Host","action":"Send_Answer","error_code":504,"error_response":"G
ateway Timeout"},
{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"error
_response":"Gateway Timeout"}]},"nextHopSEPP":
{"totalTransactionLifetime":"7s","responseTimeout":"4s","service":
{"maxRoutingAttempts":2},"serviceEndpoint":
{"maxRoutingAttempts":1},"reRouteConditionList":[{"statusCode":"307"},
{"statusCode":"308"},{"statusCode":"429"},{"statusCode":"5xx"},{"statusCode":
"timeout"}, {"statusCode": "connectionError"}],"exceptions":
[{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"erro
r_response":"Gateway
Timeout"}]},"assignPreferredLocality":false,"overridePreferredLocality":false,
"forwardRevisedPreferredLocality":false}}'

201 Created

{"routingConfigSetName":"config1","routingOptions":{"srv":
{"maxRoutingAttempts":3,"alternateRouting":true},"pod":
{"alternateRouting":true,"maxRoutingAttempts":1},"alternateNFGroupRoutingOptio
ns":
{"mode":"NF_SET"},"totalTransactionLifetime":"6s","responseTimeout":"1s","reRo
uteConditionList":[{"statusCode":"307"},{"statusCode":"308"},
{"statusCode":"429"},{"statusCode":"5xx"},{"statusCode": "timeout"},
{"statusCode": "connectionError"}],"exceptionErrorResponses":
[{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"erro
r_response":"Gateway Timeout"},
{"name":"No_Response","action":"Send_Answer","error_code":504,"error_response"
:"Gateway Timeout"},
```


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```
{"name":"Connect_Failure","action":"Send_Answer","error_code":504,"error_respo
nse":"Gateway Timeout"},
{"name":"No_Host","action":"Send_Answer","error_code":504,"error_response":"Ga
teway Timeout"},
{"name":"Insufficient_Time","action":"Send_Answer","error_code":504,"error_res
ponse":"Gateway Timeout"}],"nextHopSCP":
{"totalTransactionLifetime":"7s","responseTimeout":"4s","reRouteConditionList"
:[{"statusCode":"connectionError"}],"service":
{"maxRoutingAttempts":2},"serviceEndpoint":
{"maxRoutingAttempts":1},"exceptions":
[{"name":"No_Host","action":"Send_Answer","error_code":504,"error_response":"G
ateway Timeout"},
{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"error
_response":"Gateway Timeout"}]},"nextHopSEPP":
{"totalTransactionLifetime":"7s","responseTimeout":"4s","service":
{"maxRoutingAttempts":2},"serviceEndpoint":
{"maxRoutingAttempts":1},"reRouteConditionList":[{"statusCode":"307"},
{"statusCode":"308"},{"statusCode":"429"},{"statusCode":"5xx"},{"statusCode":
"timeout"}, {"statusCode": "connectionError"}],"exceptions":
[{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"erro
r_response":"Gateway
Timeout"}]},"assignPreferredLocality":false,"overridePreferredLocality":false,
"forwardRevisedPreferredLocality":false},"createdTimestamp":"2024-11-20
09:57:45","updatedTimestamp":"2024-11-20 09:57:45"}
```


Sample Success Response 2 of Routing Config Set Configurations for PUT:

```
curl -X 'PUT' \
  'http://10.75.225.5:31768/ocscp/scpc-configuration/v1/routing-config-set/
config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '


{
    "routingConfigSetName": "config1",
    "routingOptions": {
        "srv": {
            "maxRoutingAttempts": 3,
            "alternateRouting": true
        },
        "pod": {
            "alternateRouting": true,
            "maxRoutingAttempts": 1
        },
        "alternateNFGroupRoutingOptions": {
            "mode": "NF_SET"
        },
        "totalTransactionLifetime": "6s",
        "responseTimeout": "1s",
        "reRouteConditionList": [{
                "statusCode": "307"
            }, {
                "statusCode": "308"
```


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```
                    }, {
                        "statusCode": "429"
                    }, {
                        "statusCode": "5xx"
                    }, {
                        "statusCode": "timeout"
                    }, {
                        "statusCode": "connectionError"
                    }
                ],
                "exceptionErrorResponses": [{
                        "name": "Destination_Exhausted",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile":
"default_exception_error_destination_exhausted"
                    }, {
                        "name": "No_Response",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "default_exception_error_no_response"
                    }, {
                        "name": "Connect_Failure",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "default_exception_error_connect_failure"
                    }, {
                        "name": "No_Host",
                        "action": "Send_Answer",
                        "error_code": 400,
                        "error_response": "Bad Request",
                        "error_profile": "default_exception_error_no_host"
                    }, {
                        "name": "Insufficient_Time",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "timeHdrInsufficientTimeErrorProfile"
                    }
                ],
                "nextHopSCP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "connectionError"
                        }
                    ],
```


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```
                "exceptions": [{
                        "name": "Destination_Exhausted",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile":
"default_exception_error_destination_exhausted"
                    }
                ]
            },
            "nextHopSEPP": {
                "totalTransactionLifetime": "7s",
                "responseTimeout": "4s",
                "service": {
                    "maxRoutingAttempts": 2
                },
                "serviceEndpoint": {
                    "maxRoutingAttempts": 1
                },
                "reRouteConditionList": [{
                        "statusCode": "307"
                    }, {
                        "statusCode": "308"
                    }, {
                        "statusCode": "429"
                    }, {
                        "statusCode": "5xx"
                    }, {
                        "statusCode": "timeout"
                    }, {
                        "statusCode": "connectionError"
                    }
                ],
                "exceptions": [{
                        "name": "No_Host",
                        "action": "Send_Answer",
                        "error_code": 400,
                        "error_response": "Bad Request",
                        "error_profile": "default_exception_error_no_host"
                    }, {
                        "name": "Destination_Exhausted",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile":
"default_exception_error_destination_exhausted"
                    }
                ]
            },
            "assignPreferredLocality": false,
            "overridePreferredLocality": false,
            "forwardRevisedPreferredLocality": false
        }
}'

 201 Created
```


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```
{
    "routingConfigSetName": "config1",
    "routingOptions": {
        "srv": {
            "maxRoutingAttempts": 3,
            "alternateRouting": true
        },
        "pod": {
            "alternateRouting": true,
            "maxRoutingAttempts": 1
        },
        "alternateNFGroupRoutingOptions": {
            "mode": "NF_SET"
        },
        "totalTransactionLifetime": "6s",
        "responseTimeout": "1s",
        "reRouteConditionList": [{
                "statusCode": "307"
            }, {
                "statusCode": "308"
            }, {
                "statusCode": "429"
            }, {
                "statusCode": "5xx"
            }, {
                "statusCode": "timeout"
            }, {
                "statusCode": "connectionError"
            }
        ],
        "exceptionErrorResponses": [{
                "name": "Destination_Exhausted",
                "action": "Send_Answer",
                "error_code": 504,
                "error_response": "Gateway Timeout",
                "error_profile":
"default_exception_error_destination_exhausted"
            }, {
                "name": "No_Response",
                "action": "Send_Answer",
                "error_code": 504,
                "error_response": "Gateway Timeout",
                "error_profile": "default_exception_error_no_response"
            }, {
                "name": "Connect_Failure",
                "action": "Send_Answer",
                "error_code": 504,
                "error_response": "Gateway Timeout",
                "error_profile": "default_exception_error_connect_failure"
            }, {
                "name": "No_Host",
                "action": "Send_Answer",
                "error_code": 400,
                "error_response": "Bad Request",
                "error_profile": "default_exception_error_no_host"
```


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```
                    }, {
                        "name": "Insufficient_Time",
                        "action": "Send_Answer",
                        "error_code": 504,
                        "error_response": "Gateway Timeout",
                        "error_profile": "timeHdrInsufficientTimeErrorProfile"
                    }
                ],
                "nextHopSCP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptions": [{
                            "name": "Destination_Exhausted",
                            "action": "Send_Answer",
                            "error_code": 504,
                            "error_response": "Gateway Timeout",
                            "error_profile":
"default_exception_error_destination_exhausted"
                        }
                    ]
                },
                "nextHopSEPP": {
                    "totalTransactionLifetime": "7s",
                    "responseTimeout": "4s",
                    "service": {
                        "maxRoutingAttempts": 2
                    },
                    "serviceEndpoint": {
                        "maxRoutingAttempts": 1
                    },
                    "reRouteConditionList": [{
                            "statusCode": "307"
                        }, {
                            "statusCode": "308"
                        }, {
                            "statusCode": "429"
                        }, {
                            "statusCode": "5xx"
                        }, {
                            "statusCode": "timeout"
                        }, {
                            "statusCode": "connectionError"
                        }
                    ],
                    "exceptions": [{
                            "name": "No_Host",
```


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```
                    "action": "Send_Answer",
                    "error_code": 400,
                    "error_response": "Bad Request",
                    "error_profile": "default_exception_error_no_host"
                }, {
                    "name": "Destination_Exhausted",
                    "action": "Send_Answer",
                    "error_code": 504,
                    "error_response": "Gateway Timeout",
                    "error_profile":
"default_exception_error_destination_exhausted"
                }
            ]
        },
        "assignPreferredLocality": false,
        "overridePreferredLocality": false,
        "forwardRevisedPreferredLocality": false
    },
    "createdTimestamp": "2024-10-15 08:07:32",
    "updatedTimestamp": "2024-10-15 08:07:32"
}
```

Sample Fail Response of Routing Config Set Configurations for PUT:

```
curl -v -H "Content-Type: application/json" --request PUT  http://
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set/config1123 -d


 '{"routingConfigSetName":"config1","routingOptions":{"srv":
{"maxRoutingAttempts":3,"alternateRouting":true},"pod":
{"alternateRouting":true,"maxRoutingAttempts":1},"alternateNFGroupRoutingOptio
ns":
{"mode":"NF_SET"},"totalTransactionLifetime":"6s","responseTimeout":"1s","reRo
uteConditionList":[{"statusCode":"307"},{"statusCode":"308"},
{"statusCode":"429"},{"statusCode":"5xx"},{"statusCode": "timeout"},
{"statusCode": "connectionError"}],"exceptionErrorResponses":
[{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"erro
r_response":"Gateway Timeout"},
{"name":"No_Response","action":"Send_Answer","error_code":504,"error_response"
:"Gateway Timeout"},
{"name":"Connect_Failure","action":"Send_Answer","error_code":504,"error_respo
nse":"Gateway Timeout"},
{"name":"No_Host","action":"Send_Answer","error_code":504,"error_response":"Ga
teway Timeout"},
{"name":"Insufficient_Time","action":"Send_Answer","error_code":504,"error_res
ponse":"Gateway Timeout"}],"nextHopSCP":
{"totalTransactionLifetime":"7s","responseTimeout":"4s","reRouteConditionList"
:[{"statusCode":"connectionError"}],"service":
{"maxRoutingAttempts":2},"serviceEndpoint":
{"maxRoutingAttempts":1},"exceptions":
[{"name":"No_Host","action":"Send_Answer","error_code":504,"error_response":"G
ateway Timeout"},
{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"error
_response":"Gateway Timeout"}]},"nextHopSEPP":
{"totalTransactionLifetime":"7s","responseTimeout":"4s","service":
```


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```
{"maxRoutingAttempts":2},"serviceEndpoint":
{"maxRoutingAttempts":1},"reRouteConditionList":[{"statusCode":"307"},
{"statusCode":"308"},{"statusCode":"429"},{"statusCode":"5xx"},{"statusCode":
"timeout"}, {"statusCode": "connectionError"}],"exceptions":
[{"name":"Destination_Exhausted","action":"Send_Answer","error_code":504,"erro
r_response":"Gateway
Timeout"}]},"assignPreferredLocality":false,"overridePreferredLocality":false,
"forwardRevisedPreferredLocality":false}}'


 400 Bad Request

{
  "title": "Bad Request",
  "status": 400,
  "detail": "ConfigName in request Body does not match with ConfigName
provided in API. Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/routing-config-set/config1123",
  "cause": "INVALID_KEY_COMBINATION"
}
```

DELETE

This resource removes the routing config set configuration for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/routing-config-set/{routingConfigSetName}`

Table 2-27 URI Query Parameters Supported by the DELETE Method on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
routingOptionsConfigName	String	O	The name of the routing options configuration which should be removed.

Table 2-28 Data Structures Supported by the Delete Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
NA	M	1	204 No Content	Successful deletion of routing config set records.
ProblemDetails	M	1	403 Forbidden	Indicates problem details.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

Sample Successful Response of Routing Config Set Configurations for DELETE:

```
curl -v -H "Content-Type: application/json" --request DELETE http://
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set/defaultConfig


204 No Content
```


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Sample Fail Response of Routing Config Set Configurations for DELETE:

```
curl -v -H "Content-Type: application/json" -X DELETE http://localhost:8081/
ocscp/scpc-configuration/v1/routing-config-set/
notification_req_default_config_set


403 Forbidden
{"title":"Forbidden","status":403,"detail":"The default configuration cannot
be deleted. Please refer to the User Guide.","instance":"/ocscp/scpc-
configuration/v1/routing-config-set/
notification_req_default_config_set","cause":"DATA_CANT_DELETED"}
```

Sample Fail Response 2 of Routing Config Set Configurations for DELETE:

```
curl -v -H "Content-Type: application/json" --request DELETE http://
localhost:8081/ocscp/scpc-configuration/v1/routing-config-set/config1


404 Not Found

{"title":"Not Found","status":404,"detail":"RoutingConfigSet data not found
against given RoutingConfigSetName . Please refer to the User
Guide.","instance":"/ocscp/scpc-configuration/v1/routing-config-set/
config1","cause":"DATA_NOT_FOUND"}
```

Data Model

Request or Response Body (PUT)

The following table describes the field names of the routingConfigSetWrapperV2 data type.

Table 2-29 routingConfigSetWrapperV2

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Values	Allowed Values	Description
routingConfigSetName	String	M	-	-	Unique name that identifies the routing config set. This rule name is used in `RoutingOptionsConfig` as a reference.
routingOptionsroutingConfigSetWrapperV2	JSON	M	-	-	This field defines the routing option configurations.
createdTimestamp	String	Read Only	-	-	Timestamp of the created record. This is not required in the request, but it is present in the response.

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Table 2-29 (Cont.) routingConfigSetWrapperV2

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Values	Allowed Values	Description
updatedTimestamp	String	Read Only	-	-	Timestamp of the updated record. This is not required in the request, but it is present in the response.

The following table describes the `RoutingOptionsV2` parameters:

Table 2-30 Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
responseTimeout	M	1 second	100-10000 ms The supported values can be in 's' or 'ms'. Where, 's' is seconds and 'ms' is milliseconds.	Indicates the allotted time to respond to a message request. When the response timeout expires, SCP performs alternate rerouting to the available alternate NF or pod. If no alternate NFs or pods are available, SCP sends an error message. Data Type: string	Yes	Yes
totalTransactionLifetime	M	6 seconds	100 - 240000 ms	Indicates the total time allowed to forward a request, including the initial and all subsequent routing attempts. **Note**: The totalTransactionLifetime value should be greater than the value obtained by multiplying responseTimeout by the total maximum number of attempts (pod level + service level). Data Type: string	Yes	Yes
pod	M	-	-	See Table 2-37. Data Type: PodLevelRoutingOptionsV2	-	-
service	M	-	-	See Table 2-38. Data Type: ServiceLevelRoutingOptionsV2	-	-

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
reRouteConditionList	O	-	301, 302, 303, 304, 307, 308, 400, 401, 403, 404, 405, 406, 407, 408, 409 , 410, 411, 412, 413, 414, 415, 416, 417, 421, 422, 425, 426, 428, 429, 431, 451, 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, 511, 5xx, "timeout", "connectionError".	• This parameter lists the HTTP status codes that SCP uses to attempt alternative routing. If the upstream server responds with any of these configured response codes, SCP will try rerouting based on the configured alternate routing mechanism. • If SCP encounters errors such as "ConnectionError" or "Timeout" while routing to the upstream server, and these errors are configured, SCP will attempt to reroute using the configured alternate routing mechanism. Example: `"reRouteConditionList": [ { "statusCode": "5xx" }, { "statusCode": "429" }, { "statusCode": "307" }, { "statusCode": "308" }, { "statusCode": "timeout" }, { "statusCode": "connectionError" } ]` Data Type: array(ProblemData)	No	Yes

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptionErrorResponses	O	-	This range is fixed, and you are not allowed to add any additional entries to the list. If you configure lesser than five entries, the missing entries will be automatically added, as shown in the default value column. If you attempt to enter more than five entries, the request will be rejected.	Destination Exhausted Action: The action taken when a request cannot be processed due to an internal resource being exhausted. Send an answer with the configured HTTP status code. For more information, see "HTTP Status Code and Applicability for Rerouting" in *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*. **Note:** You must configure `error_profile` under `exceptionErrorResponses` because `error_code` and `error_response` will be deprecated from the next release. Example: `{ "name": "Destination_Exhausted", "action": "Send_Answer", "error_code": 504, "error_response": "Gateway Timeout", "error_profile": "default_exception_error_destination_exhausted" }` Data Type: Array(ExceptionErrorResponse)	Yes	No

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptionErrorResponses	O	-	This range is fixed, and you are not allowed to add any additional entries to the list. If you configure lesser than five entries, the missing entries will be automatically added, as shown in the default value column. If you attempt to enter more than five entries, the request will be rejected.	No Producer Response Action: Action taken when the routing of a request is abandoned due to a response timeout. Send Answer with configured HTTP status code. For more information, see "HTTP Status Code and Applicability for Rerouting" in *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*. Example: `{ "name": "No_Response", "action": "Send_Answer", "error_code": 504, "error_response": "Gateway Timeout", "error_profile": "default_exception_error_no_response" }` Data Type: Array(ExceptionErrorResponse)	Yes	No

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptionErrorResponses	O	-	This range is fixed, and you are not allowed to add any additional entries to the list. If you configure lesser than five entries, the missing entries will be automatically added, as shown in the default value column. If you attempt to enter more than five entries, the request will be rejected.	Connection Failure Action: Action taken when the routing of a request is abandoned when the last egress connection selection fails Send Answer with configured HTTP status code. For more information, see "HTTP Status Code and Applicability for Rerouting" in *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*. Example: `{ "name": "Connect_Failure", "action": "Send_Answer", "error_code": 504, "error_response": "Gateway Timeout", "error_profile": "default_exception_error_connect_failure" }` Data Type: Array(ExceptionErrorResponse)	Yes	No

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptionErrorResponses	O	-	This range is fixed, and you are not allowed to add any additional entries to the list. If you configure lesser than five entries, the missing entries will be automatically added, as shown in the default value column. If you attempt to enter more than five entries, the request will be rejected.	Host not found Action: Action taken when the routing of a request is abandoned due to FQDN of the host not being found Send Answer with configured HTTP status code. For more information, see "HTTP Status Code and Applicability for Rerouting" in *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*. Example: `{ "name": "No_Host", "action": "Send_Answer", "error_code": 400, "error_response": "Bad Request", "error_profile": "default_exception_error_no_host" }` Data Type: Array(ExceptionErrorResponse)	Yes	No

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptionErrorResponses	O	-	This range is fixed, and you are not allowed to add any additional entries to the list. If you configure lesser than five entries, the missing entries will be automatically added, as shown in the default value column. If you attempt to enter more than five entries, the request will be rejected.	Insufficient Processing Time Action: The action taken when an SBI request received from a downstream consumer NF or SCP has already timed out, based on the received timestamp headers. Send Answer with configured HTTP status code. For more information, see "HTTP Status Code and Applicability for Rerouting" in *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*. Example: `{ "name": "Insufficient_Time", "action": "Send_Answer", "error_code": 504, "error_response": "Gateway Timeout", "error_profile": "timeHdrInsufficientTimeErrorProfile" }` Data Type: Array(ExceptionErrorResponse)	Yes	No
assignPreferredLocality	O	false	true, false	SCP assigns its own locality as a preferred locality for NF discovery if assignPreferredLocality is enabled and the 3gpp-Sbi-Discovery-preferredlocality header is absent in ingress service requests. Data Type: boolean	Yes	NA

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
overridePreferredLocality	O	false	true, false	SCP overrides the 3gpp-Sbi-Discoverypreferred-locality header received in the service request and uses its own locality as preferred-locality for NF discovery if overridePreferredLocality is enabled, and the 3gpp-Sbi-Discoverypreferred-locality header is present in ingress service requests. Data Type: boolean	Yes	NA
forwardRevisedPreferredLocality	O	false	true, false	Controls the forwarding of assigned or overridden values of 3gpp-Sbi-Discovery-preferred-locality headers to the next hop SCP. Data Type: boolean	Yes	NA
nextHopSCP	M	-	-	See Table 2-32 Data Type: NextHopSCPV2	-	-
nextHopSEPP	M	-	-	See Table 2-35 Data Type: NextHopSEPPV2	-	-

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Table 2-30 (Cont.) Parameters of RoutingOptionsV2

Parameter Name	Mandatory (M) or Optional(O)	Default Values	Value Range	Description and Data Type	Applicable to NF Service Level	Applicable to Pod Level within NF
alternateNFGroupRoutingOptions	M	NF_SET	NF_SET DNS_SRV NF_SET_FOLLOWED_BY_DNSSRV STATIC_CONFIG NF_SET_FOLLOWED_BY_STATIC_CONFIG	This parameter decides the alternate routing mode, depending on which scp-worker derives the alternate producer NF • Different modes are described as follows: – **NF_SET**: SCP performs alternate routing based on the Model C Indirect 5G SBI Communication format. This is the default mode. – **DNS_SRV**: SCP performs alternate routing based on the DNS SRV query. – **NF_SET_FOLLOWED_BY_DNSSRV**: SCP performs alternate routing based on NF Set and then with DNS SRV. – **STATIC_CONFIG**: SCP performs alternate routing based on the static configuration. – **NF_SET_FOLLOWED_BY_STATIC_CONFIG**: SCP performs alternate routing based on NF Set, and then using static configuration. Data Type: Enum(DNSSRVType)	Yes	No

Table 2-31 ExceptionErrorResponse

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
name	Name of the exception. Data Type: String	M	NA	NA	Yes	Yes
action	Indicates the action to be taken when the exception name is received. Data Type: String	M	Send_Answer	NA	Yes	Yes

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Table 2-31 (Cont.) ExceptionErrorResponse

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
error_code	Indicates the status code to use when creating a response for this exception name. Data Type: Integer	O	504	NA	Yes	Yes
error_response	Indicates the details to include in the response for this exception. Data Type: String	O	<empty string>	NA	Yes	Yes
error_profile	Indicates the name of the error profile referenced in ERROR_PROFILE_CONFIG. If provided, the response will be generated based on the parameters defined in the error profile. Data Type: String	O	NA	NA	Yes	Yes

Table 2-32 NextHopSCPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
service	See Table 2-33 Data Type: NextHopSCPServiceV2	M	-	-	Yes	Yes
serviceEndpoint	See Table 2-33 Data Type: NextHopSCPServiceEndpointV2	M	-	-	Yes	Yes
responseTimeout	Indicates the allotted time to respond to a message request. When the response timeout expires, the SCP either reroutes the request to an available alternate NF or pod, or sends an error message. Data Type: String	M	NA	100 ms to 50,000 ms (or 0.1 s to 50 s)	Yes	Yes

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Table 2-32 (Cont.) NextHopSCPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
reRouteConditionList	Indicates error conditions that prompt SCP to attempt alternate routing. If SCP encounters errors such as connectionError while routing to the upstream server, and if these errors are configured, SCP tries rerouting based on the configured alternate routing mechanism. Example: `"reRouteConditionList": [ { "statusCode": "connectionError" } ]` Data Type: String	O	-	"connectionError"	No	Yes
totalTransactionLifetime	Indicates that the time consumed in processing all retries should not exceed the total transaction lifetime. This refers to the total time allowed to forward a request, which includes the initial request and all subsequent routing attempts. Data Type: String	M	NA	100 ms to 240,000 ms (or 1 s to 240 s)	Yes	Yes

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Table 2-32 (Cont.) NextHopSCPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptions	Destination Exhausted Action: The action taken when a request cannot be processed due to an internal resource being exhausted.	O	504	Only one entry is allowed. • If you do not provide an entry, the default entry will be added. • If more than one entry is provided, it will be rejected.	Yes	-

Table 2-33 NextHopSCPServiceV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
maxRoutingAttempts	Indicates the number of reroute attempts (retries) at the service level. This is the maximum number of times the SCP is allowed to forward a request message. • If the **Max Routing Attempts** value is set to **1**, the **Total Transaction Lifetime** field value is not required. • If the **Max Routing Attempts** value is greater than **1**, the **Total Transaction Lifetime** value is considered during the rerouting process. Data Type: Integer	M	NA	1-5	Yes	Yes

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Table 2-34 NextHopSCPServiceEndpointV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
maxRoutingAttempts	Indicates the number of re-route attempts (retries) at the NF/Pod level. This is the maximum number of times the SCP is allowed to forward a request message at the NF/Pod level. • If the **Max Routing Attempts** value is set to **1** for both the Service and Pod level, the **Total Transaction Lifetime** field value is not needed. • If the **Max Routing Attempts** value (including both Service and Pod levels) is greater than **1**, the **Total Transaction Lifetime** value will be considered during the rerouting process. Data Type: Integer	M	NA	1-5	Yes	Yes

Table 2-35 NextHopSEPPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
responseTimeout	Indicates the allotted time to respond to a message request. When the response timeout expires, the SCP either reroutes the request to an available alternate NF or pod, or sends an error message. Data Type: String	M	NA	100 ms to 50,000 ms (or 0.1 s to 50 s)	Yes	Yes
totalTransactionLifetime	Indicates that the time consumed in processing all retries should not exceed the total transaction lifetime. This is the total time allowed to forward a request, including the initial request and all subsequent routing attempts. Data Type: String	M	NA	100 ms to 240,000 ms (or 1 s to 240 s)	Yes	Yes

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Table 2-35 (Cont.) NextHopSEPPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
reRouteConditionList	Indicates the HTTP response codes for which SCP will attempt alternate routing. If the upstream server responds with any of these configured response codes, SCP will reroute the request based on the configured alternate routing mechanism. If SCP encounters other errors such as connectionError or timeout while routing to the upstream server, and if these errors are configured, SCP tries rerouting based on the configured alternate routing mechanism. Example: `"reRouteConditionList": [ { "statusCode": "5xx" }, { "statusCode": "429" }, { "statusCode": "307" }, { "statusCode": "308` Data Type: Array(ProblemData)	O	-	301, 302, 303, 304, 307, 308, 400, 401, 403, 404, 405, 406, 407, 408, 409 , 410, 411, 412, 413, 414, 415, 416, 417, 421, 422, 425, 426, 428, 429, 431, 451, 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, 511, 5xx,"connectionError","timeout"	No	Yes

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Table 2-35 (Cont.) NextHopSEPPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptions	Destination Exhausted Action: The action taken when a request cannot be processed due to an internal resource being exhausted. Data Type: Array(ExceptionErrorResponse)	O	504	This range is fixed, and you are not allowed to add any further entries to this list. • If you configure fewer than two entries, the missing entry will be added automatically, as shown in the default value column. • If you attempt to enter more than two entries, the request will be rejected.	Yes	No

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Table 2-35 (Cont.) NextHopSEPPV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
exceptions	Host Not Found Action: The action taken when the routing of a request is abandoned due to the FQDN of the host not being found.	O	400	This range is fixed, and you are not allowed to add any further entries to this list. • If you configure fewer than two entries, the missing entry will be added automatically, as shown in the default value column. • If you attempt to enter more than two entries, the request will be rejected.	Yes	No

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Table 2-36 ProblemData

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
statusCode	Indicates the HTTP response codes for which SCP will attempt alternate routing. If the upstream server responds with any of these configured response codes, SCP will attempt to reroute the request based on the configured alternate routing mechanism. SCP will also attempt to reroute the request in the event of a response timeout, connection failure, refused stream, or when a GOAWAY frame is received on any connection. These events are not configurable and are supported by SCP by default. Example: `"reRouteConditionList": [ { "statusCode": "5xx" }, { "statusCode": "429" }, { "statusCode": "307" }, { "statusCode": "308" } ]` Data Type: String	O	-	301, 302, 303, 304, 307, 308, 400, 401, 403, 404, 405, 406, 407, 408, 409 , 410, 411, 412, 413, 414, 415, 416, 417, 421, 422, 425, 426, 428, 429, 431, 451, 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, 511, 5xx	Yes	Yes

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Table 2-37 PodLevelRoutingOptionsV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
maxRoutingAttempts	Indicates the number of re-route attempts (retries) at the NF/Pod level. This is the maximum number of times the SCP is allowed to forward a request message at the NF/Pod level. • If the **Max Routing Attempts** value is set to **1** for both the Service and Pod level, the **Total Transaction Lifetime** field value is not needed. • If the **Max Routing Attempts** value (including both Service and Pod levels) is greater than **1**, the **Total Transaction Lifetime** value will be considered during the rerouting process. Data Type: Integer	M	NA	1-5	Yes	Yes
alternateRouting	This parameter determines whether SCP will attempt alternate routing. Data Type: Boolean	M	true	true or false	-	-

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Table 2-38 ServiceLevelRoutingOptionsV2

Parameter Name	Description and Data Type	Mandatory (M)/ Optional (O)	Default Value	Value Range	Applicable to NF Service Level	Applicable to Pod Level within NF
maxRoutingAttempts	Indicates the number of re-route attempts (retries) at the NF/Pod level. This is the maximum number of times the SCP is allowed to forward a request message at the NF/Pod level. • If the **Max Routing Attempts** value is set to **1** for both the Service and Pod level, the **Total Transaction Lifetime** field value is not needed. • If the **Max Routing Attempts** value (including both Service and Pod levels) is greater than **1**, the **Total Transaction Lifetime** value will be considered during the rerouting process. Data Type: Integer	M	NA	1-5	Yes	Yes
alternateRouting	This parameter determines whether SCP will attempt alternate routing based on the configured alternate NF selection mechanism. Data Type: Boolean	M	true	true or false	-	-

2.4 Configuring NF Service Feature Config

This section describes the nfservice-config REST API to configure NF Service Feature Config for `NFType` and `serviceName` combinations. Each entry points to an NF Service Feature Config Set name, which is configured using the nfservice-config-set REST API.

Resources

The following table describes the resource name to retrieve, add, or remove nfservice-config configuration data:

Table 2-39 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
nfservice-config	/ocscp/scpc-configuration/{version}/nfservice-config	GET	Retrieves nfServiceConfig for given query parameters if the record exists. Retrieves all nfServiceConfig records if query parameter is not provided. Query parameters: nfType, serviceName, and configName.

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Table 2-39 (Cont.) Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
nfservice-config	/ocscp/scpc-configuration/{version}/nfservice-config/{configName}	GET	Retrieves nfServiceConfig for a given configName if the record exists.
nfservice-config	/ocscp/scpc-configuration/{version}/nfservice-config/{configName}	PUT	Creates mapping of NF type and NF service to nfServiceConfigSetName. Mapping to nfServiceConfigSetName is possible only if that record is available. Ensure that provided nfType and serviceName records are available. Update nfServiceConfig if record exists: • nfType and nfService can be updated, but its mapping should be available. • configName cannot be updated. • The serviceName '*' value is accepted to indicate any match. • The nfType '*' value is accepted to indicate any match. • The default record name cannot be updated.
nfservice-config	/ocscp/scpc-configuration/{version}/nfservice-config/{configName}	DELETE	Removes NF Services configurations for the given `configName`. The default record (defaultNfServiceConfig) cannot be removed.

Resource Definition

GET

This resource fetches all the `nfServiceConfig` configurations.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config`

The following table describes the data structures supported by the GET response body on this resource:

Table 2-40 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigWrapper	M	1..N	200 OK	Indicates successful retrieval of all `nfServiceConfigWrapper` objects.

This resource fetches the `nfServiceConfig` configuration based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config/{configName}`

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The following table describes the path parameter supported by this resource:

Table 2-41 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configuration information for `configName`.

The following table describes data structures supported by the GET response body on these resources:

Table 2-42 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigWrapper	M	1	200 OK	Indicates successful retrieval of all `nfServiceConfigWrapper` objects.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

Sample of a Successful GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
nfservice-config/config1' -H 'accept: application/json'
```

```
{
   "configName": "config1",
   "nfServiceConfig": {
          "nfType": "UDM",
          "nfServiceName": "nudm-uecm",
          "nfServiceConfigSetName": "udm_nudm_uecm_config1"
    }
   "createdTimestamp": "2024-04-24 14:50:56.0",
   "updatedTimestamp": "2024-04-24 14:50:56.0"
}
```

Sample of an Error GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
nfservice-config/config2' -H 'accept: application/json'
```

```
{
    "title": "Not Found",
    "status": 404,
    "detail": "NF Service Configuration data not found against given
configName. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config/c2342v",
    "cause": "DATA_NOT_FOUND"
}
```


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```
404 Error: Not Found
```

PUT

This resource configures nfservice-config for given data.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-43 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Key for PUT operation.

The following table describes the data structures supported by the PUT request body on this resource:

Table 2-44 Request Body Parameter

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigWrapper	M	1	200 OK	Indicates nfServiceConfigWrapper configurations to be added or modified.

The following table describes data structures supported by the PUT response body on these resources:

Table 2-45 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigWrapper	M	1	200 OK	Indicates successful update of nfServiceConfig configurations.
nfServiceConfigWrapper	M	1	201 Created	Indicates successful creation of nfServiceConfig configurations.
ProblemDetails	M	1	400 Bad Request	Indicates problem details.
ProblemDetails	M	1	403 Forbidden	Updates the default data results.

Sample of a Successful PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config/
config1' \
  -H 'accept: application/json' \
```


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```
  -H 'Content-Type: application/json' \
  -d '{
   "configName": "config1",
   "nfServiceConfig": {
          "nfType": "UDM",
          "nfServiceName": "nudm-uecm",
          "nfServiceConfigSetName": "udm_nudm_uecm_config1"
    }
}'
```

```
{
   "configName": "config1",
   "nfServiceConfig": {
          "nfType": "UDM",
          "nfServiceName": "nudm-uecm",
          "nfServiceConfigSetName": "udm_nudm_uecm_config1"
    },
   "createdTimestamp": "2024-04-24 14:50:56.0",
   "updatedTimestamp": "2024-04-24 14:50:56.0"
}
```

Sample of an Error PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config/
config2' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
   "configName": "config2",
   "nfServiceConfig": {
          "nfType": "UDM",
          "nfServiceName": "nudm-uecm",
          "nfServiceConfigSetName": "udm_nudm_uecm_config2"
    }
}'
```

```
{
    "title": "Bad Request",
    "status": 400,
    "detail": "NfServiceConfig should have unique combination of nfType and
nfServiceName. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config/c4",
    "cause": "MANDATORY_IE_INCORRECT"
}

400 Error: Bad Request
```

Sample 2 of an Error PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:30937/ocscp/scpc-configuration/v1/nfservice-config/
```


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```
defaultNfServiceConfig' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '  {
    "configName": "defaultNfServiceConfig",
    "nfServiceConfig": {
      "nfType": "UDM",
      "nfServiceName": "*",
      "nfServiceConfigSetName": "defaultNfServiceConfigSet"
    }
  }
'


{
    "title": "Forbidden",
    "status": 403,
    "detail": "The default configuration cannot be updated. Please refer to
the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config/
defaultNfServiceConfig",
    "cause": "MODIFICATION_NOT_ALLOWED"
}

403 Error: Forbidden
```

DELETE

This resource removes all the `nfservice-config` configurations based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-46 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Removes configurations based on combination of `configName`.

The following table describes the data structures supported by the DELETE response body on this resource:

Table 2-47 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
n/a	M	1	204 No Content	Removes the configuration of combination of `nfType` and `nfServiceName`.
ProblemDetails	M	1	404 Not Found	Indicates the problem details.

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Table 2-47 (Cont.) Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
ProblemDetails	M	1	403 Forbidden	Removes the default data results.

Sample of a Successful DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config/
config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json


204 No Content
```

Sample of an Error DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config/
config5' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "NF Service Configuration data not found against given
configName. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config/config5",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Data Model

The following table describes data model for request or response:

Table 2-48 nfServiceConfigWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Unique configName key to identify record. Number of characters is 256. Allowed character combinations should be alpha-numeric, hyphen, and underscore.

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Table 2-48 (Cont.) nfServiceConfigWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Description
nfServiceConfig	JSON	M	Provides configuration values of nfType, nfServiceName, and nfServiceConfigSetName.
createdTimestamp	String	Read Only	Timestamp of the created record. This is not required in the request, but it is present in the response.
updatedTimestamp	String	Read Only	Timestamp of the updated record. This is not required in the request, but it is present in the response.

The following table describes parameters of nfServiceConfig:

Table 2-49 nfServiceConfig Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
nfType	String	M	NA	Allowed character combinations should be alpha- numeric, hyphen, underscore, and *.	The NF type for which routing options are configured. This is either 3GPP defined NFType as per TS 29.510 or custom NFType. The '*' value is accepted to indicate any match. **Length:** 100
serviceName	String	M	NA	Allowed character combinations should be alpha- numeric, hyphen, underscore, and *.	The NF service name for which routing options are configured. This is either 3GPP defined serviceName as per TS29.510 or any custom service name. If a particular NFType does not have NF Service, the '*' keyword should be provided for serviceName. The '*' value is accepted to indicate any match. **Length:** 100
nfServiceConfigSetName	String	M	NA	Allowed character combinations should be alpha- numeric, hyphen, underscore, and blank.	Indicates configName records that are available.

Sample configuration of nfServiceConfig parameters:

```
{
    configName: "config1",
    nfServiceConfig{
        "nfType": "UDM",
        "nfServiceName": "nudm-uecm",
```


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```
            "nfServiceConfigSetName": "udm_nudm_uecm_config1"
        }
    }
```

2.5 Configuring NF Service Feature Config Set

This section describes the nfservice-config-set REST API parameters to configure service level features in `configName`. This configuration is mapped with an `NFType` and `serviceName` combination using the nfservice-config REST API as described in Configuring NF Service Feature Config.

Resources

The following table describes the resource name to retrieve, add, update, and remove nfservice config set configurations based on the query parameters:

Table 2-50 Resources

Resource Name	Resource URI	HTTP Method	Description
nfservice-config-set	/ocscp/scpc-configuration/{version}/nfservice-config-set	GET	Retrieves all stored NF services configuration records.
nfservice-config-set	/ocscp/scpc-configuration/{version}/nfservice-config-set/{configName}	GET	Get NF services configuration for given `configName`.
nfservice-config-set	/ocscp/scpc-configuration/{version}/nfservice-config-set/{configName}	PUT	Create new NF service config set. Update `nfServiceConfigSetData` if the record exists. `configName` cannot be updated. The default record (defaultNfServiceConfigSet) can be updated. New record cannot be created if rule mentioned in `cbRuleName`, `odRuleName`, `ociRuleName`, `canaryReleaseConfigName`, `nfServiceLoadBasedCongestionControlCfg` are not present in the respective tables.
nfservice-config-set	/ocscp/scpc-configuration/{version}/nfservice-config-set/{configName}	DELETE	Removes NF service configuration data for the given `configName`. Removal of information can proceed when no references of `configName` is present in the OCSCP_NF_SERVICE_CONFIG table.

Resource Definition

GET

This resource fetches all the nfservice-config-set configuration.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config-set`

The following table describes the data structures supported by the GET response body on this resource:

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Table 2-51 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigSetWrapper	M	1..N	200 OK	Indicates nfServiceConfigSet configuration.

This resource fetches the nfservice-config-set configuration based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config-set/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-52 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configuration information for `configName`.

The following table describes data structures supported by the GET response body on these resources:

Table 2-53 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigWrapper	M	1	200 OK	Indicates `nfServiceConfigSet` configurations.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

Sample of a Successful GET Response

```
curl -X 'GET' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
nfservice-config-set/udm_nudm_uecm_config1' \
  -H 'accept: application/json'
```

```
{
    "configName": "udm_nudm_uecm_config1",
    "nfServiceConfigSetData": {
      "defaultPriority": 1,
      "defaultCapacity": 65535,
      "altRoutingDnsSrvModeSupported": false,
      "loadBasedCongestionControlEnabled": true,
      "nfServiceLoadBasedCongestionControlCfg": "defaultRule",
      "cbEnabled": false,
```


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```
      "cbRuleName": "defaultRule",
      "odEnabled": false,
      "odRuleName": "defaultRule",
      "ociEnabled": false,
      "ociRuleName": "defaultOciConfigRule",
      "canaryReleaseEnabled": false,
      "canaryReleaseConfigName": "default",
      "nextHopSCP": {
        "loadBasedCongestionControlEnabled": true,
        "nfServiceLoadBasedCongestionControlCfg": "defaultRuleForNextHopScp"
      },
      "nextHopSEPP": {
        "loadBasedCongestionControlEnabled": true,
        "nfServiceLoadBasedCongestionControlCfg": "defaultRuleForNextHopSepp"
      }
    },

    "createdTimestamp": "2024-05-02 02:26:30.0",
    "updatedTimestamp": "2024-05-02 02:26:30.0"
  }
```


Sample of a Fail GET Response

```
curl -X 'GET' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
nfservice-config-set/udm_nudm_uecm_config108' \
  -H 'accept: application/json'
```


```
{
    "title": "Not Found",
    "status": 404,
    "detail": "NF Service Config Set Data not found against given configName.
Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config-set/
udm_nudm_uecm_config108",
    "cause": "DATA_NOT_FOUND"
}
```


```
404 Error: Not Found
```

PUT

This resource configures nfservice-config-set configuration for given data.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config-set/{configName}`

The following table describes the path parameter supported by this resource:

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Table 2-54 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Unique identifier of the records.

The following table describes the data structures supported by the PUT request body on this resource:

Table 2-55 Request Body Parameter

Data Type	Mandatory (M) or Optional (O)	Cardinality	Description
nfServiceConfigWrapper	M	1	Indicates nfServiceConfigWrapper configurations to be added or modified.

The following table describes data structures supported by the PUT response body on these resources:

Table 2-56 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
nfServiceConfigWrapper	M	1	200 OK	Indicates successful update or replacement of `nfServiceConfigSet` configurations for `configName`.
nfServiceConfigSetWrapper	M	1	201 Created	Indicates creation of `nfServiceConfigSet` configurations for `configName`.
ProblemDetails	M	1	400 Bad Request	Indicates problem details.

Sample of a Successful PUT Response

```
curl -X 'PUT' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
nfservice-config-set/udm_nudm_uecm_config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "udm_nudm_uecm_config1",
    "nfServiceConfigSetData": {
        "defaultPriority": "1",
        "defaultCapacity": "65535",
        "altRoutingDnsSrvModeSupported": false,
        "loadBasedCongestionControlEnabled": true,
        "nfServiceLoadBasedCongestionControlCfg": "r1",
        "cbEnabled": false,
        "cbRuleName": "defaultRule",
        "odEnabled": false,
```


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```
        "odRuleName": "defaultRule",
        "ociEnabled": false,
        "ociRuleName": "defaultOciConfigRule",
        "canaryReleaseEnabled": false,
        "canaryReleaseConfigName": "default",
        "nextHopSCP": {
          "loadBasedCongestionControlEnabled": true,
          "nfServiceLoadBasedCongestionControlCfg": "defaultRuleForNextHopScp"
        },
        "nextHopSEPP": {
          "loadBasedCongestionControlEnabled": true,
          "nfServiceLoadBasedCongestionControlCfg":
"defaultRuleForNextHopSepp"
        }
    }
}'


{
    "configName": "udm_nudm_uecm_config1",
    "nfServiceConfigSetData": {
        "defaultPriority": "1",
        "defaultCapacity": "65535",
        "altRoutingDnsSrvModeSupported": false,
        "loadBasedCongestionControlEnabled": true,
        "nfServiceLoadBasedCongestionControlCfg": "r1",
        "cbEnabled": false,
        "cbRuleName": "defaultRule",
        "odEnabled": false,
        "odRuleName": "defaultRule",
        "ociEnabled": false,
        "ociRuleName": "defaultOciConfigRule",
        "canaryReleaseEnabled": false,
        "canaryReleaseConfigName": "default",
        "nextHopSCP": {
          "loadBasedCongestionControlEnabled": true,
          "nfServiceLoadBasedCongestionControlCfg": "defaultRuleForNextHopScp"
        },
        "nextHopSEPP": {
          "loadBasedCongestionControlEnabled": true,
          "nfServiceLoadBasedCongestionControlCfg":
"defaultRuleForNextHopSepp"
        }
    },
    "createdTimestamp": "2024-04-24 14:50:56.0",
    "updatedTimestamp": "2024-04-24 14:50:56.0"
}
```

Sample of an Error PUT Response

```
curl -X 'PUT' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
nfservice-config-set/udm_nudm_uecm_config' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
```


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```
    "configName": "udm_nudm_uecm_config1",
    "nfServiceConfigSetData": {
        "defaultPriority": "1",
        "defaultCapacity": "70000",
        "altRoutingDnsSrvModeSupported": false,
        "loadBasedCongestionControlEnabled": true,
        "nfServiceLoadBasedCongestionControlCfg": "r1",
        "cbEnabled": false,
        "cbRuleName": "defaultRule",
        "odEnabled": false,
        "odRuleName": "defaultRule",
        "ociEnabled": false,
        "ociRuleName": "defaultOciConfigRule",
        "canaryReleaseEnabled": false,
        "canaryReleaseConfigName": "default",
        "nextHopSCP": {
          "loadBasedCongestionControlEnabled": true,
          "nfServiceLoadBasedCongestionControlCfg": "defaultRuleForNextHopScp"
        },
        "nextHopSEPP": {
          "loadBasedCongestionControlEnabled": true,
          "nfServiceLoadBasedCongestionControlCfg":
"defaultRuleForNextHopSepp"
        }
    }
}'


{
"title": "Bad Request",
"status": 400,
"detail": "Field defaultCapacity cannot be more than '65535'",
"instance": "/ocscp/scpc-configuration/v1/nfservice-config-set/
udm_nudm_uecm_config",
"cause": "INVALID_DATA"
}

400 Error: Bad Request
```

DELETE

This resource removes all the nfservice-config-set configuration based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/nfservice-config-set/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-57 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Removes configurations based on combination of `configName`.

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The following table describes the data structures supported by the DELETE response body on this resource:

Table 2-58 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
n/a	M	1	204 No Content	Removes the configuration of combination of `nfType` and `nfServiceName`.
ProblemDetails	M	1	404 Not Found	Indicates the problem details.
ProblemDetails	M	1	403 Forbidden	Indicates the error when trying to remove a record with a reference in the foreign table (OCSCP_NF_SERVICE_CONFIG) or the default record removal.

Sample of a Successful DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config-
set/udm_nudm_uecm_config108' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json'


204 No Content
```

Sample of an Error DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config-
set/udm_nudm_uecm_config108' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "NF Service Config Set Data not found against given configName.
Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config-set/
udm_nudm_uecm_config108",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Sample 2 of an Error DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nfservice-config-
set/c1' \
```


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```
  -H 'accept: application/json' \
  -H 'Content-Type: application/json'


{
    "title": "Forbidden",
    "status": 403,
    "detail": "The given configName is referred by 'NF Service Config' hence
cannot be deleted. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nfservice-config-set/c1",
    "cause": "DATA_CANT_DELETED"
}

403 Error: Forbidden
```

Data Model

The following table describes data model for request or response:

Table 2-59 nfServiceConfigSetWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Unique configName to identify the records of nfServiceConfigSet. Allowed character combinations should be alpha-numeric, hyphen, and underscore.
nfServiceConfigSetData	JSON	M	Indicates JSON structure to hold different NFService specific configurations.
createdTimestamp	String	Read Only	Timestamp of the created record. This is not required in the request, but it is present in the response.
updatedTimestamp	String	Read Only	Timestamp of the updated record. This is not required in the request, but it is present in the response.

The following table describes parameters of nfServiceConfigSetData:

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Table 2-60 nfServiceConfigSetData

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
defaultPriority	int	M	NA	0-65535	Priority (relative to other NF Services of the same type) in the range of 0-65535, to be used for NF Service selection. The lower values indicate a higher priority. If priority is present in either NF profile or nfServiceList parameters, those will have precedence over this value. This default priority value shall be used for NF service instance selection only if priority is not published by producer NFs while registering with NRF in NF profile (including both NF profile and nfServiceList parameters).
defaultCapacity	int	M	NA	0-65535	Capacity information in the range of 0-65535, expressed as a weight relative to other NF service instances of the same type. If capacity is also present in either NF profile or nfServiceList parameters, those will have precedence over this value. This default capacity value shall be used for NF service instance selection only if capacity is not published by producer NFs while registering with NRF in NF profile (including both NF profile and nfServiceList parameters).
altRoutingDnsSrvModeSupported	boolean	M	false	true or false	Indicates whether alternate routing is supported using DNS SRV.
loadBasedCongestionControlEnabled	boolean	M	true	true or false	Enables or disables congestion control for the associated service.
nfServiceLoadBasedCongestionControlCfg	String	O	NA	-	Name of the rule holding the configuration of congestion control. Based on the configuration under this rule, congestion control will be applied.
cbEnabled	boolean	M	false	true or false	Enables or disables circuit breaking for the associated service.
cbRuleName	String	O	NA	-	Name of the rule holding the configuration of circuit breaking. Based on the configuration under this rule, circuit breaking is activated.
odEnabled	boolean	M	false	true or false	Enables or disables the Outlier Detection feature.

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Table 2-60 (Cont.) nfServiceConfigSetData

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
odRuleName	String	O	NA	-	Name of the rule holding the configuration of Outlier Detection. Based on the configuration under this rule, the Outlier Detection is activated.
ociEnabled	boolean	M	false	true or false	Enables or disables OCI for the associated service.
ociRuleName	String	O	NA	-	Name of the rule holding the configuration of OCI. Based on the configuration under this rule, OCI is activated.
canaryReleaseEnabled	boolean	M	false	true or false	Enables or disables canary traffic for the associated service.
canaryReleaseConfigName	String	O	NA	-	Name of the rule holding the configuration of canary traffic. Based on the configuration under this rule, canary traffic routing is activated.
nextHopSCP	Json	M	NA	-	Service specific configuration to apply when routing to the next hop SCP.
nextHopSEPP	Json	M	NA	-	Service specific configuration to apply when routing to the next hop SEPP.

Table 2-61 nextHopSCP

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
loadBasedCongestionControlEnabled	boolean	M	true	true or false	Enables or disables congestion control for the associated service for the next hop SCP.
nfServiceLoadBasedCongestionControlCfg	String	O	NA	-	Name of rule holding the configuration of congestion control. Based on configuration under this Rule, congestion control will be applied for next hop SCP.

Table 2-62 nextHopSEPP

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
loadBasedCongestionControlEnabled	boolean	M	true	true or false	Enables or disables congestion control for the associated service for the next hop SEPP.

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Table 2-62 (Cont.) nextHopSEPP

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
nfServiceLoadBasedCongestionControlCfg	String	O	NA	-	Name of the rule holding the configuration of congestion control. Based on the configuration under this rule, congestion control is applied for the next hop SEPP.

2.6 Configuring NFTypes-NFServices

This section describes the NFTypes-NFServices REST API parameters configuration to add new 3GPP defined NFs, custom NF types, and custom NF services in SCP.

> **Note**
>
> - You must configure `NFType` and `NFService` parameters before configuring routing related parameters and feature level parameters.
> - `apiName`, `NFType`. and `NFService` values are not case-sensitive irrespective of the scenarios they are configured.
> - SCP stores `NFType` value in uppercase, `NFService` and `apiName` values in lowercase, irrespective of the scenarios they are configured.
> - `apiName` received in RX request is always case-insensitive.

Resources

The following table describes the resource name to retrieve, add, or update nftypes-nfservices configuration data:

Table 2-63 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
nftypes-nfservices	/ocscp/scpc-configuration/{version}/nftypes-nfservices	GET	• Retrieves NF types and NF services configurations for given query parameters. • Retrieves all NF types and NF services configurations if no query parameter is used. Query parameters are: `nfType`, `serviceName`, and `configName`.
nftypes-nfservices	/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}	GET	Retrieves NF type and NF service configuration for a given `configName`.

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Table 2-63 (Cont.) Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
nftypes-nfservices	/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}	PUT	• Creates new NF type and NF service configurations. Ensure that NF type and NF serviceName combination is unique. • Updates to NF type or NF service fields of an existing configuration are not allowed.
nftypes-nfservices	/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}	DELETE	• Removes NF type and NF service configurations for a given configName. • Removal of parameters can only be proceeded if no other table has a reference to NF_TYPE and SERVICE_NAME combination. • Configuration containing `nfType` as SCP cannot be removed.

Resource Definition

GET

This resource fetches the nftypes-nfservices configuration based on the query parameters.

Resource URI: `/ocscp/scpc-configuration/{version}/nftypes-nfservices`

The following table describes the data structures supported by the GET response body on this resource:

Table 2-64 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfServiceWrapper	M	1..N	200 OK	Indicates nftypes-nfservices configurations.

This resource fetches the nftypes-nfservices configuration based on the `configName` parameter.

Resource URI: `/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}`

The following table describes the path parameter supported by this resource:

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Table 2-65 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configuration information for `configName`.

The following table describes data structures supported by the GET response body on these resources:

Table 2-66 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfServiceWrapper	M	1	200 OK	Indicates nftypes-nfservices configurations.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

This resource fetches all the nftypes-nfservices configurations based on `configName`, `nfType`, and `serviceName` query parameters.

Resource URI: `/ocscp/scpc-configuration/{version}/nftypes-nfservices?configName={value}&nfType={value2}&serviceName={value3}`

The following table describes the query parameters:

Table 2-67 Query Parameters

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	O	• Provide any number of query parameters (maximum three). • The request fetches configuration that matches three query parameters.
nfType	String	O	
serviceName	String	O	

The following table describes data structures supported by the GET response body on these resources:

Table 2-68 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfServiceWrapper	M	1	200 OK	Indicates nftypes-nfservices configurations.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

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Sample of a Successful GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nftypes-
nfservices/config1' -H 'accept: application/json'


{
    "configName": "config1",
    "nfServiceData": {
        "nfType": "UDM",
        "serviceName": "nudm-uecm",
        "apiName": "apiName1",
        "serviceType": ["notification-message-service", "request-message-
service"]
    },
    "createdTimestamp": "2024-04-24 14:50:56.0",
    "updatedTimestamp": "2024-04-24 14:50:56.0"
}
```

Sample of an Error GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nftypes-
nfservices/config108' -H 'accept:
    application/json'


{
  "title": "Not Found",
  "status": "404",
  "detail": "NfTypes-NfServices data not found against given configName.
Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nftypes-nfservices/config108",
  "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Sample 2 of an Error GET Response

```
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nftypes-
nfservices?configName=config108' -H 'accept:
    application/json'


{
  "title": "Not Found",
  "status": "404",
  "detail": "NfTypes-NfServices data not found against given query
parameter(s). Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nftypes-nfservices/config108",
  "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```


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PUT

This resource configures nftypes-nfservices for given data.

Resource URI: `/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}`

The following table describes the data structures supported by the PUT response body on this resource:

Table 2-69 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfServiceWrapper	M	1	200 OK	Indicates nftypes-nfservices configurations to be added or modified.

This resource fetches the nftypes-nfservices configuration based on the `configName` parameter.

Resource URI: `/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-70 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Key for PUT operation.

The following table describes data structures supported by the PUT response body on these resources:

Table 2-71 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfServiceWrapper	M	1	201 Created	Indicates new nftypes-nfservices configuration creation.
NfServiceWrapper	M	1	200 OK	Updates the existing record.
ProblemDetails	M	1	400 Bad Request	Indicates problem details.
ProblemDetails	M	1	403 Forbidden	Updates the fields that cannot be modified.

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Sample of a Successful PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nftypes-nfservices/
config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config1",
    "nfServiceData": {
        "nfType": "UDM",
        "serviceName": "nudm-uecm",
        "apiName": "apiName1",
        "serviceType": [
            "notification-message-service",
            "request-message-service"
        ]
    }
}'


{
    "configName": "config1",
    "nfServiceData": {
        "nfType": "UDM",
        "serviceName": "nudm-uecm",
        "apiName": "apiName1",
        "serviceType": ["notification-message-service", "request-message-
service"]
    },
    "createdTimestamp": "2024-04-24 14:50:56.0",
    "updatedTimestamp": "2024-04-24 14:50:56.0"
}
```

Sample of an Error PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nftypes-nfservices/
config2' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config2",
    "nfServiceData": {
        "nfType": "UDM",
        "serviceName": "nudm-sdm",
        "apiName": "apiName1",
        "serviceType": [
            "notification-message-service",
            "request-message-service"
        ]
```


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```
    }
}'


{
    "title": "Bad Request",
    "status": 400,
    "detail": "ApiName is not unique. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nftypes-nfservices/config2",
    "cause": "MANDATORY_IE_INCORRECT"
}

400 Error: Bad Request
```

Sample 2 of an Error PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nftypes-nfservices/
config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config1",
    "nfServiceData": {
        "nfType": "nfT2",
        "serviceName": "nfsvc1",
        "apiName": "something",
        "serviceType": []
    },
    "createdTimestamp": "string",
    "updatedTimestamp": "string"
}'


{
    "title": "Forbidden",
    "status": 403,
    "detail": "NF Type and NF Service Name should not be modified for
existing configuration. Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nftypes-nfservices/config1",
    "cause": "MODIFICATION_NOT_ALLOWED"
}

403 Error: Forbidden
```

DELETE

This resource removes the nftypes-nfservices configuration based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/nftypes-nfservices/{configName}`

The following table describes the path parameter supported by this resource:

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Table 2-72 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Removes configurations based on configName.

The following table describes the data structures supported by the DELETE response body on this resource:

Table 2-73 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
None	-	1	204 No Content	In successful cases, only response code is returned.
ProblemDetails	M	1	404 Not Found	Indicates the problem details.

Sample of a Successful DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nftypes-nfservices/
config108' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json'


Response: 200 OK or 204 No
    Content
```

Sample of an Error DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/nftypes-nfservices/
config108' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "NfTypes-NfServices data not found against given configName.
Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/nftypes-nfservices/config108",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```


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Data Model

The following table describes data model for request or response:

Table 2-74 NfServiceWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Description
`configName`	String	M	Unique configuration name to identify the record. Number of characters is 256. Allowed character combinations should be alpha-numeric, hyphen, and underscore.
`nfServiceData`	JSON	M	Provides configuration values of `nfType`, `apiName`, `serviceName`, and `serviceType`.
`createdTimestamp`	String	Read Only	Timestamp of the created record. This is not required in the request, but it is present in the response.
`updatedTimestamp`	String	Read Only	Timestamp of the updated record. This is not required in the request, but it is present in the response.

The following table describes parameters of `nfServiceData`:

Table 2-75 nfServiceData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
`nfType`	String	M	NA	Allowed character combinations should be alpha-numeric, hyphen, and underscore.	The NF type for which routing options are configured. This is either 3GPP defined NFType as per TS 29.510 or custom NFType. **Length:** 100

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Table 2-75 (Cont.) nfServiceData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
serviceName	String	M	NA	Allowed character combinations should be alpha-numeric, hyphen, and underscore. "default" is not supported as a service name.	The NF service name for which routing options are configured. This is either 3GPP defined serviceName as per TS29.510 or any custom service name. For proxy network entities, such as SCP and SEPP, serviceName must be configured only with 'noservice' value. Apart from SCP and SEPP, if a particular NFType does not have NF Service, 'noservice' keyword should be provided for serviceName. **Note:** • "noservice" is a keyword used by SCP to indicate that the corresponding has no NFService. • If you have added an NFType with serviceName as "noservice", and want to add a new serviceName for the same NFType, follow these steps: 1. Remove the NFType, "noservice" entry. 2. Add NFType, <new serviceName> entry again. **Length:** 100
apiName	String	O	NA	Allowed character combinations should be alpha-numeric, hyphen, and underscore.	Ensure that the API name is unique across all records. In the absence of apiName, its value is automatically configured as serviceName. This must be configured if apiName and serviceName values are different. apiName must be defined if apiName to be used in API URI for this service API is different from serviceName published in NF Profile. When serviceName is set as 'noservice', apiName configuration is not allowed. **Length:** 256

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Table 2-75 (Cont.) nfServiceData Parameters

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
`serviceType`	Array(String)	M	`["notification-message-service", "request-message-service"]` Or `["notification-message-service"]`	["notification-message-service", "request-message-service"]	When this attribute is blank, `serviceType` is automatically configured for both notification-message-service and request-message-service. When `NFType` is SCP and SEPP, `serviceType` is configured for both notification-message-service and request-message-service. When `serviceName` is set to 'noservice', `serviceType` configuration is allowed to have only "notification-message-service" value for NF other than SCP and SEPP. When `serviceName` is set to 'noservice', and `serviceType` is blank, `serviceType` is automatically configured to notification-message-service only for NF other than SCP and SEPP.

2.7 Configuring Canary Release Config Set

The canary-release REST API inspects the version (API version) attribute of the NF Service profile published by the NFs during NF registration or update. It can identify the release as a canary version if the version matches the configured value. There are two versions of API, Production version (older version) and Canary version (newer version) of the service instance. SCP distributes traffic between the Production version and the Canary versions based on operator configuration.

The following sample REST messages provide the details about the operations and parameters for CanarayRelease Options. The default values of parameters related to CanaryRelease are mentioned in the following samples, however, you can modify these values. These parameters are applicable at the pod level.

Resources

The following table describes the resource name to retrieve, add, or update canary-release configuration data:

Table 2-76 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
canary-release	/ocscp/scpc-configuration/{version}/canary-release	GET	Retrieves all stored canary release configuration data.
canary-release	/ocscp/scpc-configuration/{version}/canary-release/{configName}	GET	Retrieves canary release configuration data for the given configName.

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Table 2-76 (Cont.) Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
canary-release	/ocscp/scpc-configuration/{version}/canary-release/{configName}	PUT	Creates new canary release config data. Updates canary release data if the record exists. `configName` cannot be updated. The default record (defaultCanaryConfigName) can be updated.
canary-release	/ocscp/scpc-configuration/{version}/canary-release/{configName}	DELETE	Removes canary release configuration data for the given configName. Cannot remove the records if it is used in the OCSCP_NF_SERVICE_CONFIG_SET table. The default record (defaultCanaryConfigName) cannot be deleted.

Resource Definition

GET

This resource fetches all the canary release configurations.

Resource URI: `/ocscp/scpc-configuration/{version}/canary-release`

The following table describes the data structures supported by the GET response body on this resource:

Table 2-77 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
canaryReleaseData	M	1..N	200 OK	Fetches all canary release data record.

This resource fetches the canary release configuration based on configName.

Resource URI: `/ocscp/scpc-configuration/{version}/canary-release/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-78 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configuration information for `configName`.

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The following table describes data structures supported by the GET response body on these resources:

Table 2-79 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
canaryReleaseData	M	1	200 OK	Indicates canaryReleaseData configurations.
ProblemDetails	M	1	404 Not Found	Indicates problem details.

Sample of a Successful GET Response

```
 curl -X 'GET' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
canary-release/config1' \
  -H 'accept: application/json'


{
    "configName": "config1",
    "canaryData": {
        "apiFullVersion": "2.0.0",
        "canaryTraffic": 5
    },
    "createdTimestamp": "2024-04-24 14:50:56.0",
    "updatedTimestamp": "2024-04-24 14:50:56.0"
}
```

Sample of an Error GET Response

```
curl -X 'GET' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
canary-release/config1' \
  -H 'accept: application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "Canary release data not found against given configName. Please
refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/canary-release/config1",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

PUT

This resource configures canary release configuration for given data.

Resource URI: `/ocscp/scpc-configuration/{version}/canary-release/{configName}`

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The following table describes the path parameter supported by this resource:

Table 2-80 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Unique identifier for the record `configName`.

The following table describes the data structures supported by the PUT request body on this resource:

Table 2-81 Request Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Description
canaryReleaseData	M	1	The canaryRelease data to be added or updated.

The following table describes data structures supported by the PUT response body on these resources:

Table 2-82 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
canaryReleaseData	M	1	200 OK	Indicates successful update of canary release configurations.
canaryReleaseData	M	1	201 Created	Indicates successful creation of canary release configurations.
ProblemDetails	M	1	400 Bad Request	Indicates the problem details.

Sample of a Successful PUT Response

```
curl -X 'PUT' \
  'http://10.75.224.103:30937/ocscp/scpc-configuration/v1/canary-release/
config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config1",
    "canaryData": {
        "apiFullVersion": "2.0.0",
        "canaryTraffic": 5
    }
}'


{
    "configName": "config1",
```


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```
    "canaryData": {
        "apiFullVersion": "2.0.0",
        "canaryTraffic": 5
    },
    "createdTimestamp": "2024-08-02 09:47:12",
    "updatedTimestamp": "2024-08-02 09:47:12"
}
```

Sample of an Error PUT Response

```
curl -X 'PUT' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
canary-release/config1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "configName": "config1",
    "canaryData": {
        "apiFullVersion": "adfasdfldksfa;sdfk;asdlfasdfljsadf",
        "canaryTraffic": 5
    }
}'


{
    "title": "Bad Request",
    "status": 400,
    "detail": "Field apiFullVersion format is incorrect. Please refer to the
user guide.",
    "instance": "/ocscp/scpc-configuration/v1/canary-release/config1",
    "cause": "INVALID_VALUE"
}

400 Error: Bad Request
```

DELETE

This resource removes all the canary release configuration based on `configName`.

Resource URI: `/ocscp/scpc-configuration/{version}/canary-release/{configName}`

The following table describes the path parameter supported by this resource:

Table 2-83 Path Parameter

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Removes configurations based on configName.

The following table describes the data structures supported by the DELETE response body on this resource:

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Table 2-84 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NA	M	1	204 No Content	Successful deletion of nfServiceConfigData.
ProblemDetails	M	1	404 Not Found	Indicates the problem details.
ProblemDetails	M	1	403 Forbidden	Indicates the problem details.

Sample of a Successful DELETE Response

```
curl -X 'DELETE' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
canary-release/config1' \
  -H 'accept: application/json'


204 No Content
```

Sample of an Error DELETE Response

```
curl -X 'DELETE' \ 'http://10.75.224.103:32265/ocscp/scpc-configuration/v1/
canary-release/config1' \
  -H 'accept: application/json'


{
    "title": "Not Found",
    "status": 404,
    "detail": "Canary release data not found against given configName. Please
refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/canary-release/config1",
    "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Sample 2 of an Error DELETE Response

```
curl -X 'DELETE' \
  'http://10.75.224.103:30937/ocscp/scpc-configuration/v1/canary-release/
defaultCanaryConfigName' \
  -H 'accept: application/json'


{
    "title": "Forbidden",
    "status": 403,
    "detail": "The default configuration cannot be deleted. Please refer to
the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/canary-release/
defaultCanaryConfigName",
    "cause": "DATA_CANT_DELETED"
```


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```
}

403 Error: Forbidden
```

Data Model

The following table describes data model for request or response:

Table 2-85 canaryReleaseData

Field Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Unique configName key to identify canary release configuration. Allowed character combinations should be alpha-numeric, hyphen, and underscore.
canaryData	JSON	M	JSON containing apiFullVersion of canaryTraffic.
createdTimestamp	String	Read Only	Timestamp of the created record. This is not required in the request, but it is present in the response.
updatedTimestamp	String	Read Only	Timestamp of the updated record. This is not required in the request, but it is present in the response.

The following table describes parameters of canaryData:

Table 2-86 canaryData

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Range	Description
apiFullVersion	String	M	NA	-	API version to redirect requests.
canaryTraffic	int	M	NA	0-100	Represents percentage of traffic to be routed.

2.8 Configuring NF Topology Groups

This section describes the configuration on Service Communication Proxy (SCP), which allows SCP to:

- determine the 5G topology from NRF and use it for creating the routing rules.
- stop determining the 5G topology information from NRF and utilize the user configured or updated NF profiles.

5G Topology Source Information

SCP uses this configuration to determine the 5G topology source, and to create the routing rules accordingly.

TopologySourceInfo

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Table 2-87 TopologySourceInfo

NF Type (M)	5G topology source (M)
• All 3gpp 5G defined NF types – As defined in TS29.510 section 6.1.6.3.3 String: NFType • Custom NF types	• NRF (default) – learning from NRF • LOCAL

Enumeration: TopologySource

Table 2-88 Enumeration: TopologySource

Enumeration Value	Description
"NRF"	SCP 5G Topology information source is NRF.
"LOCAL"	SCP 5G Topology information source is user configured and not from NRF. This status may result from an NF service failure and may trigger restoration procedures. For more information, see clause 6.2 of 3GPP 23.527 [27]. • Transition from NRF ==> LOCAL: Stop learning from NRF and use available, modified, or created information from SCP. • Transition from LOCAL ==> NRF: Start learning from NRF and create the routing rules accordingly. In this scenario statically configured NF rules may get deleted because their information is not available in NRF.

Table 2-89 Resources and Methods Overview

Resource Name	Resource URI	HTTP Method or Custom Operation	Request Body, Query Parameters	Response Status Code, Body	Description
topologysource	{apiroot}/ocscp/scpc-configuration/v1/topologysourceinfo	PUT	Body • TopologySource	200 OK	Create or update the topology source information for all the NF types.
topologysource	{apiroot}/ocscp/scpc-configuration/v1/topologysourceinfo	GET	Query Parameters • NFType		Read the topology source information for all the NF types.
NFtopologysource (individual NF types)	{apiroot}/ocscp/scpc-configuration/v1/topologysource/{NFType}	PUT	Body • TopologySource	200 OK	Create or update the topology source information for a specific NF type.

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Table 2-89 (Cont.) Resources and Methods Overview

Resource Name	Resource URI	HTTP Method or Custom Operation	Request Body, Query Parameters	Response Status Code, Body	Description
NFtopologysource (individual NF types)	{apiroot}/ocscp/scpc-configuration/v1/topologysource/{NFType}	GET	Query Parameters • NFType		Read the topology source information for a specific NF type.

5G NF Topology Information

This information is used for configuring 5G NF profiles for the NF whose source has been set to "Local". When the learning source is set to "Local", users can modify the 5G NF profile irrespective of whether they are learned from NRF, that is, source='NRF', or configured statically, that is, source='Local'.

> **Note**
>
> By setting the source to Local, the system does not delete already determined profiles.

Table 2-90 Parameters for NF Topology Groups

Resource Name	Resources and Methods Overview	HTTP Method or Custom Operation	Request Body, Query Parameters	Response Status Code, Body	Description
nf-instances (Store)	{apiRoot}/ocscp/scpc-configuration/v1/nf-instances/	GET	Query Parameters • NFType • ServiceName • NF instance Id • Max number of NF profiles For more information, see Query Parameters.	• 200, OK, SearchResult. For more information, see Table 2-92. • 400 Bad Request, ProblemDetails • 500 Internal server error, ProblemDetails	Read a collection of NF Instances.

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Table 2-90 (Cont.) Parameters for NF Topology Groups

Resource Name	Resources and Methods Overview	HTTP Method or Custom Operation	Request Body, Query Parameters	Response Status Code, Body	Description
nf-instances (Store)	{apiRoot}/ocscp/scpc-configuration/v1/nf-instances/	GET	Query Parameters • NFType (M) • array(ServiceName) (O)	• 200, OK, uriList, For more information, see Table 2-93. – The response body contains a "_links" object containing the URI of each NF in the SCP, or an empty object if there are no NFs to return in the query result, that is, because there are no learned or configured NFs in the SCP, or because there are no matching NFs of the type specified in the "nf-type" query parameter. • 400 Bad Request, ProblemDetails • 500 Internal server error,	Read a collection of NF Instance Id.

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Table 2-90 (Cont.) Parameters for NF Topology Groups

Resource Name	Resources and Methods Overview	HTTP Method or Custom Operation	Request Body, Query Parameters	Response Status Code, Body	Description
				ProblemDetails	
nf-instance (Document)	{apiRoot}/ocscp/scpc-configuration/v1/nf-instances/{nfInstanceID}	GET	Query Parameters • n/a Body • n/a	200 OK, NFProfile	Read the profile of a given NF Instance.
nf-instance (Document)	{apiRoot}/ocscp/scpc-configuration/v1/nf-instances/{nfInstanceID}	PUT	Body • NFProfile	200 OK, NFProfile 201 Created, NFProfile	Register or configure in SCP a new NF Instance, or replace the profile of an existing NF Instance, by providing an NF profile.
nf-instance (Document)	{apiRoot}/ocscp/scpc-configuration/v1/nf-instances/{nfInstanceID}	PATCH	Body • PatchDocument It contains the list of changes to be made to the profile of the NF Instance, according to the JSON PATCH format specified in IETF RFC 6902.	• 200 OK, NFProfile • 204, NO content	Modify the NF profile of an existing NF Instance.
nf-instance (Document)	{apiRoot}/ocscp/scpc-configuration/v1/nf-instances/{nfInstanceID}	DELETE	Query • n/a Body • n/a	• 204, NO content	Deregister or delete from SCP a given NF Instance.

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Query Parameters

Table 2-91 Query Parameters

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Applicability
nf-type	NFType	M	1	This IE shall contain the NF type of the NF Service Producer being queried.	NF type of the NF Instances whose status is requested to be monitored.
service-names	array(ServiceName)	O	1..N	If included, this IE contains an array of service names for which SCP is queried to provide the list of NF profiles. SCP returns the NF profiles that have at least one NF service matching the NF service names in this list. If not included, the NRF returns all the NF service names registered in the NF profile.	Service name offered by the NF Instances whose status is requested to be monitored. This parameter is optional but if provided it returns with NF profile information.
nf-instance-id	NfInstanceId	O	0..1	Identity of the NF instance being queried.	NF Instance ID of the NF Instance whose status is requested to be monitored.
limit	integer	O	0..1	Maximum number of NFProfiles to be returned in the response.	Query-Params-Ext1.

SearchResult

Table 2-92 SearchResult

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
nfInstances	array(NFProfile)	M	1..N	It contains an array of NF Instance profiles, matching the search criteria indicated by the query parameters of the query request. An empty array means there is no NF instance that can match the search criteria.

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uriList

Table 2-93 uriList

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
_links	map(LinksValueSchema)	O	1..N	For the description of the members, see clause 4.9.4 of 3GPP TS 29.501.

Configuring NFProfile

Following are the minimum information required by SCP for statically configuring the NFProfile.

> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

Table 2-94 Configuring NFProfile

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
nfInstanceId	String	M	1	Identity of the NF instance being queried.
nfType	NFType	M	1	This IE contains the NF type of the NF Service Producer being queried.
nfStatus	NFStatus	M	1	This contains the NF status of NF Service Producer.
nsiList	array(String)	O	0..N	Returned when SMF is provided as the NFType.
fqdn	String	O	0..1	FQDN of the NF.
plmnlist	array(PlmnId)	O	1..N	PLMN(s) of the Network Function: This IE shall be present if the information is available for the NF. For a Self SCP, it represents the list of PLMNs served by the SCP.
interPlmnFqdn	String	O	0..1	If the NF needs to be discovered by other NFs in a different PLMN, then an FQDN that is used for inter-PLMN routing.
ipv4Addresses	array(String)	O	0..N	IPv4 addresses of the NF.
priority	Integer	O	0..1	Priority (relative to other NFs of the same type) in the range of 0-65535, to be used for NF selection; lower values indicate a higher priority.
locality	String	O	0..1	Operator defined information about the location of the NF instance. **Note**: This value is case-sensitive.

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Table 2-94 (Cont.) Configuring NFProfile

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
udmInfo	UDMInfo	O	0..1	Specific data for the UDM (ranges of SUPI, group ID…).
ausfInfo	AUSFInfo	O	0..1	Specific data for the AUSF (ranges of SUPI, group ID…).
amfInfo	AMFInfo	O	0..1	Specific data for the AMF (AMF Set ID, …).
smfInfo	SMFInfo	O	0..1	Specific data for the SMF (DNN's, …).
pcfInfo	PCFInfo	O	0..1	Specific data for PCF.
chfInfo	CHFInfo	O	0..1	Specific data for CHF.
nfServices	array(NF Service)	O	0..N	List of NF Service Instances. It includes the services produced by the NF that can be discovered by other NFs, if any.
nrfRegionOrSetId	String	O	0..1	If not provided, it is taken as "default". It must lie under supportedNRFRegionOrSetIdList of SCP profile, otherwise the Profile is rejected. If supportedNRFRegionOrSetIdList of SCP profile is not provided, it must be left empty. If supportedNRFRegionOrSetIdList of SCP profile is provided, then it must be set to any one of the configured nrfRegionOrSetId. It is the SetId of NRF to which the profile belongs to. **Note**: nrfRegionOrSetId is an SCP introduced parameter and used only for NRF profiles or Statically configured profiles.
nfSetIdList	List	O	0..N	Set ID to which NF belongs to.
capacity	Integer	O	0..1	Static capacity information in the range of 0-65535, expressed as a weight relative to other services of the same type.
load	Integer	O	0..1	Dynamic load information, ranged from 0 to 100, indicates the current load percentage of the NF service.
servingScope	String	O	0..1	An SCP parameter that is used only for NRF profiles or statically configured profiles. If it is not provided, it is considered as "default". It must remain under servingScope of SCP, otherwise the profile is rejected. If servingScope of SCP is not provided, then it must be left blank. If servingScope of SCP is provided, it must be set to any one of the configured servingScope.
customInfo	String	O	0..1	Provides custom information for an NF. It is applicable only for SCP or CUSTOM_ORACLE_SCP NF types.

Configuring UDMInfo

Following are the minimum information required by SCP for statically configuring UDMInfo.

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> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

Table 2-95 Configuring UDMInfo

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
supiRanges	array(SupiRange)	O	0..N	List of SUPI ranges whose profile data is available in the UDM instance.
gpsiRanges	arrray(IdentityRange)	O	0..N	List of GPSI ranges whose profile data is available in the UDM instance.

Configuring AUSFInfo

Following are the minimum information required by SCP for statically configuring AUSFInfo.

> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

Table 2-96 Configuring AUSFInfo

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
supiRanges	array(SupiRange)	O	1..N	List of SUPI ranges that can be served by the AUSF instance. If not provided, the AUSF can serve any SUPI.
routingIndicators	array(String)	O	0..N	List of Routing Indicator information that allows to route network signaling with SUCI (see 23.003 [12]) to the AUSF instance. If not provided, the AUSF can serve any Routing Indicator.
GroupId	String	O	0..1	Identifier of the AUSF group. If not provided, the AUSF instance does not pertain to any AUSF group.

Configuring AMFInfo

Following are the minimum information required by SCP for statically configuring AMFInfo.

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> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

Table 2-97 Configuring AMFInfo

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
guamiList	array(Guami)	M	1..N	List of supported GUAMIs.

Configuring SMFInfo

Following are the minimum information required by SCP for statically configuring SMFInfo.

> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

Table 2-98 Configuring SMFInfo

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
sNssaiSmfInfoList	array(SnssaiSmfInfoItem)	M	1..N	List of parameters supported by the SMF per S-NSSAI.
pgwFqdn	String	O	0..1	The FQDN of the PGW if the SMF is a combined SMF/PGW-C.
accessType	array(AccessType)	O	0..N	If included, this IE shall contain the access type (3GPP_ACCESS and/or NON_3GPP_ACCESS) supported by the SMF. If not included, it is assumed the both access types are supported.

Configuring PCFInfo

Following are the minimum information required by SCP for statically configuring PCFInfo.

> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

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Table 2-99 Configuring PCFInfo

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
supiRanges	array(SupiRange)	O	1..N	List of ranges of SUPIs that can be served by the PCF instance. If not provided, the PCF can serve any SUPI.

Configuring CHFInfo

Following are the minimum information required by SCP for statically configuring CHFInfo.

> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

Table 2-100 Configuring CHFInfo

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
supiRangeList	array(SupiRange)	O	1..N	List of SUPI ranges that can be served by the CHF instance. If not provided, the CHF can serve any SUPI.
gpsiRangeList	arrray(IdentityRange)	O	0..N	List of GPSI ranges that can be served by the CHF instance. If not provided, the CHF can serve any GPSI.

Configuring NFService

Following are the minimum information required by SCP for statically configuring NFService.

> **Note**
>
> The parameters mentioned in the following table are according to the 3GPP TS 29.510 specification and SCP uses only these parameters.

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Table 2-101 Configuring NFService

Attribute name	Data type	Mandatory (M) or Optional(O)	Cardinality	Description
serviceInstanceId	String	M	1	Unique ID of the service instance within a given NF Instance.
serviceName	Service Name	M	1	Name of the service instance, that is, "udm-sdm".
nfServiceStatus	NFServiceStatus	M	1	Status of the NF Service Instance.
versions	array(NF Service Version)	M	1..N	The API versions supported by the NF Service and if available, the corresponding retirement date of the NF Service.
scheme	UriScheme	M	1	URI scheme, for example, "http", "https". **Note**: Only HTTP is supported.
fqdn	String	O	0..1	FQDN of the NF Service Instance.
ipEndPoints	array(IpEndPoint)	O	0..N	IP addresses and port information of the Network Function, including IPv4 and IPv6 address, where the service is listening for incoming service requests. **Note**: IPV4 is supported.
apiPrefix	String	O	0..1	Optional path segments is used to construct the {apiRoot} variable of the different API URIs, as described in 3GPP 29.501 [5], clause 4.4.1.
priority	Integer	O	0..1	Priority, relative to other services of the same type, in the range of 0-65535 must be used for the NF service selection; lower values indicate a higher priority.
capacity	Integer	O	0..1	Static capacity information in the range of 0-65535, expressed as a weight relative to other services of the same type.
load	Integer	O	0..1	Dynamic load information, ranged from 0 to 100, indicates the current load percentage of the NF service.

The `CustomInfo` parameter is used only for nfType as "SCP" or "CUSTOM_ORACLE_SCP".

Table 2-102 CustomInfo

Attribute Name	Data Type	Range	Mandatory (M) or Optional(O)	Cardinality	Description
Release 16 Deployment					
mateScpInfoList	List	0-N	O	1	Indicates the list to provide information about mate SCPs.
mateScpInfoList.capacity	Integer	0-65535	O	1	Indicates the capacity of mate SCP.
mateScpInfoList.priority	Integer	0-65535	O	1	Indicates the priority of mate SCP.

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Table 2-102 (Cont.) CustomInfo

Attribute Name	Data Type	Range	Mandatory (M) or Optional(O)	Cardinality	Description
mateScpInfoList.scpFqdn	String	NA	O	1	Indicates the FQDN of mate SCP.
mateScpInfoList.scpInstanceId	String	NA	O	1	Indicates the NFInstanceId of mate SCP.
mateScpInfoList.mateSCPLocalities	List(String)	NA	O	0..N	Indicates the list of Localities served by mate SCP.

> **Note**
>
> Only for self SCP, you can modify CustomInfo using this REST API. You can add, modify, and remove mate SCP information for self SCP.

2.9 Configuring System Options

These options are used to control system behavior per service. You can configure System Options by using GET and PUT operations.

> **Note**
>
> - The default System Option values are provided during the installation of SCP through Helm.
> - The same functionality is achieved using the `OutlierDetection` (URI: `/ocscp/scpc-configuration/{version}/outlier-detection`) API to the `nextHopScpODRule` rule assigned to `odScpRuleName`.

REST Message Sample

Request_Type: **GET and PUT**

URI: `http://<SCP configuration FQDN/External IP>:8081//ocscp/scpc-configuration/v1/systemoptions`

```
{
  "odEnabled": true,
  "odScpRuleName": "nextHopScpODRule",
  "odSeppEnabled": false,
  "odSeppRuleName": "defaultRule",
  "cbScpEnabled": false,
  "cbScpRuleName": "defaultRule",
  "cbSeppEnabled": false,
  "cbSeppRuleName": "defaultRule",
  "viaHeaderCheckEnabled": true,
  "interPlmnFqdnValidationEnabled": false,
```


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```
  "forwardNfDiscoveryHeaders": true,
  "trafficPolicy": {
    "connectionPool": {
      "http": {
        "idleTimeout": "600s"
      },
      "https": {
        "idleTimeout": "600s"
      },
       "tcp": {
        "connectTimeout": "250ms",
        "tcpKeepalive": {
          "enable": true,
          "probes": 9,
          "time": "180s",
          "interval": "1s"
        }
      }
    }
  },
  "ttl": "900s",
  "dnsQueryTimeout": "5000ms"
}
```

The following table describes System Options parameters.

Table 2-103 Configuring Parameters for System Options

Parameter	Value	Description
odEnabled	Boolean	Provides information whether the Outlier Detection feature is enabled. The default value is false. For more information, see Outlier Detection Configuration.
odScpRuleName	String	Indicates the name of the rule holding the configuration of outlier detection for next Hop SCP. The Outlier Detection feature for next Hop SCP works based on configuration under this rule. For more information, see Outlier Detection Configuration.
odSeppEnabled	Boolean	Enables or disables the Outlier Detection feature for the next Hop SEPP. For more information, see Outlier Detection Configuration.
odSeppRuleName	String	Indicates the name of the rule holding the configuration of outlier detection for next Hop SEPP. The Outlier Detection feature for next Hop SEPP works based on configuration under this rule. For more information, see Outlier Detection Configuration.
cbScpEnabled	Boolean	Enables or disables circuit breaking for next Hop SCP. The default value is false. For more information, see Circuit Breaking Configurations.

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Table 2-103 (Cont.) Configuring Parameters for System Options

Parameter	Value	Description
cbScpRuleName	String	Name of the rule holding the configuration of outlier detection for next Hop SCP. Based on configuration under this rule, circuit breaking for next Hop SCP will work. The default value is "defaultRule" string. `{ "ruleName": "defaultRule", "data": { "v1": { "http2MaxRequests": 1000 } } }` For more information, see Circuit Breaking Configurations.
cbSeppEnabled	Boolean	Enables or disables circuit breaking for next Hop SEPP. The default value is false. For more information, see Circuit Breaking Configurations.
cbSeppRuleName	String	Name of the rule holding the configuration of circuit breaking for next Hop SEPP. Based on configuration under this Rule, circuit breaking for next Hop SEPP will work. The default value is "defaultRule" string.`{ "ruleName": "defaultRule", "data": { "v1": { "http2MaxRequests": 1000 } } }` For more information, see Circuit Breaking Configurations.
forwardNfDiscoveryHeaders	Boolean	Enables or disables the forwarding of discovery headers to next hop SCP. The default value is true.
trafficPolicy.connectionPool.http.idleTimeout	String	The idle timeout for upstream connection pool connections. The idle timeout is defined as the period in which there are no active requests. If not set, there is no idle timeout. When the idle timeout is reached the connection will be closed. Note that request based timeouts mean that HTTPS/2 PINGs will not keep the connection alive. The default value is 600s.
trafficPolicy.connectionPool.https.idleTimeout	String	The idle timeout for upstream connection pool connections is defined as the period in which there are no active requests. If not set, there is no idle timeout. When the idle timeout is reached, the connection will be closed. Note that request-based timeouts mean that HTTP/2 PINGs will not keep the connection alive. The default value is 600s.
trafficPolicy.connectionPool.tcp.connectTimeout	String	TCP Connection timeout. The valid time units are ns, us (or µs), ms, s. For example: 300ms.
trafficPolicy.connectionPool.tcp.tcpKeepalive	TcpKeepalive	Contains the TcpKeepalive information. If set, enables TCP Keepalives to upstream peer. All the parameters of tcpkeepAlive are required if this information is configured.
trafficPolicy.connectionPool.tcp.tcpKeepalive.enable	Boolean	Enables or disables tcp keepalive for upstream connections. The default value is true.

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Table 2-103 (Cont.) Configuring Parameters for System Options

Parameter	Value	Description
trafficPolicy.connectionPool.tcp.tcpKeepalive.probes	Integer	Maximum number of keepalive probes to send without response before deciding the connection is dead. For example: 9 The default value is 9, minimum value is 1, and maximum value is 16.
trafficPolicy.connectionPool.tcp.tcpKeepalive.time	String	The time duration a connection needs to be idle before keep-alive probes are sent. The valid time unit is second. For example: 180s The default value is 180 seconds, minimum value is 1 second, and maximum value is 7200 seconds.
trafficPolicy.connectionPool.tcp.tcpKeepalive.interval	String	The time duration between keep-alive probes. The valid time unit is seconds. For example: 1s The default value is 1 second, minimum value is 1 second, and maximum value is 120 seconds.
ttl	String	Indicates the duration in which the DNS record is valid. This is used by the DNS SRV feature to refresh the DNS SRV record. The range is between 30 to 86400 seconds.
dnsQueryTimeout	String	The maximum amount of time in milliseconds to wait for a response during a DNS SRV query. The range is between 30 to 86400 seconds.
viaHeaderCheckEnabled	boolean	The relevance of this parameter arises when the 3gpp-Sbi-Target-apiRoot value contains a PLMN ID that is local to the SCP. • If this parameter is enabled, the "via header" will be checked for the presence of SEPP. If SEPP is found, the SCP will consider the request as coming from a SEPP, and intra-PLMN routing to the alternate producer NF will be based on the interplmnFQDN. • If this parameter is disabled, the decision to use either the interplmnFQDN or the FQDN of the alternate producer NF for intra-PLMN routing will depend on the interPlmnFqdnValidationEnabled parameter. **Note**: The first routing attempt will always be based on the 3gpp-Sbi-Target-apiRoot, but the parameter's relevance is in selecting the alternate producer for intra-PLMN routing. The default value is true.

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Table 2-103 (Cont.) Configuring Parameters for System Options

Parameter	Value	Description
interPlmnFqdnValidationEnabled	boolean	The relevance of this parameter arises when viaHeaderCheckEnabled is set to false or the viaHeader is not present in the incoming request, and the 3gpp-Sbi-Target-apiRoot value contains a PLMN ID that is local to the SCP. • If this parameter is enabled, SCP selects an alternate destination for intra-PLMN routing based on the interplmnFQDN if the first destination matches the interplmnFQDN of a known NF profile. If there is no match, then SCP selects the alternate destination based on the FQDN. This can occur in the following scenarios: – The first destination matches the FQDN instead of the interplmnFQDN of a known NF profile. – The first destination has no match with either the FQDN or the interplmnFQDN among the list of known profiles (catch-all routing for the first attempt). • If this parameter is disabled, SCP always selects the alternate destination for intra-PLMN routing based on the FQDN. **Note**: The first routing attempt will always be based on the 3gpp-Sbi-Target-apiRoot header, but the relevance of this parameter is in selecting the alternate producer for intra-PLMN routing. The default value is false.

2.10 Configuring Overload Configuration Information

This section provides information about overload control configuration parameters required for sending OCI to peers.

Resources

The following table describes the resource name to retrieve, add, or update overload control configuration data:

Table 2-104 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
oci-config	/ocscp/scpc-configuration/v1/oci-config	GET	Retrieves OCI config at SCP.
oci-config	/ocscp/scpc-configuration/v1/oci-config	PUT	Updates OCI config parameters.
oci-config	/ocscp/scpc-configuration/v1/oci-config	DELETE	Removes OCI config rule.

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Resource Definition

GET

This resource fetches the OCI Config details (OCIConfigWrapper) based on the query parameters.

If no query parameter is provided, all the SCP feature details are returned.

Resource URI: `/ocscp/scpc-configuration/v1/oci-config`

Response Body

Response body data model varies based on the REST operation status.

Table 2-105 Response Body Parameters

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
OCIConfigWrapper	M	1	200 OK	Indicates the list of OCI Config (OCIConfigWrapper) matching criteria.
ProblemDetails	M	1	404 NOT FOUND	Returns when data is not found for given query parameters.

This resource fetches the OCI Config details (OCIConfigWrapper) based on the ociConfigRule query parameter.

If no query parameter is provided, all the SCP feature details are returned.

Resource URI: `/ocscp/scpc-configuration/{version}/oci-config?ociConfigRule=defaultOciConfigRule`

Response Body

Response body data model varies based on the REST operation status.

Table 2-106 Response Body Parameters

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
OCIConfigWrapper	M	1	200 OK	Indicates the list of OCI Config (OCIConfigWrapper) matching criteria.
ProblemDetails	M	1	404 NOT FOUND	Returns when data is not found for given query parameters.

Example of a successful response:

```
curl -X GET "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/oci-config" -H "accept: application/json“


Code: 200
{
```


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```
    [
        {
            "ociConfigRule": "defaultOciConfigRule",
            "data":
            {
                "relayPeerOci": false,
                "ociEnforcement": true,
                "ociEnforcementAction": "REROUTE",
                "ociSendErrorProfile": "defaultErrorProfile",
                "interPlmnOciEnforcement": false,
                "ociTrafficRecoveryPolicy":
                {
                    "recoveryPolicy": "INCREMENTAL",
                    "stepInPercentage": 10,
                    "stepDurationInMs": 100
                },
                "ociEnforcementPolicy":
                {
                    "enforcementPolicy": "PERCENTAGE_WITH_PRIORITY",
                    "maxSbiMessagePriorityForOciEnforcement": 15
                }
            }
        }
    ]
}
```


Example of a failure response:

```
curl -X GET "http://10.75.214.171:30970/ocscp/scpc-configuration/v2/oci-
config" -H "accept: application/json“
```


```
{
    "title": "Not Found",
    "status": "404",
    "detail": "Oci_Config data not found against given query parameter(s).
Please refer to the User Guide.",
    "instance": "/ocscp/scpc-configuration/v1/oci-config?ociConfigRule=abc",
"cause": "DATA_NOT_FOUND"
}
```


PUT

This resource updates the OCI config using the request body.

Resource URI: `ocscp/scpc-configuration/v1/oci-config`

Table 2-107 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
OCIConfigWrapper	M	1	200 OK	Indicates the list of OCI Config (OCIConfigWrapper) matching criteria.

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Table 2-107 (Cont.) Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
ProblemDetails	M	1	400 BAD REQUEST	Returns error with problem details structure as defined in 3GPP TS 29.571 Section 5.2.4.1.

Example of a successful response:

```
curl -X PUT "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/oci-
config" -H "accept: application/json“


Code: 200
{
    [
        {
            "ociConfigRule": "defaultOciConfigRule",
            "data":
            {
                "relayPeerOci": false,
                "ociEnforcement": true,
                "ociEnforcementAction": "REROUTE",
                "ociSendErrorProfile": "defaultErrorProfile",
                "interPlmnOciEnforcement": false,
                "ociTrafficRecoveryPolicy":
                {
                    "recoveryPolicy": "INCREMENTAL",
                    "stepInPercentage": 10,
                    "stepDurationInMs": 100
                },
                "ociEnforcementPolicy":
                {
                    "enforcementPolicy": "PERCENTAGE_WITH_PRIORITY",
                    "maxSbiMessagePriorityForOciEnforcement": 15
                }
            }
        }
    ]
}
```

DELETE

This resource deletes the OCI config using the request body.

Resource URI: `ocscp/scpc-configuration/v1/oci-config`

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Table 2-108 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
OCIConfigWrapper	M	1	200 OK	Indicates the list of OCI Config (OCIConfigWrapper) matching criteria.
ProblemDetails	M	1	403 Forbidden	Returns when data is not found for given query parameters.

Example of a successful response:

Request:

```
curl -X 'DELETE'\  'http://10.75.225.82:30636/ocscp/scpc-configuration/v1/oci-config?ociConfigRule=defaultOciConfigRule'\  -H 'accept: application/json'
```

Response:

```
{
    "title": "Forbidden",
    "status": "403",
    "detail": "Given oci config rule is used in routing options hence cannot be deleted",
    "instance": "/ocscp/scpc-configuration/v1/oci-config?ociConfigRule=defaultOciConfigRule",
    "cause": "OPERATION_NOT_ALLOWED"
}
```

Data Model

Table 2-109 OCIConfigWrapper

Field Name	Data Type	Default Value	Description
relayPeerOci	Boolean	false	If this parameter is set to true, SCP forwards the OCI header received from downstream peer in the ingress messages to upstream peers with the egress messages. • Default value: false • Range: true, false
ociEnforcement	Boolean	true	Enables or disables overload corrective action on the OCI information received from peer. Overload corrective actions can send error responses or reroute based on ociEnforcementAction. • Default value: true • Range: true, false

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Table 2-109 (Cont.) OCIConfigWrapper

Field Name	Data Type	Default Value	Description
ociEnforcementAction	Enum	REROUTE	Decides OCI enforcement action, such as send error or reroute. SENDERROR: SCP immediately sends error responses without trying for alternate peers. REROUTE: SCP attempts to reroute to available alternate peers. If it is not able to reroute, SCP sends error responses back. • Default value: REROUTE • Range: SENDERROR and REROUTE
OciSendErrorProfile	String	defaultErrorProfile	In reference to the error response profile, SCP sends error responses because of overload correction action based on OCI. • Default value: defaultErrorProfile
interPlmnOciEnforcement	Boolean	false	Enables or disables OCI enforcement toward remote PLMN peers. • Default value: false • Range: true, false

Table 2-110 ociTrafficRecoveryPolicy

Field Name	Data Type	Default Value	Description
recoveryPolicy	Enum	INCREMENTAL	Decides the traffic recovery policy after OCI enforcement action. INCREMENTAL: Increments traffic in steps to 100% based on "stepInPercentage" and "stepDurationInMs" parameters. IMMEDIATE: Increments traffic to 100% immediately. • Default value: INCREMENTAL • Range: INCREMENTAL, IMMEDIATE
stepInPercentage	Integer	10	Defines the size of a step in percentage of reduced traffic when the INCREMENTAL policy is configured. • Default value: 10 • Range: 5 - 15
stepDurationInMs	Integer	100	Defines the duration of a step when the INCREMENTAL policy is configured. Traffic is incremented after this duration for every step during traffic recovery after OCI enforcement action. • Default value: 100 • Range: 50 - 10000

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Table 2-111 ociEnforcementPolicy

Field Name	Data Type	Default Value	Description
enforcementPolicy	Enum	PERCENTAGE WITHPRIORITY	Decides the traffic recovery policy toward a peer after OCI enforcement action. PERCENTAGE_WITH_PRIORITY: Enforces OCI action on percentage of messages as received in reduction metric if priority of message is greater than "maxSbiMessagePriorityForOciEnforcement". PERCENTAGE_ONLY: Enforces OCI action on percentage of messages as received in the reduction metric. • Default value: PERCENTAGE_WITH_PRIORITY • Range: PERCENTAGE_WITH_PRIORITY, PERCENTAGE_ONLY
maxSbiMessagePriorityForOciEnforcement	Integer	15	Defines maximum priority value below which OCI enforcement action will not be applied. • Default value: 15 • Range: 0 - 31

JSON Format

Current JSON Format:

```
[
    {
        "ociConfigRule": "defaultOciConfigRule",
        "data":
        {
            "relayPeerOci": false,
            "ociEnforcement": true,
            "ociEnforcementAction": "REROUTE",
            "ociSendErrorProfile": "defaultErrorProfile",
            "interPlmnOciEnforcement": false,
            "ociTrafficRecoveryPolicy":
            {
                "recoveryPolicy": "INCREMENTAL",
                "stepInPercentage": 10,
                "stepDurationInMs": 100
            },
            "ociEnforcementPolicy":
            {
                "enforcementPolicy": "PERCENTAGE_WITH_PRIORITY",
                "maxSbiMessagePriorityForOciEnforcement": 15
            }
        }
    }
]
```

Error Profile:

```
{
    "name":"ociErrorProfile",
    "errorProfile":
    {
```


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```
        "status":500,
        "cause":"NF_SERVICE_FAILOVER",
        "customCause":null,
        "title":"INTERNAL SERVER ERROR",
        "detail":"SCP is unable to route because peer NF overload as per
reported OCI",
        "retryAfter":0,
        "redirectURL":null
    }
}
```

2.11 Configuring Overload Configuration Information Threshold

This section provides information about overload control configurations required for the `OciThresholdConfig` threshold levels to generate self-Overload Control Information (OCI) by SCP.

Resources

The following table describes the resource name to retrieve, add, or update overload control configuration data:

Table 2-112 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
oci-threshold-config	/ocscp/scpc-configuration/v1/oci-threshold-config	GET	Retrieves all SCP OCI threshold config data configured at SCP.
oci-threshold-config	/ocscp/scpc-configuration/v1/oci-threshold-config	GET	Retrieves an SCP OCI threshold config data configured based on the threshold level at SCP when the threshold level is provided as query parameters. However, this query parameter is optional. If it is absent, then it retrieves all SCP OCI threshold config data configured at SCP.
oci-threshold-config	/ocscp/scpc-configuration/v1/oci-threshold-config	PUT	Adds or updates SCP OCI threshold config data at SCP.

Resource Definition

GET REST API

This resource fetches the SCP OCI threshold config data based on the query parameters.

If no query parameter is provided, all the SCP OCI threshold config data is returned.

Resource URI: `/ocscp/scpc-configuration/v1/oci-threshold-config`

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Table 2-113 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the names of supported threshold levels such as WARN, MINOR, MAJOR, and CRITICAL.

PUT REST API

This resource adds or updates the SCP OCI threshold config configuration using the request body.

Resource URI: `/ocscp/scpc-configuration/v1/oci-threshold-config`

Table 2-114 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
OciThresholdConfigWrapper	M	1	200 OK	Indicates the names of supported threshold levels such as WARN, MINOR, MAJOR, and CRITICAL.
ProblemDetails	M	1	400 BAD REQUEST	Returns error with problem details structure as defined in 3GPP TS 29.571 Section 5.2.4.1.

Table 2-115 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
thresholdLevel	String	M	1	Indicates all the custom threshold levels apart from WARN, MINOR, MAJOR, and CRITICAL.

> **Note**
>
> - The threshold level is a valid combination of query parameters.
> - Only custom threshold levels can be removed. The default levels such as WARN, MINOR, MAJOR, or CRITICAL, cannot be removed.

Table 2-116 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
None	-	1	200 OK	In successful cases, only response code is returned.

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Table 2-116 (Cont.) Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
ProblemDetails	M	1	404 NOT FOUND	When no matching entry is found.

Data Model

The following table describes the field names of the OciThresholdConfigWrapper data type:

Table 2-117 OciThresholdConfigWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
`thresholdLevel`	String	M	Indicates the supported threshold levels such as WARN, MINOR, MAJOR, and CRITICAL.
`OciThresholdConfig`	Object	M	Indicates the OciThresholdConfig data.

Table 2-118 OciThresholdConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Range	Description
`generateOciHeader`	Boolean	M	true, false	Controls the generation of self-OCI, which is created by SCP, for different threshold levels. If this parameter is set to true. The OCI header for self-overload is added to HTTP messages on load update for this OCI level. The default value is false.
`onSetThreshold`	Integer	M	2-100	Indicates the onset overload threshold value based on the CPU usage.
`abatementThreshold`	Integer	M	1-99	Indicates the abatement overload threshold value based on the CPU usage.
`overloadReductionMetric`	Integer	M	0-100%	Indicates the value of the Overload-Reduction-Metric attribute in the 3gpp-Sbi-Oci header that is configured at each overload level, for example, the percentage (%) of traffic that the consumer NF must reduce toward SCP.
`periodOfValidity`	Integer	M	5 - 3600 seconds	Indicates the value of the Period-of-Validity attribute in the 3gpp-Sbi-Oci header that is configured at each overload level.
`abatementTimeInMilliSeconds`	Integer	M	50 ms to 5000 ms	Indicates the abatement time for overload level change.

The following table provides the default values of the `OciThresholdConfig` parameter:

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Table 2-119 OciThresholdConfig

thresholdLevel	onsetThreshold	abatementThreshold	overloadReductionMetric	periodOfValidity	abatementTime
WARN	68	65	10	5 seconds	200 ms
MINOR	75	70	20	5 seconds	200 ms
MAJOR	80	78	30	5 seconds	200 ms
CRITICAL	86	82	40	5 seconds	200 ms

JSON format for SCP OCI threshold config

```
[
    {
        "thresholdLevel": "CRITICAL",
        "data":
        {
            "onSetThreshold": 86,
            "abatementThreshold": 82,
            "abatementTimeInMilliSeconds": 200,
            "generateOciHeader": false,
            "overloadReductionMetric": 40,
            "periodOfValidity": 5
        }
    },
    {
        "thresholdLevel": "MAJOR",
        "data":
        {
            "onSetThreshold": 80,
            "abatementThreshold": 78,
            "abatementTimeInMilliSeconds": 200,
            "generateOciHeader": false,
            "overloadReductionMetric": 30,
            "periodOfValidity": 5
        }
    },
    {
        "thresholdLevel": "MINOR",
        "data":
        {
            "onSetThreshold": 75,
            "abatementThreshold": 70,
            "abatementTimeInMilliSeconds": 200,
            "generateOciHeader": false,
            "overloadReductionMetric": 20,
            "periodOfValidity": 5
        }
    },
    {
        "thresholdLevel": "WARN",
        "data":
        {
```


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```
                "onSetThreshold": 68,
                "abatementThreshold": 65,
                "abatementTimeInMilliSeconds": 200,
                "generateOciHeader": false,
                "overloadReductionMetric": 10,
                "periodOfValidity": 5
            }
        }
]
```

2.12 Configuring NRF

This section provides information about configuration of NRF preferred by SCP for access token requests.

Resources

The following table describes the resource name to retrieve and update the NRF data based on the query parameters.

Table 2-120 Resource Name

Resource Name	Resource URI	HTTP Method	Description
nrf-configuration	/ocscp/scpc-configuration/v1/nrf-configuration	GET	Retrieves NRF configurations.
nrf-configuration	/ocscp/scpc-configuration/v1/nrf-configuration	PUT	Updates NRF configurations.

Data Model

Request Body

The following table describes the field names of the NrfConfigurationWrapper data model.

Table 2-121 NrfConfigurationWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Supported Values	Description
Service	String	M	"nnrf-oauth2"	"nnrf-oauth2", "nnrf-disc"	Indicates the service name of the preferred NRF configuration.
NrfConfigData	JSON	M	See Table 2-122		Configures preferred NRF. This parameter can be configured as nrfInstanceId or nrfSetId or both.

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Table 2-122 NrfConfigData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
nrfInstanceId	String	C	6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a	Indicates the NF Instance ID of the preferred NRF. **Note**: When only nfinstanceid is provided, then SCP forwards the route to the matching NRF with nfinstanceid.
nrfSetId	Array	C	setnrfl1.nrfset.5gc.mnc012.mcc345	The NF Set ID of the preferred NRF. Array(nrfSetid) uses the value from the first index even if multiple values are added. **Note**: When only nfSetId is provided, then SCP supports load balancing to the matching NRFs selected by nfSetId.

> **Note**
>
> If both nfinstanceid and nfSetId are provided, SCP forwards the route to the matching NRF with nfinstanceid; if it fails, then SCP does an alternate route to the NRFs selected by nfSetId.

Resource Definition

GET REST API

This resource fetches the NrfConfiguration data based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/nrf-configuration

Table 2-123 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
Service	String	O	Indicates the configuration name. If the parameter is empty, all configurations are returned.

Table 2-124 array(NrfConfigurationWrapper)

Field Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(NrfConfigurationWrapper)	M	1	200 OK	The list of NrfConfigurations available.

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Preferred NRF oauth2 GET SCP JSON example:

```
$ curl -X 'GET' 'http://10.75.212.36:30174/ocscp/scpc-configuration/v1/nrf-
configuration?service=nnrf-oauth2' -H 'accept:
    application/json'
```

```
{
  "service": "nnrf-oauth2",
  "nrfConfigData": {
    "nrfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a",
    "nrfSetId": [
      "setnrfl1.nrfset.5gc.mnc012.mcc345"
    ]
  }
}
```

Preferred NRF disc GET SCP JSON example:

```
$ curl -X 'GET' 'http://10.75.226.46:32224/ocscp/scpc-configuration/v1/nrf-
configuration?service=nnrf-disc' -H 'accept:
        application/json'
```

```
{
  "service": "nnrf-disc",
  "nrfConfigData": {
    "nrfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a",
    "nrfSetId": [
      "setnrfl1.nrfset.5gc.mnc012.mcc345"
    ]
  }
}
```

PUT REST API

This resource update the NrfConfiguration data using the request body.

Resource URI: /ocscp/scpc-configuration/v1/nrf-configuration

Table 2-125 Data Structures Supported by the PUT Response Body

Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
NrfConfiguration	M	1	200 OK	Indicates NrfConfiguration to be set.
ProblemDetails	M	1	400 BAD REQUEST	Returns when both the nfinstancid and nrfsetid are not present.

JSON Example of NRF Configuration for PUT

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Successful response for NRF oauth2:

```
$ curl -X 'PUT' 'http://10.75.212.36:30898/ocscp/scpc-configuration/v1/nrf-
configuration?service=nnrf-oauth2' -H 'accept: */*' -H 'Content-Type:
application/json' -d ' {"service": "nnrf-oauth2","nrfConfigData":
{"nrfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a","nrfSetId":
["setnrfl1.nrfset.5gc.mnc012.mcc345"]}}'


{
  "service": "nnrf-oauth2",
  "nrfConfigData": {
    "nrfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a",
    "nrfSetId": [
     "setnrfl1.nrfset.5gc.mnc012.mcc345"
    ]
  }
}
```

Successful response for NRF disk:

```
$ curl -X 'PUT' 'http://10.75.226.46:32224/ocscp/scpc-configuration/v1/nrf-
configuration?service=nnrf-disc' -H 'accept: */*' -H 'Content-Type:
application/json' -d


{
  "service": "nnrf-disc",
  "nrfConfigData": {
    "nrfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a",
    "nrfSetId": [
      "setnrfl1.nrfset.5gc.mnc012.mcc345"
    ]
  }
}'
```

Failure response:

```
$ curl -X 'PUT' 'http://10.75.212.36:30898/ocscp/scpc-configuration/v1/nrf-
configuration?service=nnrf-oauth2' -H 'accept: */*' -H 'Content-Type:
application/json' -d ' {"service": "nnrf-oauth2","nrfConfigData": { }}'


{
  "title": "Forbidden",
  "status": "403",
  "detail": "Minimum one value nfinstanceid or nfinstancesetid must present",
  "instance": "/ocscp/scpc-configuration/v1/nrf-configuration?service=nnrf-
oauth2",
  "cause": "INVALID_REQUEST_BODY"
}
```


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2.13 OAuth2.0 Configurations

This section provides information about NRF configurations and configuring access token granularity and requests for NF types or NF service instances.

2.13.1 Configuring OAuth2.0 Access Token Granularity

This section provides information about configurations required for access token granularity and access token requests for NFType, specific NF, or NF instance ID.

Resources

The following table describes the resource name to retrieve, add, and delete the access token granularity configurations data based on the query parameters.

Table 2-126 Resource Name

Resource Name	Resource URI	HTTP Method	Description
oauth2-authorization/access-token-granularity	/ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity	GET	Retrieves access token granularity configurations.
oauth2-authorization/access-token-granularity	/ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity	PUT	Adds an access token granularity configuration.
oauth2-authorization/access-token-granularity	/ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity	DELETE	Removes an access token granularity configuration.

Data Model

Request Body

The following table describes the field names of the accessTokenGranularityWrapper data model.

Table 2-127 accessTokenGranularityWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
ruleName	String	M	defaultNonRoaming	Indicates the unique string that works as an ID.
data	AccessTokenGranularityData	M	For more information, see Table 2-128	Indicates the specific data for each OAuth2 configuration type.

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> **Note**
>
> There are two default entries: one for non-roaming and another for roaming.

Table 2-128 AccessTokenGranularityData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
requesterPlmnIds	PLMN List	C	null	empty or plmn ids	Indicates the list of Local PLMNs IDs. **Note**: These can be present for NON_ROAMING traffic, but not mandatory to have it in this scenario.
targetPlmnIds	PLMN List	C	null	empty or plmn ids	Indicates the list of target PLMN IDs. **Note**: These can be present for `NON_ROAMING` traffic as well, but not mandatory to have it in this scenario.
trafficScenario	enum	M	NON-ROAMING	NON-ROAMING	Represents Local PLMN messages.
consumerNfTypes	Array	O	null	empty or Valid NF Type	Indicates the list of consumer NF types.
targetNfTypes	Array	M	*	* or Valid NF Types	Indicates the list of Target NF types.
targetServiceNames	Array	O	null	empty or valid service names	Indicates the list of Target service names.

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Table 2-128 (Cont.) AccessTokenGranularityData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
supportedAccessTokenGranularity	enum	M	NF-TYPE	NF-TYPE or NF-INSTANCE	This configuration is used when SCP initiates access token process. Based on this value, SCP determines whether to use NF-Type of NF-Instance based query. There possible values are: • NF-TYPE: NF: Represents target NF type based access token. • NF-INSTANCE: Represents target NF instance ID based access token. For example, `{ "ruleName": "defaultNonRoaming", "data": { "trafficScenario": "NON-ROAMING", "targetNfTypes": ["*"], "supportedAccessTokenGranularity": "NF-INSTANCE", "accessTokenReqInfo": { "localPlmn": { "intraScp": { "mandatory": ["grant_type", "nfInstanceId", "scope", "targetNfInstanceId"] }, "interScp": { "mandatory": ["grant_type", "nfInstanceId", "scope", "targetNfInstanceId"] } } } } }`

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Table 2-128 (Cont.) AccessTokenGranularityData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description

accessTokenReqInfo	accessTokenReqInfo Data	O	Structure of accessTokenReqInfo Data:
			
			"accessTokenReqInfo": {
			
			"localPlmn": {
			
			"intraScp": {
			
			"mandatory": ["grant_type","nfInstanceId", "scope","nfType","targetNfType"],
			
			"preferred": ["string1", "string2"] },
			
			"interScp": {
			
			"mandatory": ["grant_type","nfInstanceId", "scope", "nfType", "targetNfType","targetNfSetId"],
			
			"preferred": ["string1", "string2"] }
			},
				composite type	Access token request info configuration is used when SCP initiates access token process. SCP composes query parameters based on these mandatory and preferred parameters. Also, it provides separate section for intra-SCPand inter-SCP.
					The operator is expected to configure AccessTokenReqInfo" as per the allowed access token in the deployed network.
					• The Mandatory list defines the attributes that are required in an access token request so that NRF can issue the access token.
					• The preferred list defines the attributes that are expected to be used in access token requests based on their presence in 5G SBI requests from consumer NF; for example, if attributes are present, they are used in access token requests; otherwise, they are not.
					• The following lists the possible values for mandatory and preferred parameters: GRANT_TYPE("grant_type"), NF_INSTANCE_ID("nfInstanceId"), NF_TYPE("nfType"), TARGET_NF_TYPE("targetNfType"), SCOPE("scope"), TARGET_INSTANCE_ID("targetNfInstanceId"), REQUESTER_PLMN_LIST("requesterPlmnList"), REQUESTER_SNSSAI_LIST("requesterSnssaiList"), REQUESTER_FQDN("requesterFqdn"), REQUESTER_SNPN_LIST("requesterSnpnList"),

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Table 2-128 (Cont.) AccessTokenGranularityData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description

			"remotePlmn": {
			
			"intraScp": {
			
			"mandatory": ["grant_type","nfInstanceId", "scope","nfType","targetNfType"],
			
			"preferred": ["string1", "string2"]
			},
			}
			
			Default:
			
			"accessTokenReqInfo": {
			
			"localPlmn": {
			
			"intraScp": {
			
			"mandatory": ["grant_type","nfInstanceId", "scope","nfType","targetNfType"]
			},
			
			"interScp":
					TARGET_PLMN("targetPlmn"), TARGET_SNPN("targetSnpn"), TARGET_SNSSAI_LIST("targetSnssaiList"), TARGET_NSI_LIST("targetNsiList"), TARGET_SET_ID("targetNfSetId"), TARGET_NF_SERVICE_SET_ID("targetNfServiceSetId"), HMRF_ACCESS_TOKEN_URI("hnrfAccessTokenUri"), SOURCE_NF_INSTANCE_ID("sourceNfInstanceId")
					Note: Among all possible values, at least one must be included as mandatory parameter.

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Table 2-128 (Cont.) AccessTokenGranularityData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description

			{
			"mandatory":
			["grant_type","nfInstanceId",
			"scope","nfType","targetNfSetId",
			"targetNfSetId"],]
			}
			}
			}		

Response Body

The response body data model varies based on Rest operation status.

Table 2-129 Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(accessTokenGranularityWrapper)	M	1	200 OK	Indicates the list of oauth2 configurations (accessTokenGranularityWrapper) Matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when invalid combination or more than 3 query parameters are provided.

JSON Example of "accessTokenGranularityWrapper"

```
[
 {
   "ruleName": "defaultNonRoaming",
   "data": {
     "trafficScenario": "NON-ROAMING",
     "targetNfTypes": [
       "*"
     ],
     "supportedAccessTokenGranularity": "NF-TYPE",
     "accessTokenReqInfo": {
       "localPlmn": {
```


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```
          "intraScp": {
            "mandatory": ["grant_type","nfInstanceId",
"scope","nfType","targetNfType"]
          },
          "interScp": {
            "mandatory": ["grant_type","nfInstanceId",
"scope","nfType","targetNfSetId","targetNfSetId"]
          }
        }
      }
    }
  } ,
   {
    "ruleName": "Config1",
    "data": {
      "requesterPlmnIds": [{"mcc":"325","mnc":"13"}, { "mcc": "326","mnc":
"14"}],
      "targetPlmnIds": [{"mcc":"324","mnc":"12"}, { "mcc": "327","mnc": "15"}],
      "trafficScenario": "NON-ROAMING",
      "consumerNfTypes": ["PCF","UDM"],
      "targetNfTypes": ["PCF","UDM"],
      "targetServiceNames": ["nudm-uecm", "nudm-sdm"],
      "supportedAccessTokenGranularity": "NF-TYPE",
      "accessTokenReqInfo": {
        "localPlmn": {
          "intraScp": {
            "mandatory": ["grant_type","nfInstanceId",
"scope","nfType","targetNfType"],
            "preferred": ["requesterFqdn","targetPlmn"]
          },
          "interScp": {
            "mandatory": ["grant_type","nfInstanceId", "scope", "nfType",
"targetNfType","targetNfSetId"],
            "preferred": ["requesterFqdn","targetPlmn"]
          }
        }
      }
    }
  },
  {.....}
]
```

Resource Definition

GET REST API

This resource fetches the Oauth2 configuration (accessTokenGranularityWrapper) based on the query parameters.

If no query parameter is provided, all message priorities are returned.

Resource URI: /ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity

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Table 2-130 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	Indicates the configuration name. If the parameter is empty, all configurations are returned.

Table 2-131 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(accessTokenGranularityWrapper)	M	1	200 OK	Indicates the list of OAuth2 configurations (accessTokenGranularityWrapper) matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than three query parameters are provided.

Example

Successful response 1

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-
authorization/access-token-granularity" -H "accept: application/json"
```

Response Body:

```
[
 {
   "ruleName": "defaultNonRoaming",
   "data": {
     "trafficScenario": "NON-ROAMING",
     "targetNfTypes": [
       "*"
     ],
     "supportedAccessTokenGranularity": "NF-TYPE",
     "accessTokenReqInfo": {
       "localPlmn": {
         "intraScp": {
           "mandatory": ["grant_type","nfInstanceId",
"scope","nfType","targetNfType"]
         },
         "interScp": {
           "mandatory": ["grant_type","nfInstanceId", "scope","nfType",
"targetNfType","targetNfSetId"]
         }
       }
     }
   }
 } ,
  {
```


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```
   "ruleName": "Config1",
   "data": {
     "requesterPlmnIds": [{"mcc":"325","mnc":"13"}, { "mcc": "326","mnc":
"14"}],
     "targetPlmnIds": [{"mcc":"324","mnc":"12"}, { "mcc": "327","mnc": "15"}],
     "trafficScenario": "NON-ROAMING",
     "consumerNfTypes": ["PCF","UDM"],
     "targetNfTypes": ["PCF","UDM"],
     "targetServiceNames": ["nudm-uecm", "nudm-sdm"]
     "supportedAccessTokenGranularity": "NF-TYPE",
     "accessTokenReqInfo": {
       "localPlmn": {
         "intraScp": {
           "mandatory": ["grant_type","nfInstanceId",
"scope","nfType","targetNfType"],
           "preferred": ["string1","string2"]
         },
         "interScp": {
           "mandatory": ["grant_type","nfInstanceId", "scope", "nfType",
"targetNfType","targetNfSetId"],
           "preferred": ["string1","string2"]
         }
       }
     }
   }
 },
 {.....}
]
```

Successful response 2

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-
authorization/access-token-granularity?ruleName=defaultNonRoaming" -H
"accept: application/json"


[
  {
   "ruleName": "defaultNonRoaming",
   "data": {
     "trafficScenario": "NON-ROAMING",
     "targetNfTypes": [
       "*"
     ],
     "supportedAccessTokenGranularity": "NF-TYPE",
     "accessTokenReqInfo": {
       "localPlmn": {
         "intraScp": {
           "mandatory": ["grant_type","nfInstanceId",
"scope","nfType","targetNfType"]
         },
         "interScp": {
           "mandatory": ["grant_type","nfInstanceId", "scope","nfType",
"targetNfType","targetNfSetId"]
         }
```


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```
      }
    }
  }
 }
]
```

Failure response

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-
authorization/access-token-granularityruleName=ojhasflakhsdvg" -H "accept:
application/json"


{
  "title": "Not Found",
  "status": "404",
  "detail": "access Token Granularity configuration data not found against
given query parameter(s), Please refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/ruleName=ojhasflakhsdvg",
  "cause": "DATA_NOT_FOUND"
}
```

PUT REST API

This resource adds one Oauth 2 configuration (accessTokenGranularityWrapper) using the request body.

If no query parameter is provided, all message priorities are returned.

Resource URI: /ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity

Table 2-132 Data Structures Supported by the PUT Response Body

Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(accessTokenGranularityWrapper)	M	1	200 OK	Indicates the list of oauth2 configurations (accessTokenGranularityWrapper) matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails when an invalid combination or more than three query parameters are provided.

Example

Successful response`$ curl -X PUT "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity" -H "accept: application/json" -H "Content-Type: application/json" -d "{\"ruleName\":\"Config2\",\"data\":{\"trafficScenario \":\"NON-ROAMING\"},\"targetNfTypes\":\ ["PCF\"]},\"supportedAccessTokenGranularity\":"NFType\"}"`

```
{
    "ruleName": "Config2",
```


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```
    "data": {
      "trafficScenario ": "NON-ROAMING",
      "targetNfTypes": ["PCF"],
      "supportedAccessTokenGranularity": "NFType"
    }
 }

200 OK
```

Failure response$ `curl -X PUT "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity" -H "accept: application/json" -H "Content-Type: application/json" -d "{\"ruleName\":\"Config2\",\"data\":{\"targetNfTypes\":\["PCF\"]},\"supportedAccessTokenGranularity\":"NFType\"}"`

```
{
  "title": "Bad Request",
  "status": "400",
  "detail": "trafficScenario Object is missing, Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity",
  "cause": "MANDATORY_IE_MISSING"
}
```

DELETE REST API

This resource removes one Oauth 2 configuration (accessTokenGranularityWrapper) based on query parameters.

Resource URI: /ocscp/scpc-configuration/v1/oauth2-authorization/access-token-granularity

Table 2-133 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	O	1	Defines the name of the rule. The name of the rule must be unique.

Table 2-134 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None	-	-	204 OK	In a success case, only the response code is returned.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found.

Example

Successful response

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```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-
authorization/access-token-granularity?ruleName=Config2"-H "accept: application/
json"*/*"

204OK
```

Failure response

```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-
authorization/access-token-granularity?ruleName=Config222" -H "accept: */*"

{
  "title": "Not Found",
  "status": "404",
  "detail": "oauth2-authorization/access-token-granularity configuration data
not found for the given 'ruleName': Config222",
  "instance": "/ocscp/scpc-configuration/v1/oauth2-authorizationy/Config222",
  "cause": "DATA_NOT_FOUND"
}
```

2.13.2 Configuring OAuth2.0 Local PLMN Required

This section provides information about configurations required for local PLMN OAuth2.0.

Resources

The following table describes the resource name to retrieve, add, and remove the Oauth2 required configurations data based on the query parameters.

Table 2-135 Resource Name

Resource Name	Resource URI	HTTP Method	Description
oauth2-authorization/local-plmn-oauth2-required-config	/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config	GET	Retrieves the Oauth2 required configurations.
oauth2-authorization/local-plmn-oauth2-required-config	/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config	PUT	Adds and updates the Oauth2 required configuration.
oauth2-authorization/local-plmn-oauth2-required-config	/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config	DELETE	Removes one Oauth2 required configuration.

Data Model

Request Body

The following table describes the field names of the Oauth2RequiredWrapper data model.

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Table 2-136 Oauth2RequiredWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
ruleName	String	M	default	Indicates a unique string that works as an ID.
data	LocalNfOauth2RequiredData	M	See Table 2-137	Indicates the specific data for each OAuth2 configuration type.

Table 2-137 LocalNfOauth2RequiredData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
nfType	String	M	*	* or Valid NF type	Indicates the producer NF types for this configuration.
localPlmnIds	PLMN List	O	-	empty or Valid service Names	Indicates the list of Local PLMNs IDs of Producers. Following this pattern: `[{“mcc”:“234",“mnc”:“987"},{“mcc”:“123",“mnc”:“987"},{...}....]`
serviceNames	Array	O	-	empty or valid service names	Indicates the list valid services names of NF types.
nfInstanceIdsList	Array	O	-	empty or instance ids	Indicates the list of producer NF instances IDs.
nfServiceInstanceIdsList	Array	O	-	empty or service instance ids	Indicates the list of producer NF service IDs.
oauth2Required	Boolean	M	false	true or false	OAuth2Required indicates that OAuth2.0 based authorization is required: • If true, it means an access token is required at the selected target NF service instance and for service requests. • If false, then it means an access token is not required at the selected target NF service instance for service requests.

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Table 2-137 (Cont.) LocalNfOauth2RequiredData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
defaultScope	Oauth2DefaultScopeData	O	`{scopeSource: NFTYPE}`	`"SERVICE-SPECIFIC"/"NF-TYPE"/ "CUSTOM-SCOPE"`	Provides different scopes selection options which can be used in the access token process. **SERVICE-SPECIFIC**: The scope is selected from incoming service request. **NF-TYPE**: The scope is selected based on the configured NF type (all the services under this NF type will be the scope list). **CUSTOM-SCOPE**: Allows to explicitly configure the required NF services for scope.

Table 2-138 Oauth2DefaultScopeData Model

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
scopeSource	enum	M	NFTYPE	Indicates enum with three different values:`ScopeSource Enum { "SERVICE-SPECIFIC", "NF-TYPE", "CUSTOM-SCOPE";}`
scopelist	Array	C	-	List of of valid services, this is mandatory when `scopeSource` is CUSTOM-SCOPE and `SERVICE-SPECIFIC` and `NF-TYPE` are null.

Response Body

The response body data model varies based on REST operation status.

Table 2-139 Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(Oauth2RequiredWrapper)	M	1	200 OK	List of OAuth2 configurations (Oauth2RequiredWrapper) matching criteria.

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Table 2-139 (Cont.) Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than three query parameters are provided.

Example,

```
[
  {
    "ruleName": "default",
    "data": {
      "nfType": "*"
      "oauth2Required": false,
      "defaultScope": {
        "scopeSource": "NF-TYPE"
     }
    }
  },{
    "ruleName": "config1",
    "data": {
      "nfType": "AMF",
      "localPlmnIds": [{"mcc":"325","mnc":"13"}, { "mcc": "326","mnc": "14"}],
      "serviceNames": ["nudm-ee"],
      "nfInstanceIdsList": ["1aaf1bbc-6e4a-4454-a507-11111111111",
"1aaf1bbc-6e4a-4454-a507-222222222222"],
      "nfServiceInstanceIdsList": ["1aaf1bbc-6e4a-4454-0000-11111111111",
"1aaf1bbc-6e4a-4454-0000-222222222222"],
      "oauth2Required": true,
      "defaultScope": {
        "scopeSource": "CUSTOM-SCOPE",
        "scopelist":["nudm-uecm", "nudm-sdm"]
        }
     }
  },{
      ......
      ......
  }
]
```

Resource Definition

GET REST API

This resource fetches the Oauth2 configuration (Oauth2RequiredWrapper) based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config

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Table 2-140 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	Indicates the configuration name. If the parameter is empty, all configurations are returned.

Table 2-141 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(Oauth2RequiredWrapper)	M	1	200 OK	Indicates the list of oauth2 configurations (Oauth2RequiredWrapper) matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than three query parameters are provided.

Example

Successful response 1`$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config" -H "accept: application/json"`

```
[
  {
    "ruleName": "default",
    "data": {
      "nfType": "*"
      "oauth2Required": false,
      "defaultScope": {
        "scopeSource": "NF-TYPE"
     }
    }
  },{
    "ruleName": "config1",
    "data": {
      "nfType": "AMF",
      "localPlmnIds": [{"mcc":"325","mnc":"13"}, { "mcc": "326","mnc": "14"}],
      "serviceNames": ["nudm-ee"],
      "nfInstanceIdsList": ["1aaf1bbc-6e4a-4454-a507-11111111111",
"1aaf1bbc-6e4a-4454-a507-222222222222"],
      "nfServiceInstanceIdsList": ["1aaf1bbc-6e4a-4454-0000-11111111111",
"1aaf1bbc-6e4a-4454-0000-222222222222"],
      "oauth2Required": true,
      "defaultScope": {
        "scopeSource": "CUSTOM-SCOPE",
        "scopelist":["nudm-uecm", "nudm-sdm"]
        }
     }
  },{
      ......
```


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```
      ......
  }

]
```

Failure response$ `curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-configruleName=ojhasflakhsdvg" -H "accept: application/json"`

```
{
  "title": "Not Found",
  "status": "404",
  "detail": "oauth2 configuration data not found against given query parameter(s), Please refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/ruleName=ojhasflakhsdvg",
  "cause": "DATA_NOT_FOUND"
}
```

PUT REST API

This resource adds one Oauth 2 configuration (Oauth2RequiredWrapper) using the Request Body.

Resource URI: /ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config

Table 2-142 Data Structures Supported by the PUT Response Body

Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(Oauth2RequiredWrapper)	M	1	200 OK	Indicates the list of oauth2 configurations (Oauth2RequiredWrapper) matching criteria
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than three query parameters are provided.

Example

Successful response$ `curl -X PUT "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config" -H "accept: application/json" -H "Content-Type: application/json" -d "{\"ruleName\":\"Config2\",\"data\":{\"NFType\":\"PCF\"},\"oauth2Required\":true}"`

```
{
    "ruleName": "Config2",
    "data": {
        "nfType": "PCF",
        "oauth2Required": true,
     }
}
```


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```
200 OK
```

DELETE REST API

This resource removes one Oauth 2 configuration (Oauth2RequiredWrapper) based on query parameters.

Resource URI: /ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config

Table 2-143 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	O	1	Indicates the rule name.

Table 2-144 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None	-	-	204 OK	Returns the successful response. Only response code is returned.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found.

Example

Successful response

```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/
oauth2-authorization/local-plmn-oauth2-required-config?ruleName=Config2" -H
"accept: application/json" */*"

204 OK
```

Failure response`$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/oauth2-authorization/local-plmn-oauth2-required-config?ruleName=Config222" -H "accept: */*"`

```
{
  "title": "Not Found",
  "status": "404",
  "detail": "Oauth2 configuration data not found for the given 'ruleName':
Config222",
  "instance": "/ocscp/scpc-configuration/v1/oauth2-authorizationy/Config222",
  "cause": "DATA_NOT_FOUND"
}
```


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2.14 Configuring Error Profiles

This section provides information about configuring different Error Profiles, which can be used to build problem details sent in response body to the consumer.

Resources

The following table describes the resource name to retrieve, add, update, and remove error profile configuration based on the query parameters.

Table 2-145 Resource Name

Resource Name	Resource URI	HTTP Method	Description
error-response-profile	/ocscp/scpc-configuration/{version}/error-response-profile	GETALL	Retrieves all error profile configurations.
error-response-profile	/ocscp/scpc-configuration/{version}/error-response-profile/{name}	GET	Retrieves error profile configuration for given name.
error-response-profile	/ocscp/scpc-configuration/{version}/error-response-profile/{name}	PUT	Add or update error profile configuration for given name.
error-response-profile	/ocscp/scpc-configuration/{version}/error-response-profile/{name}	DELETE	Deletes error profile configuration for a given name; if the name is in use, it can't be deleted.

Data Model

Request Body

The following table describes the field names of the ErrorProfileData data type.

Table 2-146 ErrorProfileData

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
name (256)	String	M	Name of the configuration record
errorProfile	JSON	M	Error Profile JSON object

Table 2-147 ErrorProfile

Parameter	Data Type	Mandatory (M) or Optional(O)	Default Value	Allowed Value	Description
status	Integer	M	500	300-511	HTTP Status Code

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Table 2-147 (Cont.) ErrorProfile

Parameter	Data Type	Mandatory (M) or Optional(O)	Default Value	Allowed Value	Description
cause	String	M	`UNSPECIFIED_NF_FAILURE`	For list of error causes, see Table 2-153	This parameter indicates the list of error causes that are specific to the occurrence of the problem.
customCause	String (256)	C	null	NA	User defined custom cause. This field will be used only if cause field value is set to "CUSTOM".
title	String (256)	O	`Internal Server Error`	NA	If this field is null, a standard HTTP status code description is added.
detail	enum	O	null	NA	If present, the same data is used; otherwise, the application can add it optionally.
retryAfter	Integer	C	0	NA	This parameter indicates the number of seconds after client should retry.
redirectURL	String (256)	C	null	NA	This parameter indicates the AbsoluteURL of the resource to which the message is redirected.

Request Body JSON Format

```
{
  "name": "defaultErrorProfile",
  "errorProfile": {
    "status": 500,
    "cause": "UNSPECIFIED_NF_FAILURE",
    "customCause": null,
    "title": "INTERNAL_SERVER_ERROR",
    "detail": null,
    "retryAfter": 0,
    "redirectURL": null
  }
}
```

Resource Definition

GET REST API:

This resource fetches all the error profile based on the query parameters.

Resource URI: `/ocscp/scpc-configuration/{version}/error-response-profile`

The following table describes the data structure supported by the GET method on this resource.

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Table 2-148 Data structures supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
errorProfile	M	1.N	200 OK	Indicates error profile configurations.

This resource fetches all the error profile based on name.

Resource URI: `/ocscp/scpc-configuration/{version}/error-response-profile/{name}`

The following table describes the path parameter supported by the GET method on this resource.

Table 2-149 Path Parameter

Name	Data Type	Mandatory (M) or Optional(O)	Description
name	String	M	Fetches configurations on name.

Example

Successful response - 1

```
$ curl -X 'GET'\ 'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/
error-response-profile'\ -H 'accept:
        application/json'
```

```
[
  {
    "name": "ccaHeaderNotPresentError",
    "errorProfile": {
      "status": 400,
      "cause": "MANDATORY_IE_MISSING",
      "title": "BAD_REQUEST",
      "detail": "Bad Request, Mandatory 3gpp-Sbi-Client-Credential header
missing",
      "retryAfter": 0
    }
  },
  {
    "name": "ccaVerificationError",
    "errorProfile": {
      "status": 403,
      "cause": "CCA_VERIFICATION_FAILURE",
      "title": "FORBIDDEN",
      "detail": "Forbidden, CCA verification failed",
      "retryAfter": 0
```


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```
    }
  },
  {
    "name": "defaultErrorProfile",
    "errorProfile": {
      "status": 500,
      "cause": "UNSPECIFIED_NF_FAILURE",
      "title": "INTERNAL_SERVER_ERROR",
      "detail": "Internal Server Error",
      "retryAfter": 0
    }
  },
  {
    "name": "healthCheckErrorProfile",
    "errorProfile": {
      "status": 503,
      "cause": "NF_CONGESTION",
      "title": "NF service is overloaded/congested",
      "detail": "NF service is overloaded/congested"
    }
  }
]
```

Successful response - 2

```
$ curl -X 'GET'\'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/error-
response-profile/defaultErrorProfile'\ -H 'accept:
        application/json'
```

```
[
  [
   {
    "ruleName": "udm_test",
    "data": {
      "nfServiceName": "nudm_uecm",
      "httpMethods": [
        "GET",
        "POST"
      ],
      "messageType": "REQUEST",
      "enableAssignPriority": true,
      "assignPriority": 10,
      "enableOverridePriority": false,
      "overridePriority": -1
    }
  }
]
```


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Failure Case

```
$ curl -X 'GET'\'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/error-
response-profile/defaultError'\-H 'accept: application/json'
```

```
{
  "title": "Not Found",
  "status": "404",
  "detail": "Error Profile data not found against given name. Please refer to
the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/error-response-profile/
defaultError",
  "cause": "DATA_NOT_FOUND"
}
]
```

PUT REST API:

This resource adds or updates the error profile configuration using the request body.

Resource URI: `/ocscp/scpc-configuration/{version}/error-response-profile/{name}`

Table 2-150 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
errorProfile	M	1	200 OK	Indicates Error Profile to be added.
ProblemDetails	M	1	400/404	Returns ProblemDetails.

Example

Successful response

```
$ curl -X 'PUT'\'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/error-
response-profile/defaultErrorProfile'\  -H 'accept:
        application/json'\  -H 'Content-Type:
        application/json'\ -d '{"name":
        "defaultErrorProfile","errorProfile": {"status": 500,"cause":
        "UNSPECIFIED_NF_FAILURE","title": "INTERNAL_SERVER_ERROR", "detail":
"Internal
        Server Error", "retryAfter": 0}}'
```

```
{
  "name": "defaultErrorProfile",
  "errorProfile": {
    "status": 500,
```


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```
    "cause": "UNSPECIFIED_NF_FAILURE",
    "title": "INTERNAL_SERVER_ERROR",
    "detail": "Internal Server Error",
    "retryAfter": 0
  }
}
```

Failure Case

```
$ curl -X 'PUT'\'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/error-
response-profile/defaultErrorProfile'\-H 'accept:
        application/json'\-H 'Content-Type:
        application/json'\ -d '{"name":
        "defaultErrorProfile","errorProfile": {"status": 500,"cause":
"abc","title":
        "INTERNAL_SERVER_ERROR","detail": "Internal Server  Error",
"retryAfter":
        0}}'
```

```
{
  "title": "Bad Request",
  "status": "400",
  "detail": "The value given should be either 'custom' or present in
ApplicationError Enum List. Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/error-response-profile/
defaultErrorProfile",
  "cause": "MANDATORY_IE_MISSING"
}
```

DELETE REST API:

This resource deletes the error profile configuration data based on name.

Resource URI: `/ocscp/scpc-configuration/{version}/error-response-profile/{name}`

Table 2-151 Path Parameter

Name	Data Type	Mandatory (M) or Optional(O)	Description
name	String	M	Delete configurations for name.

Table 2-152 Data structures supported by the Delete Response Body on this resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
ProblemDetails	M	1	400/404	Problem Details.

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Example

Successful response

```
$ curl -X 'DELETE' \'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/
error-response-profile/defaultErrorProfile' \-H 'accept: application/
json'Server response
Code Details
204
Response headers
date: Fri,12 May 2023 07:13:56 GMT
```

Failure case

```
$ curl -X 'DELETE' \'http://10.75.212.104:31109/ocscp/scpc-configuration/v1/
error-response-profile/defaultErrorProfile' \ -H 'accept: application/json'
```

```
{
  "title": "Not Found",
  "status": "404",
  "detail": "Error Profile data not found against given name. Please refer to
the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/error-response-profile/
defaultErrorProfile",
  "cause": "DATA_NOT_FOUND"
}
```

Protocol or application Error

Table 2-153 Common Protocol and Application Errors

Protocol or application Error	HTTP status code	Description
INVALID_API	400 Bad Request	The HTTP request contains an unsupported API name or API version in the URI.
INVALID_MSG_FORMAT	400 Bad Request	The HTTP request has an invalid format.
INVALID_QUERY_PARAM	400 Bad Request	The HTTP request contains an unsupported query parameter in the URI. See NOTE 1.
MANDATORY_QUERY_PARAM_INCORRECT	400 Bad Request	A mandatory query parameter, or a conditional query parameter that is mandatory, for an HTTP method was received in the URI with a semantically incorrect value. See NOTE 1.
OPTIONAL_QUERY_PARAM_INCORRECT	400 Bad Request	An optional query parameter for an HTTP method was received in the URI with a semantically incorrect value that prevents successful processing of the service request. See NOTE 1.

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Table 2-153 (Cont.) Common Protocol and Application Errors

Protocol or application Error	HTTP status code	Description
MANDATORY_QUERY_PARAM_MISSING	400 Bad Request	A query parameter that is defined as mandatory, or as conditional but mandatory, for an HTTP method is not included in the URI of the request. See NOTE 1.
MANDATORY_IE_INCORRECT	400 Bad Request	A mandatory IE within the JSON body, within a variable part of an `apiSpecificResourceUriPart` or within an HTTP header, or a conditional IE but mandatory for an HTTP method was received with a semantically incorrect value. See NOTE 1.
OPTIONAL_IE_INCORRECT	400 Bad Request	An optional IE within the JSON body or within an HTTP header for an HTTP method was received with a semantically incorrect value that prevents successful processing of the service request. See NOTE 1.
MANDATORY_IE_MISSING	400 Bad Request	A mandatory IE within the JSON body or within the variable part of an `apiSpecificResourceUriPart` or within an HTTP header, or a conditional IE but mandatory, for an HTTP method is not included in the request. See NOTE 1.
UNSPECIFIED_MSG_FAILURE	400 Bad Request	The request is rejected due to an unspecified client error. See NOTE 2.
RESOURCE_CONTEXT_NOT_FOUND	400 Bad Request	The notification request is rejected because the callback URI still exists in the receiver of the notification, but the specific resource context identified within the notification payload is not found in the NF service consumer.
CCA_VERIFICATION_FAILURE	403 Forbidden	The request is rejected due to a failure to verify the CCA at the receiving entity, for example, an NRF or NF service producer.
TOKEN_CCA_MISMATCH	403 Forbidden	The request is rejected due to a mismatch between the subject claim in the access token and the subject claim in the CCA.
MODIFICATION_NOT_ALLOWED	403 Forbidden	The request is rejected because the contained modification instructions attempt to modify IE, which is not allowed to be modified.
SUBSCRIPTION_NOT_FOUND	404 Not Found	The request for modification or deletion of the subscription is rejected because the subscription is not found in the NF.

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Table 2-153 (Cont.) Common Protocol and Application Errors

Protocol or application Error	HTTP status code	Description
RESOURCE_URI_STRUCTURE_NOT_FOUND	404 Not Found	The request is rejected because a fixed part after the first variable part of an `apiSpecificResourceUriPart` (as defined in clause 4.4.1 of 3GPP TS 29.501 [5]) is not found in the NF. This fixed part of the URI may represent a sub-resource collection, for example, contexts, subscriptions, policies, or a custom operation. See NOTE 5.
INCORRECT_LENGTH	411 Length Required	The request is rejected due to the incorrect value of the content-length header field.
NF_CONGESTION_RISK	429 Too Many Requests	The request is rejected due to excessive traffic which, if continued over time, may lead to (or may increase) an overload situation.
INSUFFICIENT_RESOURCES	500 Internal Server Error	The request is rejected due to insufficient resources.
UNSPECIFIED_NF_FAILURE	500 Internal Server Error	The request is rejected due to unspecified reason at the NF. See NOTE 3.
SYSTEM_FAILURE	500 Internal Server Error	The request is rejected due to generic error condition in the NF.
NF_FAILOVER	500 Internal Server Error	The request is rejected due to the unavailability of the NF, and the requester may trigger an immediate re-selection of an alternative NF based on this information. See NOTE 6
NF_SERVICE_FAILOVER	500 Internal Server Error	The request is rejected due to the unavailability of the NF service, and the requester may trigger an immediate re-selection of an alternative NF service based on this information. See NOTE 6.
NF_CONGESTION	503 Service Unavailable	The NF experiences congestion and performs overload control, which does not allow the request to be processed. See NOTE 4.
TARGET_NF_NOT_REACHABLE	504 Gateway Timeout	The request is not served as the target NF is not reachable.
TIMED_OUT_REQUEST	504 Gateway Timeout	The request is rejected due to a request that has timed out at the HTTP client.

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Note

1. `invalidParams` attribute is included in the "ProblemDetails" data structure, indicating unsupported, missing, or incorrect IEs, query parameters, or 3gpp-Sbi-Discovery-* headers.
2. This application error indicates an error in the HTTP request, and there is no other application error value that can be used instead.
3. This application error indicates an error condition in the NF, and there is no other application error value that can be used instead.
4. If the reason for rejection is a temporary overload, the NF may include in the response a Retry-After header field to indicate how long the service is expected to be unavailable.
5. If the request is rejected because of an error in an URI before the first variable part of an "apiSpecificResourceUriPart", the "404 Not Found" HTTP status code may be sent without the "ProblemDetails" data structure indicating a protocol or application error.
6. The NF service consumer (as receiver of the cause code) should stop sending subsequent requests addressing the resource contexts in the producer's NF instance (for NF_FAILOVER) or NF service instance (for NF_SERVICE_FAILOVER) to avoid massive rejections. The NF service consumer may reselect an alternative NF service producer as specified in clause 6.5 of 3GPP TS 23.527 [38], for example, using the binding indication of resource context. It is implementation specific for the NF service consumer to determine when and whether the NF producer becomes available again, for example, when there is no other alternative available or at expiry of a local configured timer.

2.15 Outlier Detection Configuration

This section describes the REST API configurations required for Outlier Detection. Outlier Detection is configured for each service in the routing option and for inter-SCP and SEPP in System Options. Outlier Detection configurations created using this REST API are used in Routing Options for NF Services and in System Options for inter-SCP and SEPP. This feature can be disabled at the global or system level and enabled at the NF service level in the routing option to work for those services.

Resources

The following table describes the resource URIs and the corresponding HTTP methods for the outlier-detection resource type.

Table 2-154 Resources

Resource Name	Resource URI	HTTP Method	Description
outlier-detection	/ocscp/scpc-configuration/{version}/outlier-detection	GET	Retrieves all outlier-detection configurations.
outlier-detection	/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}	GET	Retrieves outlier-detection configuration for a given ruleName.

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Table 2-154 (Cont.) Resources

Resource Name	Resource URI	HTTP Method	Description
outlier-detection	/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}	PUT	Create or update the outlier-detection configuration for a given ruleName.
outlier-detection	/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}	PATCH	Updates outlier-detection configuration by ruleName.
outlier-detection	/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}	DELETE	Removes outlier-detection configuration for a given ruleName. If the rule is in use, then it cannot remove the ruleName.

Data Model

Request Body

The following table describes outlierDetectionConfig data types.

Table 2-155 outlierDetectionConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
ruleName	String	M	NA	NA	Provides the unique rule present in the outlier detection table that must not be repeated.
consecutiveErrors	Integer	O	100	5 - 500	Number of consecutive errors after which an endpoint is considered unhealthy.
interval	String	O	86400 seconds	30 seconds - 86400 seconds	Interval after which stale records are removed from the outlier data cache. Stale records are identified as the records that are not referenced by any message in this interval. **Note:** The `interval` value must be significantly greater than `baseEjectionTime`.
baseEjectionTime	String	O	5 seconds	1 second - 500 seconds	Duration for which an endpoint is ejected

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Table 2-155 (Cont.) outlierDetectionConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
ErrorList	Array(String)	O	["Connection Error", "Timeouts", 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, 511]	["Connection Error", "Timeouts",301, 302, 303, 304, 307, 308, 400, 401, 403, 404, 405, 406, 407, 408, 409 , 410, 411, 412, 413, 414, 415, 416, 417, 421, 422, 425, 426, 428, 429, 431, 451, 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, 511]	List with errors to be considered for outlier detection.

Response Body

JSON Format

```
{
  "ruleName": "defaultRule",
  "outlierDetectionConfigData": {
    "consecutiveErrors": 100,
    "interval": "86400s",
    "baseEjectionTime": "5s",
    "ErrorList": [
      "500"
    ]
  }
}
```

Response Body

JSON Format

```
{
  "ruleName": "defaultRule",
  "outlierDetectionConfigData": {
```


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```
    "consecutiveErrors": 100,
    "interval": "86400s",
    "baseEjectionTime": "5s",
    "ErrorList": [
      "500"
    ]
  }
}
```

Resource Definition

This section describes GET, PUT, PATCH, and DELETE resource types supported by this feature.

GET REST API

This section describes the resources to fetch all the outlier-detection configurations.

Resource URI: `/ocscp/scpc-configuration/{version}/outlier-detection`

Table 2-156 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
outlierDetectionConfig	M	1,,N	200 OK	Indicates outlier-detection configurations.

Resource to fetch all the outlier-detection configurations based on ruleName.

Resource URI: `/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}`

Table 2-157 Path Parameters

Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Fetches configurations on ruleName.

Table 2-158 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
outlierDetectionConfig	M	1	200 OK	Indicates outlier-detection configurations.
ProblemDetails	M	1	404	Provides problem details.

PUT REST API

This section describes outlier-detection configurations for a given data.

Resource URI: `/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}`

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Table 2-159 Data Structures Supported by the PUT Request Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
outlierDetectionConfig	M	1	200 OK	Indicates outlier-detection configurations.
ProblemDetails	M	1	400 or 404 BAD REQUEST	Provides problem details.

PATCH REST API

This section describes resource to update the outlier-detection configurations using the request body.

Resource URI: `/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}`

Table 2-160 Data Structures Supported by the PATCH Request Body

Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Rule name for which Outlier Detection configuration is modified.
outlierDetectionConfig	JSON	0	patchDocument to be sent. For example, `[{ "op": "replace", "path": "/outlierDetectionConfigData/interval", "value": "50s" }][{ "op": "replace", "path": "/outlierDetectionConfigData/ErrorList", "value": ["500","501"] }]`

DELETE REST API

This section describes resources to fetch all the outlier-detection configurations based on ruleName.

Resource URI: `/ocscp/scpc-configuration/{version}/outlier-detection/{ruleName}`

Table 2-161 Path Parameter

Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Fetch configurations on ruleName.

Table 2-162 Data Structures Supported by the DELETE Request Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
ProblemDetails	M	1	400 or 404 BAD REQUEST	Provides problem details.

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2.16 Configuring Ingress Rate Limiting

This section provides the following information about Ingress Rate Limiting configuration:

- List of resources required for retrieving, configuring, and deleting the Ingress Rate Limiting data.
- Ingress Rate Limiter data name and data type.
- Functionalities of GET, PUT, and DELETE APIs.

Resources

The following table describes the resources for retrieving, configuring, and deleting the Ingress Rate Limiting data.

Table 2-163 Ingress Rate Limiting Resource Names

Resource Name	Resource URI	HTTP Method	Query Parameters	Description
ingressRateLimiter	/ocscp/scpc-configuration/v1/ratelimit/ingress	GET	NFType or FQDN or NfInstanceId	Retrieves Ingress Rate Limiting data configured to the corresponding supplied query parameters.
ingressRateLimiter	/ocscp/scpc-configuration/v1/ratelimit/ingress	PUT	NA	Configures Ingress Rate Limiting data using the supplied request body in the JSON format.
ingressRateLimiter	/ocscp/scpc-configuration/v1/ratelimit/ingress	DELETE	FQDN or NfInstanceId	Deletes Ingress Rate Limiting data corresponding to supplied query parameters.

Data Model

Request Body
The following table describes Ingress Rate Limiter data name and data type.

Table 2-164 IngressRateLimiterData

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Description
nfType	NFType	C	1	Indicates the supported NFType as described in the 3GPP TS 29.510 section 6.1.6.3.3: UDM, AMF, SMF, AUSF, NEF, NRF, PCF, SMSF, NSSF, UDR, LMF, GMLC, F5GEIR, SEPP, UPF, N3IWF, AF, UDSF, BSF, CHF, NWDAF, CUSTOM_ORACLE_SCP, SCP.
fqdn	String	C	1	Indicates the FQDN of consumer NF.
NfInstanceId	String	C	1	NfInstanceId of consumer NF
enabled	Boolean	O	1	Indicates whether the rate limiting is enabled for nfType/fqdn. Default value is false.
data	Data	M	1	Indicates the rate limit configuration data.

Data

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The following table describes the types of data.

Table 2-165 Data Name and Type

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Description
config	Config	M	1	Indicates the rate limit data.
errorResponse	ErrorResponse	M	1	Indicates the error handling related data.

Config

Table 2-166 Config Data Type

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Range	Description
durationInSec	integer	M	1	1-1	Indicates the time unit in seconds to calculate the rate. The default value is 1 second.
rate	integer	M	1	1- 50000	Indicates the messages or time unit to be accepted.
burstPercentage	integer	O	1	0 - 100	Indicates the Burst percentage used to calculate the number of burst messages allowed per 100ms. The default value is 0. **Note**: Burst Control is not supported. Therefore, any value set for this parameter does not take effect.

Table 2-167 ErrorResponse

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Range	Description
errorResponse	String	O	1	0-200 characters	Indicates the Custom Error String used in cause field of the ProblemDetails structure as defined in the 3GPP TS 29.571 section 5.2.4.1. Default value shall be a constant string "INGRESS-RATE-LIMITER:TOO MANY REQUESTS" auto configured by SCP.
errorCode	Int	M	1	3xx,4xx,5xx	Indicates the Http Status code.

JSON Format

```
{
```


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```
  "data": {
    "config": {
      "durationInSec": 1,
      "rate": 0,
      "burstPercentage" : 0
    },
    "errorResponse": {
      "errorCode": 0,
      "errorResponse": "string"
    }
  },
  "enabled": true,
  "fqdn": "string",
  "nfinstanceid":"string",
  "nfType": "string"
}
```

Response Body
The response body data model varies based on the Rest operation status. For more information, refer to the subsequent sections.

Table 2-168 Response Body Data Type

Data Type	Description
IngressRateLimiterData	Same as the request body as described in Table 2-164.
ProblemDetails	Returns when an invalid combination or more than two query parameters are provided.
None	Indicates an empty body.

Resource Definition

GET REST API
This resource fetches the Ingress Rate Limiting Configuration based on the query parameters. If no query parameter is provided, all the Ingress Rate Limiting Configuration data is returned.

Resource URI: `/ocscp/scpc-configuration/v1/ratelimit/ingress`

The following table describes URI query parameters supported by the GET method on this resource.

Table 2-169 URI Query Parameters

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
Fqdn	String	O	1	Indicates the FQDN of consumer NF.
NfInstanceId	String	O	1	NfInstanceId of consumer NF
NFType	NFType	O	1	Indicates the NFType supported as described in the 3GPP TS 29.510 section 6.1.6.3.11: UDM, AMF, SMF, AUSF, NEF, PCF, SMSF, NSSF, UDR, LMF, GMLC, F5GEIRSEPP, UPF, N3IWF, AF, UDSF, BSF, CHF, NWDAF, CUSTOM_ORACLE_SCP, SCP.

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> **Note**
>
> Only one Query parameters is supported at a time.

The following table describes data structures supported by the GET Response Body on this resource.

Table 2-170 Data Structures

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(IngressRateLimiterData)	M	1	200 OK	Indicates the list of Ingress Rate Limiting Configuration data.
IngressRateLimiterData	M	1	200 OK	Indicates the Ingress Rate Limiting Configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Indicates that the requested combination of Query Parameters is not allowed.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example:

Successful response

```
curl -X GET "http://10.75.225.82:31578/ocscp/scpc-configuration/v1/ratelimit/
ingress?nfType=PCF" -H "accept: */*"
{
  "nfType": "PCF",
  "data": {
    "config": {
      "rate": 1000,
      "durationInSec": 1,
      "burstPercentage": 0
    },
    "errorResponse": {
      "errorResponse": "TOO MANY REQUESTS",
      "errorCode": 429
    }
  },
  "enabled": true
}
```

Failure response, If the Ingress rate limiting data is not configured.

```
curl -X GET "http://10.75.225.82:31578/ocscp/scpc-configuration/v1/ratelimit/
ingress?fqdn=amf" -H "accept: */*"

{
  "title": "Not Found",
  "status": "404",
  "detail": "Ingress Rate Limiting Configuration data not found against given
query parameter.",
  "instance": "/ocscp/scpc-configuration/v1/ratelimit/ingress?fqdn=amf",
```


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```
  "cause": "DATA_NOT_FOUND"
}
```

PUT API

This resource adds Ingress Rate Limiting Configuration using the Request Body.

Resource URI: `/ocscp/scpc-configuration/v1/ratelimit/ingress`

> **Note**
>
> One of the following fields must be present in the request body:
>
> - Fqdn
> - NFType

The following table describes Data structures supported by the PUT Response Body on this resource.

Table 2-171 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
IngressRateLimiterData	M	1	200 OK	Indicates the Ingress Rate Limiting Configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Indicates that both NFType and Fqdn is provided in the request. Returns when an invalid combination or more than two query parameters are provided.

Example:

Successful response

```
curl -X PUT "http://10.75.225.82:30361/ocscp/scpc-configuration/v1/ratelimit/
ingress" -H "accept: */*" -H "Content-Type: application/json" -d "{\"data\":
{\"config\":{\"durationInSec\":1,\"rate\":80},\"errorResponse\":
{\"errorCode\":429,\"errorResponse\":\"INGRESS-RATE-LIMITER:TOO MANY
REQUESTS\"}},\"enabled\":true,\"nfType\":\"UDM\"}"
```

```
{
  "nfType": "UDM",
  "data": {
    "config": {
      "rate": 80,
      "durationInSec": 1,
      "burstPercentage": 0
    },
    "errorResponse": {
      "errorResponse": "INGRESS-RATE-LIMITER:TOO MANY REQUESTS",
      "errorCode": 429
    }
```


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```
  },
  "enabled": true
}

200 OK
```

Failure response: If both FQDN and NFType are given in the request body.

```
curl -X PUT "http://10.75.225.82:31578/ocscp/scpc-configuration/v1/ratelimit/
ingress" -H "accept: */*" -H "Content-Type: application/json" -d "{\"data\":
{\"config\":{\"durationInSec\":1,\"rate\":200},\"errorResponse\":
{\"errorCode\":429,\"errorResponse\":\"TOO MANY
REQUESTS\"}},\"enabled\":true,\"fqdn\":\"udm.oracle.com\",\"nfType\":\"UDM\"}"

{
  "title": "Bad Request",
  "status": "400",
  "detail": "Both NFType and Fqdn is provided in the request body, Only one
of the 2 fields can be provided.",
  "instance": "/ocscp/scpc-configuration/ratelimit/ingress",
  "cause": "INVALID_KEY_COMBINATION"
}
```

Failure response: if `rate` divided by `durationInSec` is less than 10, then the configuration is considered as invalid.

```
curl -X 'PUT' \
  'http://10.75.215.197:32438/ocscp/scpc-configuration/v1/ratelimit/ingress' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
  "data": {
    "config": {
      "burstPercentage": 0,
      "durationInSec": 1,
      "rate": 1
    },
    "errorResponse": {
       "errorResponse": "INGRESS-RATE-LIMITER:TOO MANY REQUESTS",
        "errorCode": 429
    }
  },
  "enabled": true,
  "fqdn": "amf1svc.oracle.com"
}
'
{
  "title": "Bad Request",
  "status": "400",
  "detail": "rate divided by durationInSec should be more than or equal to
10, Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/ratelimit/ingress",
  "cause": "MANDATORY_IE_INCORRECT"
}
```


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DELETE API:
This resource deletes the Ingress Rate Limiting Configuration data based on the query parameters.

Resource URI: `/ocscp/scpc-configuration/v1/ratelimit/ingress`

The following table describes URI query parameters supported by the DELETE method on this resource.

Table 2-172 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
Fqdn	String	O	1	Indicates the FQDN of consumer NF.
NfInstanceId	String	O	1	NfInstanceId of Consumer NF

> **Note**
>
> Rate limit configuration corresponding to NFType is used as the default configuration and only update operation is supported on it.

The following table describes Data structures supported by the DELETE Response Body on this resource.

Table 2-173 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			200 OK	Indicates that the response is successful.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found. Returns when an invalid combination or more than two query parameters are provided.

Example

Successful response

```
curl -X DELETE
    "http://10.75.225.82:31578/ocscp/scpc-configuration/v1/ingressratelimiter?
fqdn=udm.oracle.com" -H
    "accept: */*" 200 OK
```

Failure Response: When no matching entry is found.

```
curl -X DELETE
    "http://10.75.225.82:31578/ocscp/scpc-configuration/v1/ingressratelimiter?
fqdn=amf" -H "accept:
    */*" { "title": "Not Found", "status": "404", "detail": "Ingress Rate
Limiting
    Configuration data not found against given fqdn.", "instance":
```


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```
    "/ocscp/scpc-configuration/v1/ratelimit/ingress?fqdn=amf", "cause":
"DATA_NOT_FOUND"
    }
```

2.17 Configuring Egress Rate Limiting and Global Egress Rate Limiting

This section provides the information about Egress Rate Limiting and Global Egress Rate Limiting configurations:

- List of resources required for retrieving, configuring, and deleting the rate limiting data.
- Rate limiter data name and data type.
- Functionalities of GET, PUT, and DELETE REST APIs.

Resources

The following table describes the resources for retrieving, configuring, and deleting the egress rate limiting data.

Table 2-174 Egress Rate Limiting Resource Names

Resource Name	Resource URI	HTTP Method	Query Parameters	Description
egressRateLimiter	/ocscp/scpc-configuration/v1/ratelimit/egress	GET	Combination of NFType/FQDN/ serviceName	Retrieves egress rate limiting data configured to the corresponding supplied query parameters.
egressRateLimiter	/ocscp/scpc-configuration/v1/rateimit/egress	PUT	NA	Configures egress rate limiting data using the supplied request body in the JSON format.
egressRateLimiter	/ocscp/scpc-configuration/v1/ratelimit/egress	DELETE	Combination of NFType/FQDN/ serviceName	Removes egress rate limiting data corresponding to supplied query parameters.

Data Model

Request Body

The following table describes egress rate limiter data name and data type.

Table 2-175 EgressRateLimiterData

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Description
nfType	NFType	C	1	Indicates the supported NFType as described in the 3GPP TS 29.510 section 6.1.6.3.3: NRF, UDM, AMF, SMF, AUSF, NEF, PCF, SMSF, NSSF, UDR, LMF, GMLC, F5GEIR, SEPP, UPF, N3IWF, AF, UDSF, BSF, CHF, NWDAF, CUSTOM_ORACLE_SCP, SCP.
serviceName	ServiceName	C	1	Indicates the ServiceName as per the supported NFType.

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Table 2-175 (Cont.) EgressRateLimiterData

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Description
fqdn	String	C	1	Indicates the FQDN of producer NF.
enabled	Boolean	O	1	Indicates whether the rate limiting is enabled for this entry: Default value is false.
data	Data	M	1	Indicates the rate limit configuration data.

Data

The following table describes the types of data.

Table 2-176 Data Name and Type

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Description
config	Config	M	1	Indicates the rate limit data.
errorResponse	ErrorResponse	C	1	Indicates the error handling related data.

Config

Table 2-177 Config Data Type

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Range	Description
durationInSec	integer	M	1	1-1	Indicates the time unit in seconds to calculate the rate. The default value is 1 second.
rate	integer	M	1	1- 75000	Indicates the messages / time unit to be accepted when aggregatedRate is set to 0 or the Global Egress Rate Limit feature is disabled.
aggregatedRate	integer	O	1	0- 75000	Indicates the messages / time unit to be accepted when the Global Egress Rate Limit feature is enabled. If it is set to 0, this field is ignored and this configuration is not considered for Global Egress Rate Limit. It is considered for local rate limit.

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Table 2-177 (Cont.) Config Data Type

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Range	Description
burstPercentage	integer	O	1	0 - 100	Indicates the Burst percentage used to calculate the number of burst messages allowed per 100ms. **Note**: Burst Control is not supported. Therefore, any value set for this parameter does not take effect.
action	String	O	1	"sendResponse" / "AlternateRoute" Default value is "sendResponse"	Defines the action if the rate limit quota is exhausted. "sendResponse": send configured error response back immediately "AlternateRoute": attempt alternate routing

Table 2-178 ErrorResponse

Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Range	Description
errorResponse	String	O	1	0-200	Indicates the Custom Error String used in cause field of the ProblemDetails structure as defined in the 3GPP TS 29.571 section 5.2.4.1. Default value shall be a constant string "EGRESS-RATE-LIMITER:TOO MANY REQUESTS" auto configured by SCP.
errorCode	Int	M	1	3xx,4xx,5xx	Indicates the Http Status code.

JSON Format

```
{
  "data": {
    "config": {
      "action": "string",
      "aggregatedRate": 0,
      "burstPercentage": 0,
      "durationInSec": 1,
      "rate": 0
    },
    "errorResponse": {
      "errorCode": 0,
      "errorResponse": "string"
    }
  },
  "enabled": true,
```


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```
  "fqdn": "string",
  "nfType": "string",
  "serviceName": "string"
}
```

Response Body
The response body data model varies based on the REST operation status.

Table 2-179 Response Body Data Type

Data Type	Description
EgressRateLimiterData	Same as the request body as described in Table 2-175.
ProblemDetails	Indicates the ProblemDetails structure as defined in the 3GPP TS 29.571 section 5.2.4.1.
None	Indicates an empty body.

Resource Definition

GET REST API
This resource fetches the egress rate limiting configuration based on the query parameters. If no query parameter is provided, all the egress rate limiting configuration data is returned.

Resource URI: /ocscp/scpc-configuration/v1/ratelimit/egress

The following table describes URI query parameters supported by the GET method on this resource.

Table 2-180 URI Query Parameters

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
NFType	NFType	O	1	Indicates the supported NFType as described in the 3GPP TS 29.510 section 6.1.6.3.3: UDM, AMF, SMF, AUSF, NEF, PCF, SMSF, NSSF, UDR, LMF, GMLC, F5GEIRSEPP, UPF, N3IWF, AF, UDSF, BSF, CHF, NWDAF, CUSTOM_ORACLE_SCP, SCP.
serviceName	ServiceName	O	1	Indicates the ServiceName as per the supported NFType.
Fqdn	String	O	1	Indicates the FQDN of producer NF.

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> **Note**
>
> The valid combination of query parameters are as follows:
>
> - Fqdn + serviceName
> - Fqdn + NFType
> - Fqdn
> - serviceName
> - NFType

The following table describes data structures supported by the GET Response Body on this resource.

Table 2-181 Data Structures Supported by the GET Response Body on this resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array (EgressRateLimiterData)	M	1	200 OK	Indicates the list of egress rate limiting configuration data.
EgressRateLimiterData	M	1	200 OK	Indicates the egress rate limiting configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Indicates that the requested combination of query parameters is not allowed.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example:

Successful response - 1, Combination of Fqdn, serviceName

```
$ curl -X GET "http://10.75.224.67:31612/ocscp/scpc-configuration/v1/
ratelimit/egress?serviceName=nudm-uecm&fqdn=udm1svc.scpsvc.svc.cluster.local"
-H "accept: */*"
```

```
 {
  "fqdn": "udm1svc.scpsvc.svc.cluster.local",
  "serviceName": "nudm-uecm",
  "data": {
    "config": {
      "rate": 1000,
      "durationInSec": 1,
      "action": "AlternateRoute",
      "burstPercentage": 0,
      "aggregatedRate": 5000
    },
    "errorResponse": {
      "errorResponse": "TOO MANY REQUEST",
      "errorCode": 429
    }
  },
```


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```
  "enabled": true
}
```

Successful response - 2, Only serviceName

```
$ curl -X GET "http://10.75.224.67:31612/ocscp/scpc-configuration/v1/
ratelimit/egress?serviceName=nudm-uecm" -H "accept: */*"

{
  "serviceName": "nudm-uecm",
  "data": {
    "config": {
      "rate": 1000,
      "durationInSec": 1,
      "action": "AlternateRoute",
      "burstPercentage": 0,
      "aggregatedRate": 5000
    },
    "errorResponse": {
      "errorResponse": "TOO MANY REQUEST",
      "errorCode": 429
    }
  },
  "enabled": true
}
```

Failure case, Incorrect combination of parameters such as NFType and serviceName

```
$ curl -X GET "http://10.75.226.108:30331/ocscp/scpc-configuration/v1/
ratelimit/egress?nfType=UDM&serviceName=nudm-uecm" -H "accept: */*"
Response Body :
{
  "title": "Bad Request",
  "status": "400",
  "detail": "Requested combination of Query Parameters is not allowed, please
refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/ratelimit/egress?
nfType=UDM&serviceName=nudm-uecm",
  "cause": "INVALID_QUERY_PARAM"
}
```

PUT REST API

This resource adds and updates egress rate limiting configuration using the Request Body.

Resource URI: /ocscp/scpc-configuration/v1/ratelimit/egress

The following table describes data structures supported by the PUT Response Body on this resource.

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Table 2-182 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
EgressRateLimiterData	M	1	200 OK	Indicates the egress rate limiting configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Indicates that both NFType and Fqdn is provided in the request. The ProblemDetails structure is defined in the 3GPP TS 29.571 Section 5.2.4.1.

> **Note**
>
> The valid combination of fields in the request body is as follows:
>
> - Fqdn, serviceName
> - Fqdn, NFType
> - Fqdn
> - serviceName
> - NFType

Example:

Successful response - 1, Combination of Fqdn and ServiceName.

Configuring with a global rate of 5000 with aggregatedRate field.

```
$ curl -X PUT "http://10.75.226.108:32042/ocscp/scpc-configuration/v1/
ratelimit/egress" -H "accept: */*" -H "Content-Type: application/json" -d
"{\"data\":{\"config\":
{\"action\":\"AlternateRoute\",\"durationInSec\":1,\"rate\":100},\"errorRespon
se\":{\"errorCode\":429,\"errorResponse\":\"EGRESS_RATE_LIMITER:TOO MANY
REQUEST\"}},\"enable\":true,\"fqdn\":\"udm1.vzw.com\",\"serviceName\":\"nudm-
uecm\"}"

{
  "fqdn": "udm1.vzw.com",
  "serviceName": "nudm-uecm",
  "enabled": true,
  "data": {
    "config": {
      "rate": 100,
      "durationInSec": 1,
      "burstPercentage" : 0,
      "action": "AlternateRoute"
    },
    "globalConfig": {
      "rate": 120,
      "durationInSec": 1,
```


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```
      "burstPercentage" : 0,
      "action": "AlternateRoute"
    },
    "errorResponse": {
      "errorResponse": "EGRESS_RATE_LIMITER:TOO MANY REQUEST",
      "errorCode": 429
    }
  }
}

200 OK
```

Successful response - 2, Combination of Fqdn and ServiceName.

```
curl -X 'PUT' \
  'http://<SCP configuration FQDN>:30446/ocscp/scpc-configuration/v1/
ratelimit/egress' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
  "fqdn": "nef1.vzw.com",
  "serviceName": "nnef-eventexposure",
  "enabled": true,
  "data": {
    "config": {
      "rate": 100,
      "durationInSec": 1,
      "burstPercentage" : 0,
      "action": "AlternateRoute"
    },
    "globalConfig": {
      "rate": 120,
      "durationInSec": 1,
      "burstPercentage" : 0,
      "action": "AlternateRoute"
    },
    "errorResponse": {
      "errorResponse": "EGRESS_RATE_LIMITER:TOO MANY REQUEST",
      "errorCode": 429
    }
  }
}'
```

Failure case 1: Incorrect combination of fields such as NFType and serviceName in request body

```
$ curl -X PUT "http://10.75.226.108:30331/ocscp/scpc-configuration/v1/
ratelimit/egress" -H "accept: */*" -H "Content-Type: application/json" -d
"{\"data\":{\"config\":
{\"action\":\"AlternateRoute\",\"durationInSec\":1,\"rate\":300},\"errorRespon
se\":{\"errorCode\":0,\"errorResponse\":\"\"}},\"enable\":true
,\"nfType\":\"UDM\",\"serviceName\":\"nudm-uecm\"}"


Response Body:
```


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```
{
  "title": "Bad Request",
  "status": "400",
  "detail": "Incorrect combination of Keys in request Body, please refer to
the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/ratelimit/egress",
  "cause": "INVALID_KEY_COMBINATION"
}
```

Failure response: if `rate` divided by `durationInSec` is less than 10, then the configuration is considered as invalid.

```
curl -X 'PUT' \
  'http://10.75.215.197:32438/ocscp/scpc-configuration/v1/ratelimit/egress' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
  "data": {
    "config": {
      "action": "sendResponse",
      "burstPercentage": 0,
      "durationInSec": 1,
      "rate": 1,
      "aggregatedRate": 0
    },
    "errorResponse": {
      "errorResponse": "EGRESS-RATE-LIMITER:TOO MANY REQUESTS",
        "errorCode": 429
    }
  },
  "enabled": true,
  "fqdn": "udm1svc.scpsvc.svc.cluster.local"
}'
{
  "title": "Bad Request",
  "status": "400",
  "detail": "rate divided by durationInSec should be more than or equal to
10, Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/ratelimit/egress",
  "cause": "MANDATORY_IE_INCORRECT"
}
```

DELETE REST API

This resource deletes the egress rate limiting configuration data based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/ratelimit/egress

The following table describes URI query parameters supported by the DELETE method on this resource.

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Table 2-183 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
NFType	NFType	O	1	Indicates supported NFType as described in the 3GPP TS 29.510 section 6.1.6.3.3: UDM, AMF, SMF, AUSF, NEF, PCF, SMSF, NSSF, UDR, LMF, GMLC, F5GEIR, SEPP, UPF, N3IWF, AF, UDSF, BSF, CHF, NWDAF, CUSTOM_ORACLE_SCP, SCP.
serviceName	ServiceName	O	1	Indicates the ServiceName as per supported NFType.
Fqdn	String	O	1	Indicates the FQDN of producer NF.

Note

The valid combination of query parameters are provided as follows:

- Fqdn, serviceName
- Fqdn, NFType
- Fqdn
- serviceName

The following table describes data structures supported by the DELETE Response Body on this resource.

Table 2-184 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			200 OK	Indicates that the response is successful.
ProblemDetails	M	1	400 BAD REQUEST	Indicates that the requested combination of query parameters is not allowed.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example

Successful response - 1, Combination of Fqdn and serviceName

```
$ curl -X DELETE "http://10.75.226.108:30331/ocscp/scpc-configuration/v1/
ratelimit/egress?fqdn=udm1.vzw.com&serviceName=nudm-uecm"-H "accept:
*/*" 200OK
```


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Successful response - 2, Only Fqdn Delete

```
$ curl -X DELETE "http://10.75.226.108:30331/ocscp/scpc-configuration/v1/
egressratelimiter?fqdn=udm1.vzw.com"-H "accept:
*/*" 200OK
```

Failure case 1, Incorrect query parameter like NFType

```
$ curl -X DELETE "http://10.75.226.108:30331/ocscp/scpc-configuration/v1/
ratelimit/egress?nfType=UDM"-H "accept:
*/*" Response Body:{ "title": "Bad Request", "status": "400",
"detail": "Requested Delete combination of Query Parameters is not allowed,
please refer to the User Guide", "instance": "/ocscp/scpcconfiguration/
v1/ratelimit/egress?nfType=UDM", "cause":
"INVALID_QUERY_PARAM"}
```

Failure case 2, When no matching entry is found

```
$ curl -X DELETE "http://10.75.226.108:30331/ocscp/scpcconfiguration/
v1/ratelimit/egress?serviceName=nudm-sdm"-H "accept:
*/*" Response Body:{ "title": "Not Found", "status": "404",
"detail": "Egress Rate Limiting configuration data not found against
given
query parameter(s), Please refer to the User Guide",
"instance":
"/ocscp/scpc-configuration/v1/ratelimit/egress?
serviceName=nudm-sdm", "cause": "DATA_NOT_FOUND"}
```

2.18 Configuring Dynamic Logging

Service Communication Proxy (SCP) provisions an option to change log levels of SCP microservices dynamically through SCP configuration service.

Retrieving all Service Level Logs

Table 2-185 Retrieving all Service Level Logs

Resource URI	HTTP Method	Content Type	Response Codes
Configuration attributes for all service level logs			
http://<ip>:<port>/ocscp/scpc-configuration/v1/all/logging	GET	application/json	• 200: Successfully returns Log Levels of all SCP microservices • 404: No SCP Log levels found in system
Configuration attributes at service level logs			
http://<ip>:<port>/ocscp/scpc-configuration/v1/<microservice-name>/logging	GET	application/json	• 200: Successfully returns Log Levels of all SCP microservices • 404: No SCP Log levels record found for microservice

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Table 2-185 (Cont.) Retrieving all Service Level Logs

Resource URI	HTTP Method	Content Type	Response Codes
http://<ip>:<port>/ocscp/scpc-configuration/v1/<microservice-name>/logging	PUT	application/json	• 200: Successfully returns Log Levels of all SCP microservices • 400: Request Body is empty for service • 404: No SCP Log levels record found for microservice

> **Note**
>
> The following microservices are supported: `scp-worker`, `scpc-notification`, `scpc-configuration`, `scpc-audit`, `scpc-subscription`, and `scpc-loadmanager`.

Response Body of GET Method for all Service Level Logs:

```
[
  {
    "scpc-audit": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
      }
    },
    "scpc-notification": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
      }
    },
    "scpc-subscription": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
```


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```
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
      }
    },
    "scpc-configuration": {
      "appLogLevel": "INFO",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
      }
    },
    "scp-worker": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "ERROR"
      }
    },
    "scp-cache": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
      }
    }
  },
  "scp-load-manager": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
```


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```
      }
    },
    "scp-nrfproxy-oauth": {
      "appLogLevel": "WARN",
      "packageLogLevel": [
        {
          "packageName": "library",
          "logLevelForPackage": "OFF"
        }
      ],
      "logRateControl": {
        "rate": 100,
        "logLevel": "OFF"
      }
    }
  }
]
```

Response Body of GET Method at Service Level Logs:

```
{
  "appLogLevel": "INFO",
  "packageLogLevel": [
    {
      "logLevelForPackage": "library",
      "packageName": "OFF"
    }
  ],
  "logRateControl": {
    "rate": 100,
    "logLevel": "OFF"
  }
}
```

Response Body of PUT Method at Service Level Logs:

```
{
  "appLogLevel": "INFO",
  "packageLogLevel": [
    {
      "logLevelForPackage": "library",
      "packageName": "OFF"
    }
  ],
  "logRateControl": {
    "rate": 100,
    "logLevel": "OFF"
  }
}
```


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Table 2-186 Logging

Attribute Name	Data Type	Constraints	Default Values	Description
appLogLevel	string	INFO,DEBUG,WARN,ERROR, TRACE, RX_TX_MSG_INFO	WARN	Specifies the log level of the application. **Note**: • WARN is the default log level of SCP-Load-Manager, SCP-nrfProxy-oauth, SCP-nrfProxy, SCP-Cache, SCP-Worker, and SCP-Mediation. • INFO is the default log level of SCPC-Audit, SCPC-Configuration, SCPC-Subscription, SCPC-Notification, and SCPC-Alternate-Resolution. • The TRACE log level is supported by SCPC-Notification, SCPC-Audit, SCP-Load-Manager, and SCP-Cache. • The RX_TX_MSG_INFO log level is supported only by SCP-Worker.
packageLogLevel	array (PackageLogLevel)	-	See Table 2-187 .	Specifies a list of individual packages and their respective log levels
logRateControl	SeeTable 2-188	See Table 2-188	See Table 2-188	Specifies the log levels of the application to support rate control.

Table 2-187 PackageLogLevel

Attribute Name	Data Type	Constraints	Default Values	Description
packageName	string	root	root	Specifies the name of the package.
logLevelForPackage	string	INFO,DEBUG,WARN,ERROR,FATAL,OFF,TRACE	WARN	Specifies the log level for the given package.

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Table 2-188 LogRateControl

Attribute Name	Data Type	Constraints	Default Values	Description
rate	Integer	1-1000	100	Specifies the average number of logs per second that should be allowed. **Note**: The default log rate change to 100 is applied only during installation, not when upgrading.
logLevel	string	ERROR,WARN,INFO,DEBUG,OFF	OFF	Specifies the log level to control log rate.

The following table describes log rate impact based on the log levels:

Table 2-189 Log Rate Impact Based on Log Levels

AppLogLevel	Rate Control LogLevel	Log Levels Controlled by Defined Rate per Second	Log Levels Not Impacted	Results
ERROR	OFF	NONE	FATAL/ERROR	All ERROR messages are delivered.
WARN	OFF	NONE	FATAL/ERROR/WARN	All ERROR/WARN messages are delivered.
INFO	OFF	NONE	FATAL/ERROR/WARN/INFO	All ERROR/WARN/INFO messages are delivered.
DEBUG	OFF	NONE	FATAL/ERROR/WARN/INFO/DEBUG	All ERROR/WARN/INFO/DEBUG messages are delivered.
ERROR	ERROR	ERROR	FATAL	All ERROR logs are controlled based on the configured rate per second, and any FATAL messages are delivered with no limitation.
WARN	ERROR	ERROR/WARN	FATAL	ERROR/WARN messages are controlled by the filter, and any FATAL messages are delivered with no limitation.
INFO	ERROR	ERROR/WARN/INFO	FATAL	Logs are controlled together (INFO+WARN+ERROR) at the configured rate per second, and any FATAL messages are delivered with no limitation.
DEBUG	ERROR	ERROR/WARN/INFO/DEBUG	FATAL	ERROR/WARN/INFO/DEBUG messages are controlled by the filter, and any FATAL messages are delivered with no limitation.
ERROR	WARN	NONE	FATAL/ERROR	All ERROR messages are delivered.
WARN	WARN	WARN	FATAL/ERROR	WARN messages are controlled by the filter, and any ERROR/FATAL messages are delivered with no limitation.

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Table 2-189 (Cont.) Log Rate Impact Based on Log Levels

AppLogLevel	Rate Control LogLevel	Log Levels Controlled by Defined Rate per Second	Log Levels Not Impacted	Results
INFO	WARN	WARN/INFO	FATAL/ERROR	WARN/INFO messages are controlled by the filter, and any ERROR/FATAL messages are delivered with no limitation.
DEBUG	WARN	WARN/INFO/ DEBUG	FATAL/ERROR	WARN/INFO/DEBUG messages are controlled by the filter, and any ERROR/FATAL messages are delivered with no limitation.
ERROR	INFO	NONE	FATAL/ERROR	All ERROR messages are delivered.
WARN	INFO	NONE	FATAL/ERROR/WARN	All ERROR/WARN messages are delivered.
INFO	INFO	INFO	FATAL/ERROR/WARN	INFO logs are controlled as per the configured rate per second. INFO logs (WARN/ERROR/FATAL) would continue to be delivered.
DEBUG	INFO	INFO/DEBUG	FATAL/ERROR/WARN	INFO/DEBUG logs are controlled as per the configured rate per second. WARN/ERROR/FATAL logs would continue to be delivered.
ERROR	DEBUG	NONE	FATAL/ERROR	All ERROR messages are delivered.
WARN	DEBUG	NONE	FATAL/ERROR/WARN	All ERROR/WARN essages are delivered.
INFO	DEBUG	NONE	FATAL/ERROR/WARN/INFO	All ERROR/WARN/INFO messages are delivered.
DEBUG	DEBUG	DEBUG	FATAL/ERROR/WARN/INFO	DEBUG logs are controlled as per the configured rate per second. INFO/WARN/ERROR/FATAL logs would continue to be delivered.
ERROR/WARN/ INFO/DEBUG	TRACE	TRACE	FATAL/ERROR/WARN/INFO	If any or all TRACE logs are controlled as per the configured rate per second, DEBUG/INFO/ WARN/ERROR/FATAL logs would continue to be delivered.

Sample JSON Format with Default Value

```
curl -X 'PUT' \
 'http://localhost:8081/ocscp/scpc-configuration/v1/scp-worker/logging' \


-H 'accept: application/json' \
 -H 'Content-Type: application/json' \
 -d '{
 "appLogLevel": "WARN",
 "packageLogLevel": [
```


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```
  {
   "packageName": "library",
   "logLevelForPackage": "OFF"
  }
 ],
 "logRateControl": {
  "rate": 100,
  "logLevel": "OFF"
 }
}'
```

Sample JSON Format with logLevel Enabled

```
curl -X 'PUT' \
 'http://localhost:8081/ocscp/scpc-configuration/v1/scp-worker/logging' \


-H 'accept: application/json' \
 -H 'Content-Type: application/json' \
 -d '{
 "appLogLevel": "WARN",
 "packageLogLevel": [
  {
   "packageName": "<some-library-name>",
   "logLevelForPackage": "ERROR"
  }
 ],
 "logRateControl": {
  "rate": 100,
  "logLevel": "ERROR"
 }
}'
```

Log levels during deployment

The default log levels of SCP Services can be set during deployment time as below:

```
# ********* LOG LEVELS OF ALL SERVICES ********* #
  serviceLogLevels:
    scpcAudit: &auditLogLevelRef INFO
    scpcConfiguration: &configLogLevelRef INFO
    scpcSubscription: &subsLogLevelRef INFO
    scpcNotification: &notifLogLevelRef INFO
    scpcAlternateResolution: &alternateResolutionLogLevelRef INFO
    scpcLoadManager: &loadManagerLogLevelRef WARN
    scpNrfProxyOauth: &nrfProxyOauthLogLevelRef WARN
    scpNrfProxy: &nrfproxyLogLevelRef WARN
    scpCache: &cacheLogLevelRef WARN
    scpWorker: &workerLogLevelRef WARN
    scpMediation: &mediationLogLevelRef WARN
    scpMediationTest: &mediationTestLogLevelRef WARN
# ******************** END ******************** #
```


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> **Note**
>
> The variables start with **&** are reference variables that must not be modified.

Changing log levels from internal config pod

The log levels can be changed form inside config pod.

Step: curl -X GET "http://localhost:8081/ocscp/scpc-configuration/v1/all/logging" -H "accept: application/json" or to get log level of particular service. curl -X GET "http://localhost:8081/ocscp/scpc-configuration/v1/<microservice-name>/logging" -H "accept: application/json" Step3: To change log level of a service. Updating all services(PUT ALL) at once not supported. curl -X PUT "http://localhost:8081/ocscp/scpc-configuration/v1/<microservice-name>/logging" -H "accept: application/json" -H "Content-Type: application/json" -d "{\"appLogLevel\":\"warn\",\"packageLogLevel\":[{\"packageName\":\"library\",\"logLevelForPackage\":\"OFF\"}]}"

1. Execute the following command into config pod:

   ```
   kubectl exec -it <config_pod_name> -n <namspace> bash
   ```

2. Check log levels of all services as follows:

   ```
   curl -X GET "http://localhost:8081/ocscp/scpc-configuration/v1/all/
   logging" -H "accept: application/json"
   ```

3. Get log level of particular service as follows:

   ```
   curl -X GET "http://localhost:8081/ocscp/scpc-configuration/v1/
   <microservice-name>/logging" -H "accept: application/json"
   ```

4. To change log level of a service. Updating log level for all the services at once (PUT ALL) is not supported:

   ```
   curl -X PUT "http://localhost:8081/ocscp/scpc-configuration/v1/
   <microservice-name>/logging" -H "accept: application/json" -H "Content-
   Type: application/json" -d "{\"appLogLevel\":\"warn\",\"packageLogLevel\":
   [{\"packageName\":\"library\",\"logLevelForPackage\":\"OFF\"}]}"
   ```

For performing logging configurations using the CNC Console, see *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*.

2.18.1 Third Party Packages

Users should never enable DEBUG logs under high traffic conditions. DEBUG logs should only be enabled when the traffic rate is very low.

The following table lists the package names and the corresponding logs that each enables:

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Table 2-190 Log Packages and Their Corresponding Log Levels

Package Name	Log Enabled	Recommended	Notes
org	Enables logs for all packages that start with `org`.	No	Since it generates a lot of logs and may impact the performance of the service.
io	Enables logs for all packages that start with `io`.	No	Since it generates a lot of logs and may impact the performance of the service.
org.springframework	Enables logs related to the Spring Framework only.	Yes	NA
org.springframework.<subpackage>	Enables logging for specific subpackages of the Spring Framework.	Yes	NA
reactor.netty	Enables logging for Reactor Netty.	Yes	NA
reactor.netty.<subpackage>	Enables logging for specific subpackages of Reactor Netty.	Yes	NA
org.eclipse.jetty	Enables logging for Jetty-related components only.		NA
org.eclipse.jetty.<subpackage>	Enables logging for specific Jetty subpackages, such as: • org.eclipse.jetty.client • org.eclipse.jetty.http • org.eclipse.jetty.http2 • org.eclipse.jetty.io	Yes	NA
com.oracle.cgbu.jetty	Enables logging for Oracle Custom Jetty Client.	Yes	NA
com.oracle.cgbu.jetty.<subpackage>	Enables logging for specific subpackages of the Oracle Custom Jetty Client.	Yes	NA
com.zaxxer	Enables logging for HikariCP.	Yes	This component is used to manage DB connections

2.19 Fetching Release 16 Routing Rules

This section provides details about fetching routing information that is supported in Release 16 deployment. The following information is fetched for routing:

- List of resources required for retrieving routing information
- URI Query parameters supported by the GET method
- Data structures supported by the GET response body

For information about Release 16, see 3GPP TS 23.501 version 16.6.0 Release 16.

Resources

The following table describes the resource name to retrieve a collection of routing information.

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Table 2-191 Resource Name

Resource Name	Resource URI	HTTP Method	Description
routing-rules-r16	/ocscp/scpc-configuration/v1/routing-rules-r16	GET	Retrieves a collection or list of routing information (NfInstanceServices) configured in SCP. Use this API when Model C support is enabled in SCP. For information about enabling this feature, see *Oracle Communications Cloud Native Core, Service Communication Proxy Installation, Upgrade, and Fault Recovery Guide*.

Resource Definition

This resource fetches the routing information (NfInstanceServices) based on the query parameters.

If no query parameter is provided, all the routing information is returned.

Resource URI: `/ocscp/scpc-configuration/v1/routing-rules-r16`

Table 2-192 URI Query Parameters Supported by the GET Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
nfSetId	String	O	1	Indicates the nfSetId of the NF.
nfFqdn	FQDN	O	1	Indicates the FQDN of NF service.
nfType	NFType	O	1	Indicates the NF type of the NF for which routing information is fetched.
nfInstanceId	NfInstanceId	O	1	Identifies the NF instance for which routing information is fetched.
nfServiceType	NFService	O	1	Indicates NFService, for example, nudm-uecm, for which routing information is fetched.
nfIp	Ipv4Addr	O	1	Indicates the IPv4 address for which routing information is fetched.
nfServiceInstanceId	String	C	1	Indicates the NF Service Instance ID for which routing information is fetched. Use it with nfInstanceId.

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Note

- Supports only 0 to 3 query parameters.
- The valid combinations of 1 query parameter are as follows:
  - nfSetId
  - nfIp
  - nfFqdn
  - nfType
  - nfInstanceId
  - nfServiceType
- The valid combinations of 2 query parameters are as follows:
  - nfSetId + nfFqdn
  - nfSetId + nfIp
  - nfSetId + nfInstanceId
  - nfSetId + nfType
  - nfSetId + nfServiceType
  - nfFqdn + nfServiceType
  - NfIp+ nfServiceType
  - nfInstanceId + nfServiceInstanceId
- The valid combinations of 3 query parameters are as follows:
  - nfSetId + nfFqdn + nfServiceType
  - nfSetId + nfIp + nfServiceType
  - nfSetId + nfInstanceId + nfServiceInstanceId
- If there are more than 3 query parameters, these combinations are considered as invalid.

The following tables describe query parameters for Local and InterSCP.

Table 2-193 One Query Parameter for Local and InterSCP

Parameter	Local	InterSCP (Foreign)	Description
nfInstnaceId	Allowed	Allowed	Identifies the NF instance for which routing information is fetched.
nfSetId	Allowed	NA	Indicates the nfSetId of the NF.
nfType	Allowed	NA	Indicates the NF type of the NF for which routing information is fetched.
nfServiceType	Allowed	NA	Indicates NFService, for example, nudmuecm, for which routing information is fetched.
locality	NA	Allowed	Identifies the InterSCP unknown instance for which routing information is fetched.
nfFqdn	Allowed	Allowed	Indicates the FQDN of NF service.

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Table 2-193 (Cont.) One Query Parameter for Local and InterSCP

Parameter	Local	InterSCP (Foreign)	Description
nfIp	Allowed	Allowed	Indicates the IPv4 address for which routing information is fetched.

Two Query Parameter for Local and InterSCP

Table 2-194 Two Query Parameter for Local and InterSCP

Parameter	Local	InterSCP (Foreign)	Description
nfSetId + nfFqdn	Allowed	NA	nfSetId of the NF and FQDN of NF service.
nfSetId + nfIp	Allowed	NA	nfSetId of the NF and IPv4 address for which routing information is fetched.
nfSetId + nfInstnaceId	Allowed	NA	nfSetId of the NF and identity of the NF instance for which routing information is fetched.
nfSetId + nfType	Allowed	NA	nfSetId of the NF and the NF type for which routing information is fetched.
nfSetId + nfServiceType	Allowed	NA	nfSetId of the NF and NFService, for example, nudm-uecm, for which routing information is fetched.
nfFqdn + nfServiceType	Allowed	NA	FQDN of the NF service and the NF service type, for example, nudm-uecm, for which routing information is fetched.
nfIp+ nfServiceType	Allowed	NA	IPv4 address of the NF and the NF service type, for example, nudm-uecm, for which routing information is fetched.
nfInstanceId + nfServiceInstanceId	Allowed	NA	Identity of the NF instance and the NF Service Instance ID for which routing information is fetched. **Note**: To be used with nfInstanceId.
nfFqdn + locality	NA	Allowed	FQDN of NF service and identity of the InterSCP of unknown records for which routing information is fetched.
nfIp+ locality	NA	Allowed	IPv4 address of the NF and identity of the InterSCP of unknown records for which routing information is fetched.
nfInstanceId + locality	NA	Allowed	Identity of the NF instance and identity of the InterSCP of unknown records for which routing information is fetched.

Three Query Parameter for Local and InterSCP

Table 2-195 Three Query Parameter for Local and InterSCP

Parameter	Local	InterSCP (Foreign)	Description
nfSetId + nfFqdn + nfServiceType	Allowed	NA	Fetches SCP routing rules information for Release 16 using nfSetId, nfFqdn, and nfServiceType.
nfSetId + nfIp + nfServiceType	Allowed	NA	Fetches SCP routing rules information for Release 16 using nfSetId, nfIp, and nfServiceType.

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Table 2-195 (Cont.) Three Query Parameter for Local and InterSCP

Parameter	Local	InterSCP (Foreign)	Description
nfSetId + nfInstanceId + nfServiceInstanceId	Allowed	NA	Fetches SCP routing rules information for Release 16 using nfSetId, nfInstanceId, and nfServiceInstanceId.

Data Structures Supported by the GET Response Body on this Resource

The following tables describes the supported data type by the GET response body.

Table 2-196 Data Structures Supported by the GET Response Body

Data Type	P	Cardinality	Response Code	Description
array(NfInstanceServices)	M	1	200 OK	Indicates the list of routing rules (NfInstance Services) matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than three query parameters are provided.

NfInstanceServices

```
{
  local:  [
    {
     "kind":"NFInstanceServiceMapping",
     "spec":{
        "hosts":[
         "string"
        ],
      "nfType":"string",
      "nfSetsList":{
         nfSetIdList:["string"]
      },
      "nfInstanceId":"3faf2bbc-6e4a-2828-a507-a14ef8e1bc7b",
      "nfServiceToRouteMapping":{
         "nfServiceToRoutesListMap":{
            "default":{
               "hosts":[
                  "string"
               ],
               "destinations":[

               ]
            },
            "nnrf-nfm":{
               "hosts":[
                  "string"
               ],
               "destinations":[
                  {
                     "destWeight":{
                        "weight":0,
```


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```
                        "destination":{
                           "host":"string",
                           "port":{
                              "number":0
                           },
                           "http2MaxRequests":0

                        },
                        "isRemoteScp":false,
                        "ocscpc_load":0,
                        "ocscpw_priority":0,
                        "ocscpw_nf_instance_id":"string",
                        "ocscpw_service_instance_id":"string"
                     },
                     "serviceSetIds":null
                  }
               ]
            },
            "nnrf-disc":{
               "hosts":[
                  "string"
               ],
               "destinations":[
                  {
                     "destWeight":{
                        "weight":0,
                        "destination":{
                           "host":"string",
                           "port":{
                              "number":0
                           },
                           "http2MaxRequests":0
                        },
                        "isRemoteScp":false,
                        "ocscpc_load":0,
                        "ocscpw_priority":0,
                        "ocscpw_nf_instance_id":"string",
                        "ocscpw_service_instance_id":"string"
                     },
                     "serviceSetIds":null
                  }
               ]
            }
         }
      }
   },
   "metadata":{
      "name":"string",
      "namespace":"string"
   },
   "apiVersion":"string"
  ],
 foreign:
  [
    {
    "kind": "InterSCPRoutingInfo",
```


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```
    "spec": {
        "hosts": ["udm1svc.default.svc.cluster.local:8080",
"udm1svc.default.svc.cluster.local:8080-nudm-uecm",
        "192.168.2.143:8080-nudm-uecm",   "192.168.2.143:8080"],
        "locality": "Loc1",
        "nfSetIdList": [],
        "nfInstanceIdList": ["9faf1bbc-6e4a-4454-a507-a14ef8e1bc5b"],
        "primaryDestinationList": [{
            "weight": 100,
            "destination": {
                "host": "ocscp-localscp-worker.scpsvc.svc.cluster.local",
                "port": {
                    "number": 8000
                },
                "http2MaxRequests": 100000
            },
            "isRemoteScp": true,
            "ocscpc_load": 0,
            "ocscpw_priority": 0,
            "ocscpw_nf_instance_id": "3faf1bbc-6e4a-4454-a507-a14ef8e1bc5e",
            "ocscpw_service_instance_id": "f86b54b7-aef9-4c78-
b346-3bfb7f380811"
        }],
        "secondaryDestinationList": {}
    },
    "metadata": {
        "name": "interScpRoutingInfo",
        "namespace": "scpsvc"
    },
    "apiVersion": "v1"
   }
 ]

}
```


Example:

Successful Response1

```
$ curl -X GET "http://10.75.236.84:32360/ocscp/scpc-configuration/v1/routing-
rules-r16?nfType=NRF" -H "accept: */*"
{
  "local": [
    {
      "spec": {
        "nfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5a",
        "nfServiceToRouteMapping": {
          "nfServiceToRoutesListMap": {
            "default": {
              "hosts": [
                null
              ],
              "destinations": [
                {
                  "destinationInfo": {
                    "destination": {
```


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```
                        "port": {
                          "number": 80
                        }
                      },
                      "weight": 0,
                      "ocscpw_priority": 0,
                      "ocscpw_nf_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5a",
                      "ocscpw_service_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5a",
                      "ocscpc_load": 0
                    }
                  }
                ]
              },
              "nnrf-nfm": {
                "hosts": [
                  "nrf1svc.scpsvc.svc.cluster.local:8080-nnrf-nfm"
                ],
                "destinations": [
                  {
                    "destinationInfo": {
                      "destination": {
                        "host": "nrf1svc.scpsvc.svc.cluster.local",
                        "port": {
                          "number": 8080
                        },
                        "location": "MESH_EXTERNAL",
                        "ports": [
                          {
                            "number": 8080,
                            "protocol": "HTTP2",
                            "name": "http2"
                          }
                        ],
                        "resolution": "DNS"
                      },
                      "weight": 5000,
                      "ocscpw_priority": 0,
                      "ocscpw_nf_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5a",
                      "ocscpw_service_instance_id": "fe137ab7-740a-46ee-
aa5c-951806d77b01",
                      "ocscpc_load": 0
                    }
                  }
                ]
              },
              "nnrf-disc": {
                "hosts": [
                  "nrf1svc.scpsvc.svc.cluster.local:8080-nnrf-disc"
                ],
                "destinations": [
                  {
                    "destinationInfo": {
                      "destination": {
```


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```
                        "host": "nrf1svc.scpsvc.svc.cluster.local",
                        "port": {
                          "number": 8080
                        },
                        "location": "MESH_EXTERNAL",
                        "ports": [
                          {
                            "number": 8080,
                            "protocol": "HTTP2",
                            "name": "http2"
                          }
                        ],
                        "resolution": "DNS"
                      },
                      "weight": 5000,
                      "ocscpw_priority": 0,
                      "ocscpw_nf_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5a",
                      "ocscpw_service_instance_id": "fe137ab7-740a-46ee-
aa5c-951806d77b02",
                      "ocscpc_load": 0
                    }
                  }
                ]
              }
            }
          },
          "hosts": [
            null
          ],
          "nfSetsList": {
            "nfSetIdList": [
              "Reg1"
            ]
          },
          "nfType": "NRF"
        }
      },
      {
        "spec": {
          "nfInstanceId": "6faf1bbc-6e4a-2828-a507-a14ef8e1bc5b",
          "nfServiceToRouteMapping": {
            "nfServiceToRoutesListMap": {
              "default": {
                "hosts": [
                  null
                ],
                "destinations": [
                  {
                    "destinationInfo": {
                      "destination": {
                        "port": {
                          "number": 80
                        }
                      },
                      "weight": 0,
```


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```
                    "ocscpw_priority": 1,
                    "ocscpw_nf_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5b",
                    "ocscpw_service_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5b",
                    "ocscpc_load": 0
                  }
                }
              ]
            },
            "nnrf-nfm": {
              "hosts": [
                "nrf2svc.scpsvc.svc.cluster.local:8080-nnrf-nfm"
              ],
              "destinations": [
                {
                  "destinationInfo": {
                    "destination": {
                      "host": "nrf2svc.scpsvc.svc.cluster.local",
                      "port": {
                        "number": 8080
                      },
                      "location": "MESH_EXTERNAL",
                      "ports": [
                        {
                          "number": 8080,
                          "protocol": "HTTP2",
                          "name": "http2"
                        }
                      ],
                      "resolution": "DNS"
                    },
                    "weight": 5000,
                    "ocscpw_priority": 1,
                    "ocscpw_nf_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5b",
                    "ocscpw_service_instance_id": "fe137ab7-740a-46ee-
aa5c-951806d77b01",
                    "ocscpc_load": 0
                  }
                }
              ]
            },
            "nnrf-disc": {
              "hosts": [
                "nrf2svc.scpsvc.svc.cluster.local:8080-nnrf-disc"
              ],
              "destinations": [
                {
                  "destinationInfo": {
                    "destination": {
                      "host": "nrf2svc.scpsvc.svc.cluster.local",
                      "port": {
                        "number": 8080
                      },
                      "location": "MESH_EXTERNAL",
```


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```
                    "ports": [
                      {
                        "number": 8080,
                        "protocol": "HTTP2",
                        "name": "http2"
                      }
                    ],
                    "resolution": "DNS"
                  },
                  "weight": 5000,
                  "ocscpw_priority": 1,
                  "ocscpw_nf_instance_id": "6faf1bbc-6e4a-2828-a507-
a14ef8e1bc5b",
                  "ocscpw_service_instance_id": "fe137ab7-740a-46ee-
aa5c-951806d77b02",
                  "ocscpc_load": 0
                }
              }
            ]
          }
        }
      },
      "hosts": [
        null
      ],
      "nfSetsList": {
        "nfSetIdList": [
          "Reg1"
        ]
      },
      "nfType": "NRF"
    }
  }
 ],
 "foreign": []
}
```


Successful Response2:


```
$ curl -X GET "http://10.75.226.108:30701/ocscp/scpc-configuration/v1/routing-
rules-r16?nfType=AUSF&nfSetId=NONE" -H "accept: */*"
{
  "local": [
    {
      "spec": {
        "nfInstanceId": "8faf1bbc-6e4a-2828-a507-a14ef8e1bc5b",
        "nfServiceToRouteMapping": {
          "nfServiceToRoutesListMap": {
            "default": {
              "hosts": [
                "10.75.226.108:ip",
                "ausfsvc_fqdn"
              ]
            },
            "nausf-auth": {
```


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```
                    "hosts": [
                      "nrf2svc.scpsvc.svc.cluster.local:8080-nausf-auth"
                    ],
                    "destinations": [
                      {
                        "destinationInfo": {
                          "destination": {
                            "host": "nrf2svc.scpsvc.svc.cluster.local",
                            "port": {
                              "number": 8080
                            },
                            "location": "MESH_EXTERNAL",
                            "ports": [
                              {
                                "number": 8080,
                                "protocol": "HTTP2",
                                "name": "http2"
                              }
                            ],
                            "resolution": "DNS"
                          },
                          "weight": 5000,
                          "ocscpw_priority": 1,
                          "ocscpw_nf_instance_id": "8faf1bbc-6e4a-2828-a507-
a14ef8e1bc5b",
                          "ocscpw_service_instance_id": "fe137ab7-740a-46ee-
aa5c-951806d77b01",
                          "ocscpc_load": 0
                        }
                      }
                    ]
                  },
                  "nausf-sorprotection": {
                    "hosts": [
                      "nrf2svc.scpsvc.svc.cluster.local:8080-nausf-sorprotection"
                    ],
                    "destinations": [
                      {
                        "destinationInfo": {
                          "destination": {
                            "host": "nrf2svc.scpsvc.svc.cluster.local",
                            "port": {
                              "number": 8080
                            },
                            "location": "MESH_EXTERNAL",
                            "ports": [
                              {
                                "number": 8080,
                                "protocol": "HTTP2",
                                "name": "http2"
                              }
                            ],
                            "resolution": "DNS"
                          },
                          "weight": 5000,
                          "ocscpw_priority": 1,
```


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```
                    "ocscpw_nf_instance_id": "8faf1bbc-6e4a-2828-a507-
a14ef8e1bc5b",
                    "ocscpw_service_instance_id": "fe137ab7-740a-46ee-
aa5c-951806d77b02",
                    "ocscpc_load": 0
                  }
                }
              ]
            }
          }
        },
        "nfSetsList": {},
        "nfType": "AUSF"
      }
    }
  ],
  "foreign": []
}
```

Failure cases

If the number of query parameters is greater than 3.

```
$ curl -X GET "http://localhost:8081/ocscp/scpc-configuration/v1/routing-
rules-r16?nfType=NRF&nfServiceType=nnrf-
disc&nfIp=10.75.226.108&nfInstanceId=6faf1bbc-6e4a-4454-a507-a14ef8e1bc5a" -H
"accept: */*"
Error response for above curl Request:
Response Code: 400
Response Status: BAD_REQUEST
Response Body : { "title": "Bad Request", "status": "400", "detail": "Maximum
3 Query Parameters are allowed, please refer to the User Guide",
"instance": "/ocscp/scpc-configuration/v1/routing-rules-r16?
nfType=NRF&nfServiceType=nnrf-
disc&nfIp=10.75.226.108&nfInstanceId=6faf1bbc-6e4a-4454-a507-a14ef8e1bc5a",
"cause": "INVALID_MSG_FORMAT" }
Response Headers :
 connection: keep-alive  content-type: application/problem+json  date: Wed30
Dec 2020 07:16:52 GMT  transfer-encoding: chunked
```

If any invalid combination of query parameters is requested.

```
$ curl -X GET "http://localhost:8081/ocscp/scpc-configuration/v1/routing-
rules-r16?nfType=NRF&nfServiceType=nnrf-nfm" -H "accept: */*"
Error response for above curl Request:
Response Code: 400
Response Status: BAD_REQUEST
Response Body: { "title": "Bad Request", "status": "400", "detail":
"Requested combination of Query Parameters is not allowed, please refer to
the User Guide",
"instance": "/ocscp/scpc-configuration/v1/routing-rules-r16?
nfType=NRF&nfServiceType=nnrf-nfm", "cause": "INVALID_MSG_FORMAT" }


Response Headers :
```


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```
  connection: keep-alive  content-type: application/problem+json  date: Wed30
Dec 2020 07:16:52 GMT  transfer-encoding: chunked
```

2.20 Fetching Upgrade and Rollback Events

This section provides information about fetching upgrade and rollback event information.

Resources

The following table describes the resource name to retrieve the list of upgrade and rollback events.

Table 2-197 Upgrade and Rollback Resource Name

Resource Name	Resource URI	HTTP Method	Description
upgraderollbackevents	/ocscp/scpc-configuration/v1/upgraderollbackevents	GET	Retrieves a collection or list of upgrade and rollback events.

Resource Definition

This resource fetches upgrade or rollback events based on the query parameters.

If no query parameter is provided, all the events are returned.

Resource URI: `/ocscp/scpc-configuration/v1/upgraderollbackevents`

Table 2-198 URI Query Parameters Supported by the GET Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values
serviceName	String	O	1	Name of the service	• scpc-audit • scpc-configuration • scpc-notification • scpc-subscription • scp-worker Example: scpc-audit
event	String	O	1	Event to be filtered	• Pre_Upgrade_Started • Pre_Upgrade_Completed • Pre_Upgrade_Failed • Post_Upgrade_Started • Post_Upgrade_Completed • Post_Upgrade_Failed • Pre_Rollback_Started • Pre_Rollback_Completed • Pre_Rollback_Failed • Post_Rollback_Started • Post_Rollback_Completed • Post_Rollback_Failed Example: Pre_Upgrade_Started

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Table 2-198 (Cont.) URI Query Parameters Supported by the GET Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values
sourceRelease	String	O	1	Source release version for performing upgrade and rollback. The convention to identify a release is as follows: • 1.12.0 is identified as 101200 • 1.14.0 is identified as 101400	Any string followed the convention. Example: 101400
targetRelease	String	O	1	Target release version for performing upgrade and rollback. The convention to identify a release is as follows: • 1.15.0 is identified as 101500 • 22.1.0 is identified as 221000	Any string followed the convention. Example: 221000

Table 2-199 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(UpgradeRollbackEvent)	M	1	200 OK	List of events matching criteria.

Example Response

```
$ curl -X GET "curl -X GET "http://10.75.224.18:32054/ocscp/scpc-
configuration/v1/upgraderollbackevents" -H "accept: */*"" -H "accept: */*"
[
  {
    "serviceName": "scpc-configuration",
    "event": "Pre_Upgrade_Started",
    "sourceRelease": "011200",
    "targetRelease": "011300",
    "creationTimestamp": "2021-05-26T00:36:40.000+00:00"
  },
```


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```
{
  "serviceName": "scpc-configuration",
  "event": "Pre_Upgrade_Completed",
  "sourceRelease": "011200",
  "targetRelease": "011300",
  "creationTimestamp": "2021-05-26T00:40:55.000+00:00"
},
{
  "serviceName": "scpc-configuration",
  "event": "Post_Upgrade_Started",
  "sourceRelease": "011200",
  "targetRelease": "011300",
  "creationTimestamp": "2021-05-26T00:50:23.000+00:00"
},
{
  "serviceName": "scpc-configuration",
  "event": "Post_Upgrade_Completed",
  "sourceRelease": "011200",
  "targetRelease": "011300",
  "creationTimestamp": "2021-05-26T01:02:02.000+00:00"
},
{
  "serviceName": "scpc-configuration",
  "event": "Upgrade_Completed",
  "sourceRelease": "011200",
  "targetRelease": "011300",
  "creationTimestamp": "2021-05-26T01:17:15.000+00:00"
},
{
  "serviceName": "scp-worker",
  "event": "Pre_Upgrade_Started",
  "sourceRelease": "011200",
  "targetRelease": "011300",
  "creationTimestamp": "2021-05-26T01:31:13.000+00:00"
},
{
  "serviceName": "scpc-subscription",
  "event": "Pre_Upgrade_Started",
  "sourceRelease": "011300",
  "targetRelease": "011400",
  "creationTimestamp": "2021-05-26T04:01:25.000+00:00"
},
{
  "serviceName": "scpc-subscription",
  "event": "Pre_Upgrade_Started",
  "sourceRelease": "011300",
  "targetRelease": "011400",
  "creationTimestamp": "2021-05-26T04:15:43.000+00:00"
},
{
  "serviceName": "scpc-subscription",
  "event": "Pre_Upgrade_Started",
  "sourceRelease": "011300",
  "targetRelease": "011400",
  "creationTimestamp": "2021-05-26T04:28:42.000+00:00"
```


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```
  }
]
```

2.21 Updating HELM Configurable Parameters with REST APIs

This section provides REST API parameters required to update the Helm configurable options after SCP deployment.

Configuring Operations for PUT ALL Method

Request_Type: PUT ALL

URI: */ocscp/scpc-configuration/v1/tracing*

Message:

```
[{
  "msgTracingEnabled": true,
  "msgJsonBodyEnabled": false,
  "serviceName": "scp-worker"
}]
```

Table 2-200 REST API: PUT ALL Method

Parameter	Description	DataType	Value Range	Mandatory
msgTracingEnabled	Enable/Disable jaeger trace	Boolean	True/False	Yes
msgJsonBodyEnabled	Enable/Disable body decoding in jager traces	Boolean	True/False	Yes
serviceName	Name of the service to which tracing is applied	String (scp-worker)	scp-worker	Yes

Success Response

Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing*

Request Body:

```
[{
"msgTracingEnabled": true,
"msgJsonBodyEnabled": false,
"serviceName": "scp-worker"
}]
```

Response:

```
[{
  "msgTracingEnabled": true,
  "msgJsonBodyEnabled": false,
  "serviceName": "scp-worker"
}]
```

Error Response

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- Scenario 1: When the serviceName is anything else other than scp-worker
  Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing*

  Request Body:

  ```
  [{
       "msgTracingEnabled": true,
       "msgJsonBodyEnabled": false,
       "serviceName": "scp-workerbjasd"
       }]
  ```

  Response Header:

  Status Code: 400 Bad

  Request connection: keep-alive

  content-type: application+problem/json

  date: Mon, 15 Feb 2021 05:57:49 GMT

  transfer-encoding: chunked

  Response Body: `{ "title": "Invalid Service Name", "status": "400", "cause":"Invalid Service Name" }`
- Scenario 2: When the mandatory parameters are missing.
  Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing*

  Request Body:

  ```
  [{
       "bacd": true,
       "msgJsonBodyEnabled": false,
       "serviceName": "scp-workerbjasd"
       }]
  ```

  Response Body: `{ "status": "400", "error":"Bad Request" }`
- Scenario 3: When the mandatory parameters' keys are incorrect.
  Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing*

  Request Body:

  ```
  [{
       "bacd": true,
       "msgJsonBodyEnabled": false,
       "serviceNameasd": "scp-worker"
       }]
  ```

  Response Body:

  ```
   { "status": "400", "error":"Bad Request" }
  ```

Configuring Operations for PUT Single Method

Request_Type: PUT

URI: */ocscp/scpc-configuration/v1/tracing/{serviceName}*

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Table 2-201 Path Variable

Parameter	Description	DataType	Value Range
serviceName	Name of the service to which tracing is applied.	String	scp-worker

Message:

```
{
  "msgTracingEnabled": true,
  "msgJsonBodyEnabled": false,
  "serviceName": "scp-worker"
}
```

Table 2-202 REST API: PUT Single Method

Parameter	Description	DataType	Value Range	Mandatory
msgTracingEnabled	Enable/Disable jaeger trace	Boolean	True/False	Yes
msgJsonBodyEnabled	Enable/Disable json body trace	Boolean	True/False	Yes
serviceName	Name of the service to which tracing parameters are applied.	String	scp-worker	Yes

Success Response

Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing/scp-worker*

Request Body:

```
{
"msgTracingEnabled": true,
"msgJsonBodyEnabled": false,
"serviceName": "scp-worker"
}
```

Response:

```
{
  "msgTracingEnabled": true,
  "msgJsonBodyEnabled": false,
  "serviceName": "scp-worker"
}
```

Error Response

- Scenario 1: When the serviceName is anything else other than scp-worker and the service name does not match with the servicename in URI.
  Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing/scp-worker*

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Request Body:

```
{
     "msgTracingEnabled": true,
     "msgJsonBodyEnabled": false,
     "serviceName": "scp-workerbjasd"
     }
```

Response Header:

Status Code: 400 Bad Request

Request connection: keep-alive

content-type: application+problem/json

date: Mon, 15 Feb 2021 05:57:49 GMT

transfer-encoding: chunked

Response body:

```
  { "title": "Invalid Service Name", "status": "400",
    "cause":"Invalid Service Name" }
```

- Scenario 2: When the mandatory parameters are missing.
  Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing/scp-worker*

  Request Body:

```
{

     "msgJsonBodyEnabled": false,
     "serviceName": "scp-worker"
     }
     or
     {
     "msgTracingEnabled": true,
     "serviceName": "scp-worker"
     }
     or
     {
     "msgTracingEnabled": true,
     "msgJsonBodyEnabled": false,
     }
```

  Response Body:

```
 {  "status": "400", "cause":"<attribute-name> cannot be empty"
      }
```

- Scenario 3: When the mandatory parameters' keys are incorrect.
  Request URI: *http://<hostname>:<port>/ocscp/scpc-configuration/v1/tracing/scp-worker*

  Request Body:

```
     {
     "bacd": true,
```


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```
"msgJsonBodyEnabled": false,
"serviceNameasd": "scp-worker"
}
Response body:

     { "status": "400", "error":"Bad Request" }
```

Configuring Operations for GET Method

Request_Type: GET

URI: */ocscp/scpc-configuration/v1/tracing/{serviceName}* and */ocscp/scpc-configuration/v1/tracing*

Message:

```
[{
  "msgTracingEnabled": true,
  "msgJsonBodyEnabled": false,
  "serviceName": "scp-worker"
}]
```

Table 2-203 REST API: GET Method

Parameter	Description	DataType	Value Range
serviceName	Service Name to which tracing will be applied	String	scp-worker

Success Response

Request URI: */ocscp/scpc-configuration/v1/tracing/scp-worker*

Response body:

```
[{
  "msgTracingEnabled": true,
  "msgJsonBodyEnabled": false,
  "serviceName": "scp-worker"
}]
```

Error Response

Scenario 1: When the serviceName is anything else other than scp-worker

Request URI: */ocscp/scpc-configuration/v1/tracing/scp-worker-xyz*

Response body:

```
{ "title": "Invalid Service Name", "status": "400", "cause":"Invalid Service
Name" }
```

Supported HTTP Status Code

- 200 - In case of success
- 400 - In case of Bad Request or invalid serviceName

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- 404 - In case when serviceName is not found

Curl Commands

- GET:

```
curl -X GET -i 'http://<hostname>:<port>/ocscp/scpc-configuration/v1/
tracing/'
```

- PUT ALL:

```
curl -X PUT -H 'Content-Type: application/json' -i 'http://
<hostname>:<port>/ocscp/scpc-configuration/v1/tracing/' --data
'[{"msgTracingEnabled":true,"msgJsonBodyEnabled":false,"serviceName":"scp-
worker"}]'
```

- PUT Single:

```
curl -X PUT -H 'Content-Type: application/json' -i 'http://
<hostname>:<port>/ocscp/scpc-configuration/v1/tracing/scp-worker' --data
'{"msgTracingEnabled":true,"msgJsonBodyEnabled":false,"serviceName":"scp-
worker"}'
```

For information about HELM parameters, see the *Oracle Communications Cloud Native Core, Service Communication Proxy Installation, Upgrade, and Fault Recovery Guide*.

2.22 Configuring Alternate NF Group

This section provides the following Alternate NF Group REST API configurations:

- Resource URIs for the alternatenfgroup resource type.
- Types of data model.
- URI query parameters supported by GET, PUT, and DELETE methods.

Resources

The following table describes the resource URIs and the corresponding HTTP methods for the alternatenfgroup resource type.

Table 2-204 alternatenfgroup Resource Type

Resource Name	Resource URI	HTTP Method	Mandatory (M) or Optional(O)	Query Parameters	Description
alternatenfgroup	/ocscp/scpc-configuration/v1/alternatenfgroup/configuration	GET	O	• serviceProtoName • apiPrefix	Retrieves the alternate NF group configuration data that are configured for corresponding query parameters. Displays both statically configured and alternate NF group data determined from NF profiles.

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Table 2-204 (Cont.) alternatenfgroup Resource Type

Resource Name	Resource URI	HTTP Method	Mandatory (M) or Optional(O)	Query Parameters	Description
alternatenfgroup	/ocscp/scpc-configuration/v1/alternatenfgroup/configuration	PUT	O	NA	Configures the alternate NF group configuration data using the request body in the JSON format.
alternatenfgroup	/ocscp/scpc-configuration/v1/alternatenfgroup/configuration	DELETE	M	serviceProtoName	Removes the alternate NF group configuration data for corresponding query parameters.
alternatenfgroup	/ocscp/scpc-configuration/v1/alternatenfgroup/refreshdnssrvdata	PUT	O	NA	Refreshes the alternate NF group data when required.

Data Model

The following tables describe different data models required for configuring Alternate NF Group.

Table 2-205 AlternateNFGroupData

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Range or Supported Value	Description
dnsSRVConfiguration	AlternateNFGroupConfiguration	M	1	NA	The data type of the DNS SRV configuration.
array(dnsSrvRecords)	DNSSRVRecord	M	1	NA	This is the alternate NF group configuration data.

Table 2-206 AlternateNFGroupConfiguration

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Range or Supported Value	Description

serviceProtoName	String	M	1	Extract and validate as per SCP FQDN regex	The service proto name of the producer NF.
					The DNS SRV format:
					`_service._proto.name. ttl IN SRV priority weight port target.`
					`serviceProtoName represents _service._proto.name`

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Table 2-206 (Cont.) AlternateNFGroupConfiguration

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Range or Supported Value	Description
apiPrefix	String	O	1	NA	This is used while constructing destination URI. If empty or null, then the string is provided.

Table 2-207 DNSSRVRecord

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Range or Supported Value	Description
target	String	M	1	Validate as per SCP FQDN regex	Indicates the target NF type.
port	String	M	1	0-65535	Indicates the port number of the ipEndPoint attribute.
ttl	Long	O	1	30-86400 seconds	Determines the availability of data in the network and when the data can be removed. If the TTL value received is not within this range, then the default TTL value, which is 900s, is used as configured in the System Config table.
type	String	O	1	SRV	Identifies the record type.
dclass	String	O	1	IN	Defines DNS class values.
priority	Long	M	1	0-65535	Prioritizes the NF selection.
weight	Long	M	1	0-65535	Specifies a relative order or position for entries with the same priority. For more information, see RFC 2782.

Table 2-208 AlternateNFGroupRefreshData

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Range or Supported Value	Description
refreshAll	String	O	1	true or false	Indicates whether all the alternate NF group data should be refreshed or not.

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Table 2-208 (Cont.) AlternateNFGroupRefreshData

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Range or Supported Value	Description
spnlist	Array	O	1	NA	Provides the list of service proto names to be refreshed.

Table 2-209 ProblemDetails

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
type	String	O	1	Identifies the problem type.
title	String	M	1	Summarizes the problem type.
status	String	M	1	Indicates the HTTP status code for the occurrence of the problem type.
detail	String	M	1	Provides a description specific to the occurrence of the problem type.
instance	String	M	1	Identifies the specific occurrence of this problem type.
cause	String	M	1	Defines the application error cause specific to the occurrence of this problem type.

Request Body

The following table describes the AlternateNFGroupConfiguration data type.

Table 2-210 AlternateNFGroupConfiguration Data Type

Data Type	Description
AlternateNFGroupConfiguration	Indicates the data type of the DNS SRV configuration. For more information, see Table 2-206.

Response Body

The response body data model varies based on the REST operation status. For more information, see the information provided in the subsequent tables.

Table 2-211 Response Body Data Type

Data Type	Description
DNSSRVData	This is the alternate NF group configuration data.
None	Empty body

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Resource Definition

This section describes GET, PUT, and DELETE resource types supported by Alternate NF Group.

GET API

This resource fetches the alternate NF group configuration based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/alternatenfgroup/configuration

Request Body

There is no request body in GET Request API.

Table 2-212 URI Query Parameters Supported by the GET Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
serviceProtoName	String	O	1	The service proto name of the producer NF.
apiPrefix	String	O	0..1	Optional path segments used to construct the {apiRoot} variable of the different API URIs as described in 3GPP 29.501.

> **Note**
>
> If none of the aforementioned query parameters are provided, all the user provisioned serviceProtoName data are returned.

Table 2-213 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(DNSSRVData)	M	1	200 OK	This is the alternate NF group configurations data.
ProblemDetails	M	1	400 BAD REQUEST	This data structure is sent if the query parameters validation fails.
ProblemDetails	M	1	404 NOT FOUND	This data structure is sent when no matching entry is found. For information about the ProblemDetails structure, see 3GPP TS 29.571.

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> **Note**
>
> The GET request only retrieves the records provisioned by users.

The following examples are of successful and failed responses.

Success response:

```
curl -X GET "http://10.75.212.178:31147/ocscp/scpc-configuration/v1/
alternatenfgroup/configuration?
serviceProtoName=_http._tcp.nf2stub.scpsvc.svc" -H "accept: */*"

Response Body:
[{
    "dnsSRVConfiguration": {
        "serviceProtoName": "_http._tcp.nf2stub.scpsvc.svc",
        "apiPrefix": "USEast"
    },
    "dnsSrvRecords": [{
            "target": "nf2stub.scpsvc.svc",
            "port": 8080,
            "ttl": 86400,
            "type": "SRV",
            "dclass": "IN",
            "priority": 1,
            "weight": 60
        },
        {
            "target": "nf21stub.scpsvc.svc",
            "port": 8080,
            "ttl": 86400,
            "type": "SRV",
            "dclass": "IN",
            "priority": 20,
            "weight": 20
        },
        {
            "target": "nf22stub.scpsvc.svc",
            "port": 8080,
            "ttl": 86400,
            "type": "SRV",
            "dclass": "IN",
            "priority": 10,
            "weight": 20
        }
    ]
}]
```

Failure response: If the alternate NF group data is not configured.

```
curl -X GET "http://10.75.212.178:31147/ocscp/scpc-configuration/v1/
alternatenfgroup/configuration?
serviceProtoName=_http._tcp.nf23432stub.scpsvc.svc" -H "accept: */*"
```


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```
{
  "title": "Not Found",
  "status": "404",
  "detail": "Alternate NF Group Configuration not found against given query
parameters",
  "instance": "/ocscp/scpc-configuration/v1/alternatenfgroup/configuration?
serviceProtoName=_http._tcp.nf23432stub.scpsvc.svc",
  "cause": "DATA_NOT_FOUND"
}
```

PUT API

This resource adds the alternate NF group configuration using the request body.

Resource URI: /ocscp/scpc-configuration/v1/alternatenfgroup/configuration

Table 2-214 Data Structures Supported by the PUT Request Body

Data Type	Description
AlternateNFGroupConfiguration	Indicates the data type of the DNS SRV configuration. For more information, see Table 2-206.

Table 2-215 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
AlternateNFGroup Configuration	M	1	200 OK	This response is used when an existing record is updated.
AlternateNFGroup Configuration	M	1	201 CREATED	This response is used when a new entry is created.
ProblemDetails	M	1	400 BAD REQUEST	This response is used when the request body validation fails. For example, when serviceProtoName is missing in the request body. For information about the ProblemDetails structure, see 3GPP TS 29.571.

> **Note**
>
> The PUT request for Alternate NF Group is allowed only when the entry for that spn is already present in DNS SERVER otherwise, it gives a 404 Not Found error for such spn.

The following examples are of successful and failed responses.

Success response:

```
curl -X PUT "http://10.75.225.82:30361/ocscp/scpc-configuration/v1/
alternatenfgroup/configuration" -H "accept: */*" -H "Content-Type:
```


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```
application/json" -d "{
    "apiPrefix": "USEast",
    "serviceProtoName": "_http._tcp.nf2stub.scpsvc.svc"
}"

Response:
{
  "serviceProtoName": "_http._tcp.nf2stub.scpsvc.svc",
  "apiPrefix": "USEast"
}
200 OK
```

Failure response: Invalid request body

```
curl -X PUT "http://10.75.225.82:31578/ocscp/scpc-configuration/v1/
alternatenfgroup/configuration" -H "accept: */*" -H "Content-Type:
application/json" -d "{
    "apiPrefix": "USEast",
    "serviceProtoName": "_http.npcf.rcklca63.we.pcf.5gc.oper.com"
}"

Response:
{
  "title": "Bad Request",
  "status": "400",
  "detail": "Invalid request body received, please refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/alternatenfgroup/configuration",
  "cause": "INVALID_REQUEST_BODY"
}
```

DELETE API

This resource removes the alternate NF group configuration based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/alternatenfgroup/configuration

Table 2-216 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
None			200 OK	This response is used when the query is successful.
Problem Details	M	1	404 NOT FOUND	This response is used when no matching entry is found. For information about the ProblemDetails structure, see 3GPP TS 29.571.
Problem Details	M	1	400 BAD REQUEST	This response is used when serviceProtoName is missing in the request. For information about the ProblemDetails structure, see 3GPP TS 29.571.

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> **Note**
>
> The DELETE request body removes only the records provisioned by users.

The following examples are of successful and failed responses.

Success response:

```
curl -X DELETE "http://10.75.212.178:31147/ocscp/scpc-configuration/v1/
alternatenfgroup/configuration?
serviceProtoName=_http._tcp.nf2stub.scpsvc.svc" -H "accept: */*"

200 OK
```

Failure response: When no matching entry is found.

```
curl -X DELETE "http://10.75.212.178:31147/ocscp/scpc-configuration/v1/
alternatenfgroup/configuration?
serviceProtoName=_http._tcp.nf21232stub.scpsvc.svc" -H "accept: */*"

{
  "title": "Not Found",
  "status": "404",
  "detail": "Alternate NF Group Configuration not found against given query
parameters",
  "instance": "/ocscp/scpc-configuration/v1/alternatenfgroup/configuration?
serviceProtoName=_http._tcp.nf21232stub.scpsvc.svc",
  "cause": "DATA_NOT_FOUND"
}
```

REFRESH DNS Data API

This resource refreshes the alternate NF group configuration based on the request body parameters.

Resource URI: /ocscp/scpc-configuration/{version}/alternatenfgroup/refreshdnssrvdata

Table 2-217 Data Structures Supported by the PUT Request Body

Data Type	Description
AlternateNFGroupRefreshData	Indicates whether all the alternate NF group data should be refreshed or not. For more information, see Table 2-208.

The following examples are of successful and failed responses.

Success response:

```
curl -X PUT "http://10.75.212.178:31147/ocscp/scpc-configuration/v1/
alternatenfgroup/refreshdnssrvdata" -H "accept: */*" -H "Content-Type:
application/json" -d "{
  "refreshAll": "true",
  "spnlist": [
```


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```
  ]
}"

Response:
{
  "refreshAll": "true",
  "spnlist": []
}
200 OK
```

Failure response: Invalid request body

```
curl -X PUT "http://10.75.212.178:32137/ocscp/scpc-configuration/v1/
alternatenfgroup/refreshdnssrvdata" -H "accept: */*" -H "Content-Type:
application/json" -d "{"spnlist":[]}"

{
  "title": "Bad Request",
  "status": "400",
  "detail": "Invalid request body received, please refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/alternatenfgroup/
refreshdnssrvdata",
  "cause": "INVALID_REQUEST_BODY"
}
```

2.23 Configuring Server Header

This section describes the Server Header REST API configuration.

Resources

The following table describes the resource name to retrieve and update server header configurations in SCP.

Table 2-218 Resource Name

Resource Name	Resource URI	HTTP Method	Description
serverheader	/ocscp/scpc-configuration/{version}/serverheader	GET	Retrieves server header configurations in SCP.
serverheader	/ocscp/scpc-configuration/{version}/serverheader	PUT	Updates server header configurations in SCP.

Data Model

The following table describes different types of server header parameters.

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Table 2-219 Types of Server Header Parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
enableEnhanceServerHeaderBehavior	Boolean	M	false	Enables or disables the enhanced server header behavior. Possible values are: true, false, 1, or 0. The enhanced server header format: List of <NF-Type>-<NF-Instance Id> in reverse order of tried producers. Producer generated error: <NF-Type2>-<NF-Instance Id2> <NF-Type1>-<NF-Instance Id1> SCP generated error: SCP-<scp fqdn> <NF-Type2>-<NF-Instance Id2> <NF-Type1>-<NF-Instance Id1>
sideCarProxyServerHeader	List<String>	M	Empty List	Indicates the list of strings (example: envoy, istio-envoy, and so on)/string patterns(example: e.*y, and so on) to identify from server header value if error response is generated by side car proxy. If response received by SCP carries any of the configured strings or patterns in sideCarProxyServerHeader and response code matches with any of the configured sideCarProxyStatusCode, it will be treated as sidecar/service mesh generated error. It is applicable to both enableEnhanceServerHeaderBehavior and enableEnhanceServerHeaderBehaviorV2. **Note**: This parameter allows the string regex patterns and empty list.

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Table 2-219 (Cont.) Types of Server Header Parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
addServerHeaderInProducerResponse	Boolean	M	false	Enables or disables the addition of a server header in producer NF-generated error responses by SCP during the default behavior (which means both enableEnhanceServerHeaderBehavior and enableEnhanceServerHeaderBehaviorV2 are false). If set to TRUE • SCP will add a server header with the producer's information if a server header is not present in the error response received from the upstream peer. If set to FALSE • SCP will not add a server header with the producer's information if the server header is not present in the error response received from the upstream peer. The received response is passed as it is to the consumer. Possible values are: true, false, 1, or 0.
sideCarProxyStatusCode	List<Integer>	M	503	Indicates the list of server header status codes (503 and so on)/class of status code (5xx,4xx) to identify if error response is generated by side car proxy. If response received by SCP carries any of the configured strings or patterns in sideCarProxyServerHeader and response code matches with any of the configured sideCarProxyStatusCode, it will be treated as sidecar/service mesh generated error. Supported range or patterns are: 5xx and 4xx Value range: 400-599 Empty list is allowed. Applicable to both enableEnhanceServerHeaderBehavior and enableEnhanceServerHeaderBehaviorV2.

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Table 2-219 (Cont.) Types of Server Header Parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
enableEnhanceServerHeaderBehaviorV2	Boolean	M	false	Enables or disables the new custom behavior. The behavior enabled is mutually exclusive with enableEnhanceServerHeaderBehavior. Server header format: List of <NF-Type>-<NF-Instance Id> in reverse order of tried producer NFs. Producer NF generated error format: <NF-Type2>-<NF-Instance Id2> <NF-Type1>-<NF-Instance Id1> • If SCP receives at least one server header from any one of the attempted producer NFs, SCP adds the same server header to the final error response. • If SCP receives server headers from multiple attempted producer NFs, SCP adds the received server headers in the reverse order to the final error response. SCP generated error format: SCP-<scp fqdn> SCP adds "SCP-<scp fqdn>" to the server header in the following scenarios: • In all the self-generated errors, such as connection failures, timeout, unknown errors, and so on. • If the error is received from the service mesh sidecar

Resource Definition

GET REST API

URL: curl -X GET "http://10.75.236.15:30862/ocscp/scpc-configuration/v1/serverheader" -H "accept: application/json"

Request URI: /ocscp/scpc-configuration/{version}/serverheader

Example of a curl request:

```
curl -X GET "http://10.75.236.15:30862/ocscp/scpc-configuration/v1/serverheader"
-H "accept: application/json"
```


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Response Data Structure:

```
Response of "curl -X GET "http://10.75.236.15:30862/ocscp/scpc-
configuration/v1/serverheader" -H "accept: application/json""
```

```
{
       "enableEnhanceServerHeaderBehavior": false,
       "sideCarProxyServerHeader": [],
       "addServerHeaderInProducerResponse": false,
       "enableEnhanceServerHeaderBehaviorV2": false,
       "sideCarProxyServerHeaderStatusCode": ["503"]
    }
```

PUT REST API

Request URI: /ocscp/scpc-configuration/{version}/serverheader

Example of a curl command:

```
curl -X PUT "http://10.75.236.15:30862/ocscp/scpc-configuration/v1/
serverheader" -H "accept: application/json" -H "Content-Type: application/
json" -d "

{\"enableEnhanceServerHeaderBehavior\":false,\"sideCarProxyServerHeader\":

[\"envoy\"],\"addServerHeaderInProducerResponse\":false,\"enableEnhanceServerH
eaderBehaviorV2\":false,\"sideCarProxyServerHeaderStatusCode\":
[\"503\",\"4xx\"]}"
```

Understanding sideCarProxyServerHeader and sideCarProxyStatusCode Configurations

This scenario explains `sideCarProxyServerHeader` and `sideCarProxyStatusCode` configurations based on the following conditions:

- Alternate routing is enabled.
- Producer NF, for example, chf1, responds with “503” and server header as “envoy”. chf2 responds with 503 without server header.

Sample SCP server header configuration:

```
{
"enableEnhanceServerHeaderBehavior": false,
"sideCarProxyServerHeader": ["e*y", "istio*y"],
"addServerHeaderInProducerResponse": false,
"enableEnhanceServerHeaderBehaviorV2": true,
"sideCarProxyStatusCode": [
"5xx", "4xx"
]
}
```

Server header behavior: SCP responds to consumer NF with "503" and "envoy" as server header.

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In the above scenario, the received error response is not considered as service mesh error because the configured `sideCarProxyServerHeader` regex is not matching with the received server header. This mismatch occurs when the configured "e*y" mismatches with the received server header "envoy".

Where,

- e*: This means zero or more occurrences of the letter e.
- y: This means exactly one occurrence of the letter y.

The pattern e*y does not match "envoy" because there are characters, n, v, and o, between e and y, which are not accounted for by the pattern e*y.

If you want to match "envoy", then you can use the following regex:

- "e.*y"
- "envoy"

In the above mentioned regex configurations, SCP treats the received error response as service mesh error and adds SCP's FQDN in the server header and sends it to the consumer NF.

2.24 Configuring SBI Message Priority

This section provides Service Based Interface (SBI) Message Priority REST API configurations to support SCP behavior for SBI Messages priority headers received in message requests and responses.

Resources

The following table describes the resource name to retrieve, add, update, and remove SBI message priority information based on the query parameters.

Table 2-220 Resource Name

Resource Name	Resource URI	HTTP Method	Description
sbi-message-priority	/ocscp/scpc-configuration/v1/sbi-message-priority	GET	Retrieves the SBI Message Priority configured in SCP.
sbi-message-priority	/ocscp/scpc-configuration/v1/sbi-message-priority	PUT	Adds and updates the SBI Message Priority configured in SCP.
sbi-message-priority	/ocscp/scpc-configuration/v1/sbi-message-priority	PATCH	Updates or modifies the SBI Message Priority configured in SCP.
sbi-message-priority	/ocscp/scpc-configuration/v1/sbi-message-priority	DELETE	Removes the configured SBI Message Priority from SCP.

Data Model

Request Body

The following table describes the field names of the SbiMsgPriorityWrapper data type.

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Table 2-221 SbiMsgPriorityWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
ruleName	String	M	default	Indicates the unique name for ruleName.
nfServiceName	String	M	*	Indicates all 3GPP defined NF Services as per 3GPP TS29.510.
httpMethods	String	M	*	Indicates the list of String HTTP methods, such as GET, POST, PUT, PATCH, DELETE, and OPTIONS.
messageType	String	M	*	Indicates the incoming request type. Possible values are: REQUEST or RESPONSE.
enableAssignPriority	boolean	O	false	Indicates whether the SMP header is available or not in the ingress message.
assignPriority	String	O	16	Indicates the "3gpp-Sbi-Message-Priority" header value. The value range is between 0 and 31.
enableOverridePriority	boolean	O	false	Indicates whether the SMP header is available or not in the ingress message.
overridePriority	String	O	16	Indicates the "3gpp-Sbi-Message-Priority" header value.

* indicates that the default value is applicable for all the possible message priority rules.

Response Body

The following table describes response body data models that varies based on the REST operation status.

Table 2-222 Response Body Data Type

DataType	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(SbiMsgPriorityWrapper)	M	1	200 OK	Indicates the list of Message Priorities (SbiMsgPriorityWrapper) that matches the criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than three query parameters are provided.

JSON Format

```
[
  {
    "ruleName": "default",
    "data": {
      "nfServiceName": "*",
      "httpMethods": [
        "*"
      ],
```


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```
      "messageType": [
       "*"
      ],
      "enableAssignPriority": false,
      "assignPriority": 16,
      "enableOverridePriority": false,
      "overridePriority": 16,
      "nfType": "*"
    }
  },{
   ....
   ...
  }
]
```

Resource Definition

GET REST API

This resource fetches the message priority (SBIMessagePriorityBean) based on the query parameters.

If no query parameter is provided, all the message priority are returned.

Resource URI: /ocscp/scpc-configuration/v1/sbi-message-priority

The following table describes the URI query parameters supported by the GET method on this resource.

Table 2-223 URI Query Parameters Supported by the GET Method

Field Name	DataType	Mandatory (M) or Optional(O)	Description
ruleName	String	O	Indicates the name of ruleName.
nfServiceName	String	O	Indicates all 3GPP defined NF Services as per 3GPP TS29.510 (callback and custom).
httpMethod	String	O	Indicates HTTP methods, such as GET, POST, PUT, PATCH, DELETE, and OPTIONS.
messageType	String	O	Indicates the message request or response. Possible values are: REQUEST or RESPONSE.

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> **Note**
>
> The valid combination of query parameters is as follows:
>
> - ruleName
> - nfServiceName
> - httpMethod
> - messageType
> - nfServiceName + httpMethod + messageType
> - nfServiceName + httpMethod
> - nfServiceName + messageType
> - httpMethod + messageType

Table 2-224 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(SbiMsgPriorityWrapper)	M	1	200 OK	Indicates the list of Message Priority (SbiMsgPriorityWrapper) that matches the criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than 3 query parameters are provided.

Example

Successful response - 1

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority" -H "accept: application/json"
[
  {
    "ruleName": "default",
    "data": {
      "nfServiceName": "*",
      "httpMethods": [
        "*"
      ],
      "messageType": [
       "*"
      ],
      "enableAssignPriority": false,
      "assignPriority": 16,
      "enableOverridePriority": false,
      "overridePriority": 16,
      "nfType": "*"
    }
  },
```


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```
  {
    "ruleName": "udm_test",
    "data": {
      "nfServiceName": "nudm_uecm",
      "httpMethods": [
        "GET",
        "POST"
      ],
      "messageType":
       [
        "service-request",
        "service-response"
       ],
      "enableAssignPriority": true,
      "assignPriority": 10,
      "enableOverridePriority": false,
      "overridePriority": -1,
      "nfType": "UDM"
    }
  }
]
```

Successful response - 2

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority?nfServiceName=nudm_uecm" -H "accept: application/json"
[
  [
   {
    "ruleName": "udm_test",
    "data": {
      "nfServiceName": "nudm_uecm",
      "httpMethods": [
        "GET",
        "POST"
      ],
      "messageType": [
        "service-request",
        "service-response"
       ],
      "enableAssignPriority": true,
      "assignPriority": 10,
      "enableOverridePriority": false,
      "overridePriority": -1,
      "nfType": "UDM"
    }
  }
]
```

Successful response - 3

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority?nfServiceName=nudm_uecm&messageType=REQUEST" -H "accept:
application/json"
[
```


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```
  {
    "ruleName": "udm_test",
    "data": {
      "nfServiceName": "nudm_uecm",
      "httpMethods": [
        "GET",
        "POST"
      ],
      "messageType": [
        "service-request",
        "service-response"
       ],
      "enableAssignPriority": true,
      "assignPriority": 10,
      "enableOverridePriority": false,
      "overridePriority": -1,
      "nfType": "UDM"
    }
  }
]
```

Successful response - 4

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority?ruleName=default" -H "accept: application/json"
{
  "ruleName": "default",
  "data": {
    "nfServiceName": "*",
    "httpMethods": [
      "*"
    ],
    "messageType": [
      "*"
    ],
    "enableAssignPriority": false,
    "assignPriority": 16,
    "enableOverridePriority": false,
    "overridePriority": 16,
    "nfType": "*"
  }
}
```

PUT REST API

This resource adds or updates the SBI message priority configuration using the request body.

Resource URI: /ocscp/scpc-configuration/v1/sbi-message-priority

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Table 2-225 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
SbiMsgPriorityWrapper	M	1	200 OK	Indicates the SBI message priority configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.

Example

Successful response - 1

```
$ curl -X PUT "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority" -H "accept: application/json" -H "Content-Type: application/
json" -d "{\"ruleName\":\"nudm_test\",\"data\":
{\"nfServiceName\":\"nudm_uecm\",\"httpMethods\":
[\"PUT\",\"PATCH\"],\"messageType\":[\"service-request\",\"service-
response\"],\"enableAssignPriority\":true,\"assignPriority\":10,\"enableOverri
dePriority\":true,\"overridePriority\":10}}"

{
  "ruleName": "nudm_test",
  "data": {
    "nfServiceName": "nudm_uecm",
    "httpMethods": [
      "PUT",
      "PATCH"
    ],
    "messageType": [
        "service-request",
        "service-response"
       ],
    "enableAssignPriority": true,
    "assignPriority": 10,
    "enableOverridePriority": true,
    "overridePriority": 10,
    "nfType": "UDM"
  }
}

200 OK
```

Successful response - 2

```
curl -X 'PUT' \
  'http://<SCP configuration FQDN>:<port>/ocscp/scpc-configuration/v1/sbi-
message-priority' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
    "ruleName": "nef_qos_test",
```


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```
    "data": {
      "nfServiceName": "3gpp-as-session-with-qos",
      "httpMethods": [
        "GET",
        "POST"
      ],
      [
        "service-request",
        "service-response"
       ],
      "enableAssignPriority": true,
      "assignPriority": 10,
      "enableOverridePriority": false,
      "overridePriority": 1,
      "nfType": "NEF"
    }
  }'
```

Failure case 1: Due to missing data object in the request body.

```
$ curl -X 'PUT' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d ' {
    "ruleName": "rule1"

  }'


Response Body:
{
  "title": "Bad Request",
  "status": 400,
  "detail": "data Object is missing, Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/sbi-message-priority",
  "cause": "MANDATORY_IE_MISSING"
}
```

Failure case 2: Due to missing fields in request body.

```
$ curl -X PUT "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority" -H "accept: application/json" -H "Content-Type: application/
json" -d "{\"data\":
{\"assignPriority\":10,\"dNNs\":\"\",\"enableAssignPriority\":true,\"enableOve
rridePriority\":true,\"httpMethods\":
[\"PUT\",\"PATCH\"],\"messageType\":\"REQUEST\",\"overridePriority\":10,\"sNSS
AIs\":\"\"},\"ruleName\":\"nudm_test\"}"


Response Body:
{
  "title": "Bad Request",
  "status": "400",
  "detail": "nfServiceName is missing, Please refer to the User Guide.",
```


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```
  "instance": "/ocscp/scpc-configuration/v1/sbi-message-priority",
  "cause": "MANDATORY_IE_MISSING"
}
```

Failure case 2: Missing fields in request body

```
$ curl -X 'PUT' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d ' {
    "ruleName": "rule1",
    "data": {

      "httpMethods": [
        "*"
      ],
      "messageType": [
        "notification-response",
        "notification-request"
      ],
      "enableAssignPriority": false,
      "assignPriority": 16,
      "enableOverridePriority": false,
      "overridePriority": 16,
      "nfType": "*"
    }
  }'


Response Body:
{
  "title": "Bad Request",
  "status": 400,
  "detail": "nfServiceName is missing, Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/sbi-message-priority",
  "cause": "MANDATORY_IE_MISSING"
}
```

Failure case 2: Overlapping of Keys

```
$ curl -X 'PUT' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d ' {
    "ruleName": "rule4",
    "data": {
      "nfServiceName": "*",
      "httpMethods": [
        "*"
      ],
      "messageType": [
        "notification-response",
        "notification-request"
```


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```
      ],
      "enableAssignPriority": false,
      "assignPriority": 16,
      "enableOverridePriority": false,
      "overridePriority": 16,
      "nfType": "*"
    }
  }'

Response Body:
{
  "title": "Bad Request",
  "status": 400,
  "detail": "Overlapping of Keys in request Body, please refer to the User
Guide",
  "instance": "/ocscp/scpc-configuration/v1/sbi-message-priority",
  "cause": "MANDATORY_IE_INCORRECT"
}
```

PATCH REST API

This resource adds or updates the message priority configuration using the request body.

Resource URI: /ocscp/scpc-configuration/v1/sbi-message-priority

Table 2-226 URI Query Parameters Supported by the PATCH method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	M	1	Indicates the name of ruleName.
patchDocument	String	M	1	Indicates the patchDocument to be added to the request body. Example: `[{"op":"replace","path":"/data/nfServiceName","value":"nudm_sdm"},{"op":"replace","path":"/data/messageType","value":"REQUEST"},{"op":"replace","path":"/data/httpMethods","value":["GET"]}]`

Successful response

```
$ curl -X 'PATCH' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority?
ruleName=rule1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/merge-patch+json' \
```


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```
  -d '[{ "op": "replace", "path": "/data/nfServiceName", "value": "nudm-
uecm" }]'

$ curl -X 'PATCH' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority?
ruleName=rule1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/merge-patch+json' \
  -d '[{ "op": "replace", "path": "/data/nfType", "value": "UDM" }]'

$ curl -X 'PATCH' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority?
ruleName=rule1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/merge-patch+json' \
  -d '[{"op":"replace","path":"/data/httpMethods","value":["GET"]}]'

$ curl -X 'PATCH' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/sbi-message-priority?
ruleName=rule1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/merge-patch+json' \
  -d '[{"op":"replace","path":"/data/messageType","value":["service-
request"]}]'
```

Table 2-227 PATCH Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
SbiMsgPriorityWrapper	M	1	200 OK	Indicates the SBI message priority configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.

Response body

```
Response Body:
{
  "ruleName": "udm_test1",
  "data": {
    "nfServiceName": "nudm_sdm",
    "httpMethods": [
      "GET"
    ],
    "messageType": [
        "service-request",
        "service-response"
    ],
    "enableAssignPriority": true,
    "assignPriority": 25,
    "enableOverridePriority": false,
    "overridePriority": 16,
    "nfType": "UDM"
```


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```
  }
}
```

DELETE REST API

This resource removes the message priority configuration data based on query parameters.

Resource URI: /ocscp/scpc-configuration/v1/sbi-message-priority

Table 2-228 URI Query Parameters Supported by the DELETE method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	O	1	Indicates the name of ruleName.

> **Note**
>
> ruleName is a valid combination of query parameters.

Table 2-229 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			204 OK	Returns only the response code in successful scenarios.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found.

Example
Successful response - 1

```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority?ruleName=udm_test" -H "accept: application/json" */*"

204 OK
```

Failure case 1: When no matching entry is found.

```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sbi-
message-priority?ruleName=udm_test" -H "accept: */*"

Response Body:
{
  "title": "Not Found",
  "status": "404",
  "detail": "Sbi Message Priority configuration data not found for the given
'ruleName': udm_test",
  "instance": "/ocscp/scpc-configuration/v1/sbi-message-priority/udm_test",
```


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```
  "cause": "DATA_NOT_FOUND"
}
```

2.25 Pod Overload Control Configurations

This section provides information about overload policy configurations to control and discard request messages sent to scp-worker.

2.25.1 Configuring Pod Overload Control Policy

This section provides information about configurations required for CPU and pending transactions onset threshold, abatement threshold, and abatement time for SCP-Worker.

Resources

The following table describes the resource name to retrieve, add, update, and remove the SCP-Worker Pod Overload Control Policy data based on the query parameters.

Table 2-230 Resource Name

Resource Name	Resource URI	HTTP Method	Description
pod-overload-control-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-control-policy	GET	Retrieves all the scp-worker Pod Overload Control Policy data configured in SCP.
pod-overload-control-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-control-policy	GET	Retrieves the scp-worker Pod Overload Control Policy data configured based on the threshold level in SCP when the threshold level is provided as query parameters, which is optional. If it is absent, then it retrieves all Overload Control Policy data configured in SCP.
pod-overload-control-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-control-policy	PUT	Adds or updates the scp-worker Pod Overload Control Policy data to SCP. **Note**: • You can add new customized threshold levels. • While configuring threshold levels, ensure that onset and abatement thresholds do not overlap with other threshold levels. • While configuring the WARN level, you should configure the lowest possible onset and abatement thresholds. • Ensure that the abatement threshold is lesser than the onset threshold.
pod-overload-control-policy	/ocscp/scpc-configuration/v1/pod-overload-control-policy	DELETE	Removes the configured scp-worker Pod Overload Control Policy data at the threshold level. **Note**: SCP does not allow the removal of default threshold levels: MINOR, MAJOR, WARN, and CRITICAL.

Data Model

Request Body

The following table describes the field names of the OverloadCtrlPolicyWrapper data type.

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Table 2-231 OverloadCtrlPolicyWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the name of a threshold level, for example, MINOR, MAJOR, WARN, and CRITICAL.
data	WorkerPodOlCtrlPolicyData	M	Contains the cpuOverloadConfig data.

Table 2-232 WorkerPodOlCtrlPolicyData

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
cpuOverloadConfig	Object	M	Contains CPU overload control details.
pendingTransactionOverloadConfig	Object	C	Configures the parameters such as onSetThreshold, abatementThreshold, and abatementTimeInMilliseconds for all the threshold levels. **Note**: The pendingTransactionOverloadConfig parameter is optional, but if a user wants to keep this configuration, then all three parameters of this configuration should be provided.

Table 2-233 CpuOverloadConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Range	Description
onSetThreshold	Integer	M	2-100	Indicates the Pod CPU overload onset threshold value for a congestion level. **Note**: This value is the percentage of CPU utilization.
abatementThreshold	Integer	M	1-99	Indicates the congestion level abatement threshold value. **Note**: This value is the percentage of CPU utilization.
abatementTimeInMilliSeconds	Integer	M	50 ms to 5000 ms	Indicates the congestion level abatement threshold time.

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Table 2-234 pendingTransactionOverloadConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Range	Description
onSetThreshold	Integer	M	2-100	Indicates the percentage of pod's pending transaction for given maximum allowed pending transaction. **Note**: Maximum allowed pending transaction is the maximum number of requests pending at SCP at any point in time for a particular SCP-Worker CPU profile deployed. For maximum allowed pending transaction per SCP-Worker CPU profile, see Table 2-235.
abatementThreshold	Integer	M	1-99	Indicates the congestion level abatement threshold value. **Note**: This value is the percentage of the maximum allowed pending transactions supported by SCP.
abatementTimeInMilliSeconds	Integer	M	50ms to 5000ms	Indicates the congestion level abatement threshold time.

Table 2-235 Maximum Allowed Pending Transaction per SCP-Worker CPU Profile

SCP-Worker CPU Profile	Maximum Allowed Pending Transaction
4	6000
8	12000
12	15000

Table 2-236 CpuOverloadConfig Threshold Level

Threshold Level	onSetThreshold	abatementThreshold	Abatement Time in millisecond
WARN	75	70	200
MINOR	82	76	200
MAJOR	87	83	200
CRITICAL	92	88	200

> **Note**
>
> These alarms are raised when the CPU utilization reaches the mentioned threshold level.

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Table 2-237 pendingTransactionOverloadConfig Threshold Level

Threshold Level	onSetThreshold	abatementThreshold	Abatement Time in millisecond
WARN	75	70	200
MINOR	82	76	200
MAJOR	87	83	200
CRITICAL	92	88	200

> **Note**
>
> These alarms are raised when the pending transaction reaches the mentioned threshold level.

Resource Definition

GET REST API

This resource fetches the scp-worker Pod Overload Control Policy data based on the query parameters.

If no query parameter is provided, all the Overload Control Policy data is returned.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-control-policy

Table 2-238 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the name of a threshold level, for example, MINOR, MAJOR, WARN, and CRITICAL. This is the threshold level for which the query is being triggered. This returns the overload Control policy configuration for the queried threshold level.

Table 2-239 Data Structures Supported by the GET ALL Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
List<OverloadCtrlPolicyWrapper>	M	1	200 OK	Indicates the list of OverloadCtrlPolicyWrapper data.

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Table 2-240 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
OverloadCtrlPolicyWrapper	-	1	200 OK	Indicates the OverloadCtrlPolicyWrapper configuration data. On successful response, returns the overload Control configuration data.
ProblemDetails	M	1	404 NOT FOUND	Returns error with problem details in case of any issue and if the query is unable to fetch the results. This data type can have 403 response code that indicates operation is not allowed.

Example

Successful response

```
{
    "thresholdLevel": "CRITICAL",
    "data": {
      "cpuOverloadConfig": {
        "onSetThreshold": 95,
        "abatementThreshold": 92,
        "abatementTimeInMilliSeconds": 90
      },
      "pendingTransactionOverloadConfig": {
        "onSetThreshold": 95,
        "abatementThreshold": 92,
        "abatementTimeInMilliSeconds": 50
      }
    }
  }
```

PUT REST API

This resource adds or updates the scp-worker Pod Overload Control Policy configuration data using the request body.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-control-policy

Table 2-241 Data Structures Supported by the PUT Response Body

Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
OverloadCtrlPolicyWrapper	M	1	200 OK	Indicates the OverloadCtrlPolicyWrapper configuration data. On successful response, returns the overload Control configuration data.

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Table 2-241 (Cont.) Data Structures Supported by the PUT Response Body

Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571. This data type can have 403 response code that indicates operation is not allowed. Returns BAD request in case request is incorrect. In response, sends probLemDetails as defined in 29.571.

Example

Successful response

```
curl -X PUT "http://10.75.227.181:30258/ocscp/scpc-configuration/V1/scp-
worker/pod-overload-control-policy" -H "accept: */*" -H "Content-Type:
application/json" -d "{\"data\":{\"cpuOverloadConfig\":
{\"abatementThreshold\":96,\"abatementTimeInMilliSeconds\":600,\"onSetThreshol
d\":97}},\"thresholdLevel\":\"Level1\"}"
```

```
Response Code: 201 CREATED
Response Body:
{
"thresholdLevel": "Level1",
"data": {
"cpuOverloadConfig": {
"onSetThreshold": 97,
"abatementThreshold": 96,
"abatementTimeInMilliSeconds": 90
},
"pendingTransactionOverloadConfig": {
"onSetThreshold": 97,
"abatementThreshold": 96,
"abatementTimeInMilliSeconds": 50
}
}
```

DELETE REST API

This resource removes the scp-worker Pod Overload Control Policy configuration data based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-control-policy

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Table 2-242 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
thresholdLevel	String	M	1	Indicates the name of a custom threshold level. This is the threshold level for which the query is being triggered. This returns the overload Control policy configuration for the queried threshold level.

> **Note**
>
> - thresholdLevel is a valid combination of query parameters.
> - Only custom threshold levels can be removed. The default levels, MINOR, MAJOR, WARN, and CRITICAL cannot be removed.

Table 2-243 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			204 OK	Returns the successful response in case deletion of record is successful.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found. This data type can have 403 response code that indicates operation is not allowed.

Example

Successful response

```
curl -X DELETE "http://10.75.227.181:30258/ocscp/scpc-configuration/V1/scp-worker/pod-overload-control-policy?thresholdLevel=LEVEL1" -H "accept: application/json"


Response code : 204 No Content
```

2.25.2 Configuring Pod Overload Action Policy

This section describes SCP-Worker Pod Overload Action Policy configurations based on the threshold level.

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Resources

The following table describes the resource name to retrieve, add, update, and remove the SCP-Worker Pod Overload Action Policy data based on the query parameters.

Table 2-244 Resource Name

Resource Name	Resource URI	HTTP Method	Description
pod-overload-action-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy	GET	Retrieves all the scp-worker Pod Overload Action Policy data configured in SCP.
pod-overload-action-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy	GET	Retrieves the scp-worker Pod Overload Action Policy data configured based on the threshold level in SCP.
pod-overload-action-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy	PUT	Adds scp-worker Pod Overload Action Policy data to SCP. By default, this policy supports MINOR, MAJOR, and CRITICAL levels. **Note**: • You can add new customized threshold levels. • Do not configure the Warn threshold level.
pod-overload-action-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy	DELETE	Removes the configured scp-worker Pod Overload Action Policy data by the threshold level. **Note**: You cannot remove MINOR, MAJOR, and CRITICAL threshold levels.

Data Model

Request Body

The following table describes the field names of the OverloadActionWrapper data type.

Table 2-245 OverloadActionWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the name of a threshold level, for example, MINOR, MAJOR, and CRITICAL.
data	WorkerPodOlActionPolicyData	M	Contains the cpuOverloadConfig data.

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Table 2-246 WorkerPodOlActionPolicyData

Field Name	Data Type	Mandatory (M) or Optional(O)	Range	Description
overloadAction	Enum	M	NO_ACTION and DISCARD	Indicates the overloadAction objects, for example: NO_ACTION and DISCARD. NO_ACTION indicates that no action is taken for the configured thresholdLevel. DISCARD indicates that the messages can be discarded based on the "3gpp-Sbi-Message-Priority" header or percentage. The default value is DISCARD.
errorResponsePercentage	Integer	M	100	Indicates the percentage of messages with error responses when overloadAction is DISCARD.
ErrorProfileConfiguration	Object	M	NA	Indicates error profiles to be used for responding with error responses if overloadAction is configured.
DiscardPolicyType	Enum	M	DISCARD_PERCENTAGE and SBI_MESSAGE_PRIORITY	Indicates the DiscardPolicyType objects. For example: DISCARD_PERCENTAGE and SBI_MESSAGE_PRIORITY. DISCARD_PERCENTAGE enables the discard message by percentage. SBI_MESSAGE_PRIORITY enables the discard message by priority.

Table 2-247 ErrorProfileConfiguration

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
errorCode	Integer	M	429	Indicates an HTTP status error code.
errorCause	String	M	NF_CONGESTION_RISK	Indicates the cause of the pod overload.
errorTitle	String	M	SCP is in pod overload congestion	Indicates the name of the error.
errorDescription	String	M	SCP <podName> pod is in <congestion level> pod overload congestion	Describes the cause of the error.

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Table 2-247 (Cont.) ErrorProfileConfiguration

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
retryAfter	String	O	NA	Indicates the interval to start the next retry attempt.
redirectUrl	String	O	NA	Indicates the alternate URL to redirect request messages.

Resource Definition

GET REST API

This resource fetches the scp-worker Pod Overload Action Policy data based on the query parameters.

If no query parameter is provided, all the Overload Action Policy data is returned.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy

Table 2-248 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the name of a threshold level, for example, MINOR, MAJOR, and CRITICAL. This is the threshold level for which the query is being triggered. This returns the overload action policy configuration for the queried threshold level.

> **Note**
>
> thresholdLevel is a valid combination of query parameters.

Table 2-249 Data Structures Supported by the GET ALL Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
List<OverloadActionPolicyWrapper>		1	200 OK	Indicates the list of OverloadActionPolicyWrapper data.

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Table 2-250 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
OverloadActionPolicyWrapper		1	200 OK	Indicates the OverloadActionPolicyWrapper configuration data. On successful response, returns the overload Action configuration data.

Example

Successful response

```
curl -X GET "http://10.75.227.181:30258/ocscp/scpc-configuration/v1/scp-
worker/pod-overload-action-policy?thresholdLevel=CRITICAL" -H "accept:
application/json"


Response code : 200 OK
Response data:
{
  "thresholdLevel": "CRITICAL",
  "data": {
    "overloadAction": "DISCARD",
    "errorResponsePercentage": 100,
    "errorProfileConfiguration": {
      "errorCode": 429,
      "errorCause": "",
      "errorTitle": "",
      "errorDescription": "",
    },
    "discardPolicyType": "DISCARD_PERCENTAGE"
  }
}
```

PUT REST API

This resource adds or updates the scp-worker Pod Overload Action Policy configuration data using the request body.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy

Table 2-251 Data Structures Supported by the PUT Response Body

Field Name	Mandatory (M) or Optional(O)	Response Codes	Description
OverloadActionWrapper	M	200 OK	Indicates the OverloadAction configuration data. On successful response, returns the overload Action configuration data.

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Table 2-251 (Cont.) Data Structures Supported by the PUT Response Body

Field Name	Mandatory (M) or Optional(O)	Response Codes	Description
ProblemDetails	M	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571. This data type can have 403 response code that indicates operation is not allowed. Returns BAD request in case request is incorrect. In response, sends probLemDetails as defined in 3GPP TS 29.571.

Example

Successful response

```
curl -X PUT "http://10.75.227.181:30258/ocscp/scpc-configuration/V1/scp-
worker/pod-overload-action-policy" -H "accept: */*" -H "Content-Type:
application/json" -d "{\"data\":
{\"discardPolicyType\":\"DISCARD_PERCENTAGE\",\"errorProfileConfiguration\":
{\"errorCause\":\"\",\"errorCode\":429,\"errorDescription\":\"string\",\"error
Title\":\"string\",\"redirectUrl\":\"string\",\"retryAfter\":\"string\"},\"err
orResponsePercentage\":67,\"overloadAction\":\"NO_ACTION\"},\"thresholdLevel\"
:\"Level1\"}"


Response Code: 201 CREATED
Response Data:
{
  "thresholdLevel": "Level1",
  "data": {
    "overloadAction": "NO_ACTION",
    "errorResponsePercentage": 100,
    "errorProfileConfiguration": {
      "errorCode": 429,
      "errorCause": "",
      "errorTitle": "string",
      "errorDescription": "string",
      "retryAfter": "string",
      "redirectUrl": "string"
    },
    "discardPolicyType": "DISCARD_PERCENTAGE"
  }
}
```

DELETE REST API

This resource removes the scp-worker Pod Overload Action Policy configuration data based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-action-policy

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Table 2-252 URI Query Parameters Supported by the DELETE Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
thresholdLevel	String	M	1	Indicates the name of a threshold level, for example, MINOR, MAJOR, and CRITICAL. This is the threshold level for which the query is being triggered. This returns the overload Action policy configuration for the queried threshold level.

> **Note**
>
> thresholdLevel is a valid combination of query parameters.

Table 2-253 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			204 NO CONTENT	Returns the successful response in case deletion of record is successful.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found. This data type can have 403 response code that indicates operation is not allowed.

Example

Successful response

```
curl -X DELETE "http://10.75.227.181:30258/ocscp/scpc-configuration/v1/scp-
worker/pod-overload-action-policy?thresholdLevel=LEVEL1" -H "accept:
application/json"


Response Code: 204 No Content
```

2.25.3 Configuring Pod Overload Discard Policy

This section describes SCP-Worker Pod Overload Discard Policy configurations based on the threshold level.

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Resources

The following table describes the resource name to retrieve, add, update, and remove the SCP-Worker Pod Overload Discard Policy data based on the query parameters.

Table 2-254 Resource Name

Resource Name	Resource URI	HTTP Method	Description
pod-overload-discard-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy	GET	Retrieves all the scp-worker Pod Overload Discard Policy data configured in SCP.
pod-overload-discard-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy	GET	Retrieves the scp-worker Pod Discard Policy data configured based on the threshold level in SCP.
pod-overload-discard-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy	PUT	Adds the scp-worker Pod Discard Policy data to SCP. By default, this policy supports MINOR, MAJOR, and CRITICAL levels. **Note**: • You can add new customized threshold levels. • Do not configure the Warn threshold level.
pod-overload-discard-policy	/ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy	DELETE	Removes the configured scp-worker Pod Discard Policy data by the threshold level. **Note**: You cannot remove MINOR, MAJOR, and CRITICAL threshold levels.

Data Model

Request Body

The following table describes the field names of the DiscardPolicyWrapper data type.

Table 2-255 DiscardPolicyWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the name of a threshold level, for example, MINOR, MAJOR, WARN, and CRITICAL.
data	WorkerPodOlDiscardPolicyData	M	Contains the cpuOverloadConfig data.

Table 2-256 DiscardPolicyConfig Threshold Level

Threshold Level	discardPercentage	sbiMsgPriorityDiscardForm
MINOR	20	16
MAJOR	50	8
CRITICAL	70	4

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Table 2-257 WorkerPodOlDiscardPolicyData

Field Name	Data Type	Mandatory (M) or Optional(O)	Range	Description
discardPercentage	Integer	M	1-100	Indicates the percentage of messages to be discarded if the CPU overload threshold level exceeds the configured limit.
sbiMsgPriorityDiscardFrom	Integer	M	0-31	Discards the requests having SBI message priority greater than or equal to the configured limit.

Resource Definition

GET REST API

This resource fetches the scp-worker Pod Overload Discard Policy data based on the query parameters.

If no query parameter is provided, all the Discard Policy data is returned.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy

Table 2-258 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
thresholdLevel	String	M	Indicates the name of a threshold level, for example, MINOR, MAJOR, WARN, and CRITICAL. This is the threshold level for which the query is being triggered. This returns the overload Discard policy configuration for the queried threshold level.

Table 2-259 Data Structures Supported by the GET ALL Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
List<DiscardPolicyWrapper>	M	1	200 OK	Indicates the list of DiscardPolicyWrapper data.

Table 2-260 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
DiscardPolicyWrapper	M	1	200 OK	Indicates the DiscardPolicyWrapper configuration data. On successful response, returns the overload Discard configuration data.

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Table 2-260 (Cont.) Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
ProblemDetails	M	1	404 NOT FOUND	Returns error with problem details in case of any issue and if the query is unable to fetch the results. This data type can have 403 response code that indicates operation is not allowed.

Example

Successful response

```
curl -X GET "http://10.75.227.181:30258/ocscp/scpc-configuration/v1/scp-
worker/pod-overload-discard-policy?thresholdLevel=CRITICAL" -H "accept:
application/json"
```

```
Response Code: 200 OK
Response Body:
{
  "thresholdLevel": "CRITICAL",
  "data": {
    "discardPercentage": 30,
    "sbiMsgPriorityDiscardFrom": 4
  }
}
```

PUT REST API

This resource adds or updates the scp-worker Pod Overload Discard Policy configuration data using the request body.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy

Table 2-261 Data Structures Supported by the PUT Response Body

Field Name	Mandatory (M) or Optional(O)	Response Codes	Description
DiscardPolicyWrapper	M	200 OK	Indicates the DiscardPolicy configuration data. On successful response, returns the overload Discard configuration data.
ProblemDetails	M	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571. This data type can have 403 response code that indicates operation is not allowed. Returns BAD request in case request is incorrect. In response, sends probLemDetails as defined in 29.571.

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Example

Successful response

```
curl -X PUT "http://10.75.227.181:30258/ocscp/scpc-configuration/V1/scp-
worker/pod-overload-discard-policy" -H "accept: */*" -H "Content-Type:
application/json" -d "{\"data\":
{\"discardPercentage\":40,\"sbiMsgPriorityDiscardFrom\":19},\"thresholdLevel\"
:\"LEVEL1\"}"



Response Code: 201 OK
Response Body:
{
  "thresholdLevel": "LEVEL1",
  "data": {
    "discardPercentage": 40,
    "sbiMsgPriorityDiscardFrom": 19
  }
}
```

DELETE REST API

This resource removes the scp-worker Pod Overload Discard Policy configuration data based on the query parameters.

Resource URI: /ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy

Table 2-262 URI Query Parameters Supported by the DELETE Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
thresholdLevel	String	M	1	Indicates the name of a threshold level, for example, MINOR, MAJOR, WARN, and CRITICAL. This is the threshold level for which the query is being triggered. This returns the overload Discard policy configuration for the queried threshold level.

> **Note**
>
> thresholdLevel is a valid combination of query parameters.

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Table 2-263 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			200 OK	Returns the successful response in case deletion of record is successful.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found. This data type can have 403 response code that indicates operation is not allowed.

Example

Successful response

```
curl -X DELETE "http://10.75.227.181:30258/ocscp/scpc-configuration/v1/scp-worker/pod-overload-discard-policy?thresholdLevel=LEVEL1" -H "accept: application/json"
```

```
Response Code: 204 No Content
```

2.26 Configuring SEPP InterPlmn Info

This section provides SEPP InterPlmn Info REST API configurations to enable SCP integration with Security Edge Protection Proxy (SEPP) to route 5G Service Based Interface (SBI) roaming subscriber traffic outside the network to the required Public Land Mobile Network (PLMN).

Resources

The following table describes the resource name to retrieve, add, update, and remove SEPP Info based on the query parameters.

Table 2-264 Resource Name

Resource Name	Resource URI	HTTP Method	Description
sepp-config	/ocscp/scpc-configuration/v1/sepp-config	GET	Retrieves all the SEPP Info configured list at SCP or specific records based on the query parameters.
sepp-config	/ocscp/scpc-configuration/v1/sepp-config/{nfInstanceId}	GET	Retrieves SEPP Info records based on nfInstanceId as a path variable.
sepp-config	/ocscp/scpc-configuration/v1/sepp-config/{nfInstanceId}	PUT	Adds or updates SEPP Info details configured in SCP.

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Table 2-264 (Cont.) Resource Name

Resource Name	Resource URI	HTTP Method	Description
sepp-config	/ocscp/scpc-configuration/v1/sepp-config/{nfInstanceId}	PATCH	Updates or modifies SEPP Info details configured in SCP.
sepp-config	/ocscp/scpc-configuration/v1/sepp-config/{nfInstanceId}	DELETE	Removes the configured SEPP Info details based on nfInstanceId.

Data Model

Request Body

The following table describes the field names of the InterPlmnRoutingInfo data type.

Table 2-265 InterPlmnRoutingInfo

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
nfInstanceId	String	M	Specifies the identity of the NF instance for which routing information is fetched.
seppInfo remotePlmnList	String	M	This is the remote PLMN list served by SEPP, utilized in roaming scenarios to select SEPP based on the PLMN in the FQDN.
mcc	String	M	Indicates the mobile country code. It is a three digit number ranging from 0 to 9.
mnc	String	M	Indicates the mobile network code. It can be of two or three digits ranging from 0 to 9.
http	String	M	Enables the HTTP connection. The value can be 0 to 65535.
https	String	M	Enables the HTTPS connection. The value can be 0 to 65535.

Response Body

The following table describes response body data models that varies based on the REST operation status.

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Table 2-266 Response Body Data Type

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(InterPlmnRoutingInfo)	M	1	200 OK	Indicates the list of SEPP Info (InterPlmnRoutingInfo) matching criteria.
ProblemDetails	M	1	404 NOT FOUND	Returns when the data is not found for given query parameters.

JSON Format

```
[
 {
  "nfInstanceId" : "1faf1bbc-6e4a-4454-a507-a14ef8e1bc6a",
  "seppInfo": {
    "remotePlmnList": [{
        "mcc": "327",
        "mnc": "15"
    }, {
        "mcc": "328",
        "mnc": "16"
    }, {
        "mcc": "329",
        "mnc": "17"
    }],
    "seppPorts": {
        "http": "8000",
        "https": "8090"
    }
  }
 },{
   ....
   ...
  }
]
```

Resource Definition

GET REST API

This resource fetches the SEPP Info details (InterPlmnRoutingInfo) based on the query parameters.

If no query parameter is provided, all the SEPP info details are returned.

Resource URI: /ocscp/scpc-configuration/v1/sepp-config

The following table describes the URI query parameters supported by the GET method on this resource.

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Table 2-267 URI Query Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
nfInstanceId	String	O	Specifies the identity of the NF instance for which routing information is fetched.

> **Note**
>
> nfInstanceId is a valid combination of query parameter or path variable.

Table 2-268 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(InterPlmnRoutingInfo)	M	1	200 OK	Indicates the list of SEPP Info (InterPlmnRoutingInfo) or specific record based on the query parameters.
ProblemDetails	M	1	404 NOT FOUND	Returns when the data is not found for given query parameters.

Example

Successful response - 1

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sepp-
config" -H "accept: application/json"
[
  {
    "nfInstanceId": "1faf1bbc-6e4a-4454-a507-a14ef8e1bc6a",
    "seppInfo": {
        "remotePlmnList": [{
            "mcc": "327",
            "mnc": "15"
        }, {
            "mcc": "328",
            "mnc": "16"
        }],
        "seppPorts": {
            "http": "8000",
            "https": "8090"
        }
    }
}
]
```


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Successful response - 2

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sepp-
config?nfInstanceId=1faf1bbc-6e4a-4454-a507-a14ef8e1bc6a" -H "accept:
application/json"

{
    "nfInstanceId": "1faf1bbc-6e4a-4454-a507-a14ef8e1bc6a",
    "seppInfo": {
        "remotePlmnList": [{
            "mcc": "327",
            "mnc": "15"
        }, {
            "mcc": "328",
            "mnc": "16"
        }],
        "seppPorts": {
            "http": "8000",
            "https": "8090"
        }
    }
}
```

Successful response - 3

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sepp-
config/1faf1bbc-6e4a-4454-a507-a14ef8e1bc6a" -H "accept: application/json"

{
    "nfInstanceId": "1faf1bbc-6e4a-4454-a507-a14ef8e1bc6a",
    "seppInfo": {
        "remotePlmnList": [{
            "mcc": "327",
            "mnc": "15"
        }, {
            "mcc": "328",
            "mnc": "16"
        }],
        "seppPorts": {
            "http": "8000",
            "https": "8090"
        }
    }
}
```

Failure case 1

```
$ curl -X GET "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sepp-
config?nfInstanceId=4faf1bbc-5e4a-4454-a507-a14ef8e1bc6a" -H "accept:
application/json"


Response Body:
{
  "title": "Not Found",
```


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```
  "status": "404",
  "detail": "Sepp Info configuration data not found against given query
parameter(s), Please refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/sepp-config?
nfInstanceId=4faf1bbc-5e4a-4454-a507-a14ef8e1bc6a",
  "cause": "DATA_NOT_FOUND"
}
```

PUT REST API

This resource adds or updates the SEPP Info configuration using the request body.

Resource URI: /ocscp/scpc-configuration/v1/sepp-config/{nfInstanceId}

Table 2-269 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
InterPlmnRoutingInfo	M	1	200 OK	Indicates the InterPlmn RoutingInfo configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571 section 5.2.4.1.

Example
Successful response

```
$ curl -X PUT "http://10.75.226.108:32466/ocscp/scpc-configuration/v1/sepp-
config/2faf1bbc-6e4a-4454-a507-a14ef8e1bc6a" -H "accept: */*" -H "Content-
Type: application/json" -d "{ \"nfInstanceId\": \"9faf1bbc-6e4a-4454-a507-
aef01a101a06\", \"seppInfo\": { \"remotePlmnList\": [{ \"mcc\": \"267\",
\"mnc\": \"321\" }], \"seppPorts\": { \"http\": \"8000\", \"https\":
\"4430\" } }} '"

  {
    "nfInstanceId": "2faf1bbc-6e4a-4454-a507-a14ef8e1bc6a",
    "seppInfo": {
        "remotePlmnList": [{
            "mcc": "267",
            "mnc": "321"
        }],
        "seppPorts": {
            "http": "8000",
            "https": "4430"
        }
    }
}

200 OK
```

PATCH REST API

This resource adds or updates the SEPP Info configuration using the request body.

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Resource URI: /ocscp/scpc-configuration/v1/sepp-config/ {nfInstanceId}

Table 2-270 URI Query Parameters Supported by the PATCH method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
nfInstanceId	String	M	1	Specifies the identity of the NF instance for which routing information is fetched.

patchDocument	String	M	1	Indicates the patchDocument to be sent.
				Example:
				`[{"op":"replace","path":"/seppInfo/seppPorts/http","value":"8000"}`
				`{"op":"replace","path":"/seppInfo/seppPorts/https","value":"9000"}]`

Successful response: Request Body

```
$ curl -X PATCH "http://10.75.226.108:32551/ocscp/scpcconfiguration/v1/sepp-
config/2faf1bbc-6e4a-4454-a507-a14ef8e1bc6a" -H "accept: application/json" -H
"Content-Type: application/merge-patch+json" -d
"[{\"op\":\"replace\",\"path\":\"/seppInfo/seppPorts/
https\",\"value\":\"9010\"},  {\"op\":\"replace\",\"path\":\"/seppInfo/
seppPorts/http\",\"value\":\"9100\"}]"
```

Table 2-271 PATCH Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
InterPlmnRoutingInfo	M	1	200 OK	Indicates the InterPlmn RoutingInfo configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571 section 5.2.4.1.

Response body

```
{
    "nfInstanceId": "2faf1bbc-6e4a-4454-a507-a14ef8e1bc6a",
    "seppInfo": {
        "remotePlmnList": [{
            "mcc": "327",
            "mnc": "15"
        }, {
            "mcc": "328",
            "mnc": "16"
        }],
        "seppPorts": {
```


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```
            "http": "9010",
            "https": "9000"
        }
    }
}
```

DELETE REST API

This resource removes the SEPP Info configuration data based on query parameters.

Resource URI: /ocscp/scpc-configuration/v1/sepp-config/{nfInstanceId}

Table 2-272 URI Query Parameters Supported by the DELETE method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
nfInstanceId	String	O	1	Specifies the identity of the NF instance for which routing information is fetched.

> **Note**
>
> nfInstanceId is a valid combination of query parameter or path variable.

Table 2-273 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
None			204 OK	In successful scenarios, only response code is returned.
ProblemDetails	M	1	404 NOT FOUND	When no matching entry is found.

Example
Successful response - 1

```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sepp-config/2faf1bbc-6e4a-4454-a507-a14ef8e1bc6a" -H "accept: application/json" */*"

204 OK
```

Failure case 1: When no matching entry is found.

```
$ curl -X DELETE "http://10.75.226.108:32551/ocscp/scpc-configuration/v1/sepp-config/4faf1bbc-5e4a-4454-a507-a14ef8e1bc6a" -H "accept: application/json"

Response Body:
{
```


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```
  "title": "Not Found",
  "status": "404",
  "detail": "Sepp Info configuration data not found against given query
parameter(s), Please refer to the User Guide",
  "instance": "/ocscp/scpc-configuration/v1/sepp-config4faf1bbc-5e4a-4454-
a507-a14ef8e1bc6a",
  "cause": "DATA_NOT_FOUND"
}
```

2.27 Configuring App Routing Options

The following section provides configuration details about routing options applicable for Mediation.

Resources

The following table describes the resource name to retrieve, add, update, and remove App routing options.

Table 2-274 Resource Name

Resource Name	Resource URI	HTTP Method	Description
approutingoptions	/ocscp/scpc-configuration/{version}/approutingoptions	GET ALL	Retrieves all configured App routing options.
approutingoptions	/ocscp/scpc-configuration/{version}/approutingoptions/{appname}	GET	Retrieves the configured App routing options specified using the field appname. **Note**: Routing options can be specified only for Mediation, therefore only "mediation" appname is supported.
approutingoptions	/ocscp/scpc-configuration/{version}/approutingoptions/{appname}	PUT	Updates the configured App routing options specified using the field appname. **Note**: You cannot create new routing options but you can only update them. Routing options for appname Mediation can only be updated.
approutingoptions	/ocscp/scpc-configuration/{version}/approutingoptions/{appname}	DELETE	Removes the configured App routing options specified using the appname field. **Note**: DELETE method is not supported.

Data Model

The following table describes the supported data type.

Table 2-275 approutingoptions

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Value
appName	String	M	1	Indicates the name of the application for which the routing option has to be configured.	mediation	mediation

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Table 2-275 (Cont.) approutingoptions

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Value
routingOptions	JSON	M	1	Indicates the JSON structure to store the routing options.	NA	{ "appName": "mediation", "routingOptions": { "v1": { "retry": true, "maxRetryAttempts": 2, "responseTimeout": "1s", "exceptionErrorResponses": [{ "statusCode": ["DEFAULT"], "action": "continue_processing" }, { "statusCode": ["MSGDECODEFAILURE"], "action": "continue_processing" }, { "statusCode": ["MAXHDRSIZEEXCEEDED"], "action": "continue_proces

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Table 2-275 (Cont.) approutingoptions

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Value
						sing" }] } } }

Table 2-276 approutingOptions

Field Name	Data Type	Mandatory (M) or Optional(O)	Description	Default Value
retry	boolean	O	Indicates whether to attempt retry or not when the routing fails.	true
maxRetryAttempts	INT	O	Indicates the maximum number of retry attempts. Minimum value is 1, Maximum value is 10.	1
responseTimeout	String	O	Indicates the allotted time to respond to a message request. Value Range: 100 - 50000 milliseconds or 1 - 50 seconds.	1s
exceptionErrorResponses	List<ExceptionErrorResponses>	O	Indicates the list of ExceptionErrorResponses. Specifies the methods to handle exceptions in case of routing failures. **Note**: `exceptionErrorResponses` specify how exceptions should be handled. In the exceptionErrorResponses of routingOptions, three exception configurations will be created by default during deployment. These configurations will include the status codes DEFAULT, MSGDECODEFAILURE, and MAXHDRSIZEEXCEEDED, with the action set to continue_processing. This means that if an exception occurs during mediation invocation, the process will continue. To change this behavior, the user must create their own exception configuration by specifying actions for specific status codes.	`"exceptionErrorResponses": [ { "statusCode": [ "DEFAULT" ], "action": "continue_processing" }, { "statusCode": [ "MSGDECODEFAILURE" ], "action": "continue_processing" }, { "statusCode": [ "MAXHDRSIZEEXCEEDED" ], "action": "continue_processing" }, ]`

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Table 2-277 exceptionErrorResponses

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Default Value
statusCode	List<String>	M	1..N	Indicates the list of status codes that matches with the status code received from the application. The required action specified by action field is taken.	HTTP Status Codes, HTTP Status with other defined custom status (RESPONSE_TIMEOUT and CONNECTION_FAILURE) Default values are: DEFAULT, MSGDECODEFAILURE, and MAXHDRSIZEEXCEEDED
action	String	M	1	Indicates the action to be taken when the above mentioned status code is received.	send_error_response: Error to be sent if the received status code from application is present in the statusCode list. continue_processing: Continue with processing of message if the received status code from application is present in the statusCode list.
errorProfileConfiguration	JSON	C (mandatory when action=send_error_response)	1	The error profile to be sent when the action to perform is send_error_response when the statusCode matches.	NA

Table 2-278 errorProfileConfiguration

Field Name	Data Type	Mandatory (M) or Optional(O)	Description	Default Value
errorCode	Int	O	Indicates configurable error codes to be sent by SCP to consumer NFs.	Valid HTTP status codes include 5xx and 4xx error codes, as well as custom error codes such as DEFAULT, RESPONSE_TIMEOUT, and CONNECTION_FAILURE. For example, 500, 502, 400, 404 and so on.
errorCause	String	O	Indicates the error cause that is specific to the occurrence of the problem.	NA
errorTitle	String	O	Indicates the title of the error.	NA
errorDescription	String	O	Indicates an explanation specific to the occurrence of the problem.	NA

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Table 2-278 (Cont.) errorProfileConfiguration

Field Name	Data Type	Mandatory (M) or Optional(O)	Description	Default Value
retryAfter	String	C	Indicates the retry interval.	Mandatory if ERROR code is 3xx series and action is send_error_response. The time unit supported is seconds. Example: 2s, 3s, and so on.
redirectUrl	String	C	Indicates the AbsoluteURL of the resource to which the message is redirected to.	Mandatory if ERROR code is 3xx series and action is send_error_response.

Default Routing Options

In the exceptionErrorResponses of routingOptions, three exception configurations are created by default during deployment. The status codes for these configurations are DEFAULT, MSGDECODEFAILURE, and MAXHDRSIZEEXCEEDED, with the action set to continue processing. The routing options will be created with the following default configurations:

```
{
    "appName": "mediation",
    "routingOptions": {
      "retry": true,
      "maxRetryAttempts": "2",
      "responseTimeout": "1s",
      "exceptionErrorResponses": [
        {
          "statusCode": [
            "DEFAULT"
          ],
          "action": "continue_procesing"
        },
         {
          "statusCode": [
            "MSGDECODEFAILURE"
          ],
          "action": "continue_procesing"
        },
         {
          "statusCode": [
            "MAXHDRSIZEEXCEEDED"
          ],
          "action": "continue_procesing"
        }
      ]
    }
  }
```


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Request or Response Body

The following table describes response body based on the REST operation status.

RoutingOptions

```
{
    "appname": "mediation"
    "routingOptions":
     {
        "retry": true,
        "maxRetryAttempts": 4,
        "responseTimeout": 5s,
        "exceptionErrorResponses": [{
            "statusCode": ["501", "504", "connection_failure",
"response_timeout", "SERVICE_UNAVAILABLE" ]
            "action": "send_error",
            "errorProfileConfiguration": {
               "errorCode": 503,
               "errorCause": "MEDIATION_NOT_REACHABLE",
               "errorTitle": "Mediation service unreachable",
               "errorDescription": "Mediation service is not reachable",
               "retryAfter": "5",
               "redirectUrl": ""
             }
        }]
    }
}
```

Resource Definition

GET REST API

This resource retrieves routing options for all the applications.

Resource URI: /ocscp/scpc-configuration/{version}/approutingoptions

The following table describes the data structure supported by the GET method on this resource.

Table 2-279 Data Structure Supported by the GET Method

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
approutingoptions	M	1..N	200 OK	Routing options configuration for the application.

This resource retrieves routing options for the application specified by appname.

Resource URI: /ocscp/scpc-configuration/{version}/approutingoptions/{appname}

The following table describes the path parameters supported by the GET method on this resource.

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Table 2-280 Path Parameters Supported by the GET Method

Name	Data Type	Mandatory (M) or Optional(O)	Description
appname	String	M	Fetches configurations on app name. The supported value is "mediation".

Table 2-281 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
approutingoptions	M	1	200 OK	Indicates the routing options configuration for the Application.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example

Success response for GET ALL

```
curl -X GET "http://10.75.175.233:30953/ocscp/scpc-configuration/v1/
approutingoptions" -H "accept: application/json"

HTTP/1.1 200 OK
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 24 May 2022 12:08:49 GMT

[
  {
    "appName": "mediation",
    "routingOptions": {
      "retry": false,
      "maxRetryAttempts": 6,
      "responseTimeout": "10s",
      "exceptionErrorResponses": [
        {
          "statusCode": [
            "DEFAULT"
          ],
          "action": "continue_processing"
        },

      {
        "statusCode": [
          "MSGDECODEFAILURE"
        ],
        "action": "continue_processing"
      },

      {
        "statusCode": [
```


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```
            "MAXHDRSIZEEXCEEDED"
          ],
          "action": "continue_processing"
        },
          {
            "statusCode": [
              "501"
            ],
            "action": "send_error_response",
            "errorProfileConfiguration": {
              "errorCode": 501,
              "errorCause": "NOT FOUND",
              "errorTitle": "NOT FOUND ",
              "errorDescription": "NOT FOUND",
              "retryAfter": "",
              "redirectUrl": ""
            }
          }
        ]
      }
    }
]
```

Success response for GET

```
curl -X GET "http://10.75.175.233:30953/ocscp/scpc-configuration/v1/
approutingoptions/mediation" -H "accept: application/json"

HTTP/1.1 200 OK
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 24 May 2022 12:08:49 GMT

{
  "appName": "mediation",
  "routingOptions": {
    "retry": false,
    "maxRetryAttempts": 6,
    "responseTimeout": "10s",
    "exceptionErrorResponses": [
      {
        "statusCode": [
          "DEFAULT"
        ],
        "action": "continue_processing"
      },

      {
        "statusCode": [
          "MSGDECODEFAILURE"
        ],
        "action": "continue_processing"
      },
```


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```
      {
        "statusCode": [
          "MAXHDRSIZEEXCEEDED"
        ],
        "action": "continue_processing"
      },
      {
        "statusCode": [
          "501"
        ],
        "action": "send_error_response",
        "errorProfileConfiguration": {
          "errorCode": 501,
          "errorCause": "NOT FOUND",
          "errorTitle": "NOT FOUND ",
          "errorDescription": "NOT FOUND",
          "retryAfter": "",
          "redirectUrl": ""
        }
      }
    ]
  }
}
```

Failure response

```
curl -X GET "http://10.75.175.233:30953/ocscp/scpc-configuration/v1/
approutingoptions/med" -H "accept: application/json"

HTTP/1.1 404 Not Found
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 24 May 2022 12:08:49 GMT

{
  "title": "Not Found",
  "status": "404",
  "detail": "App Routing Options response data not found against given query
parameter(s)",
  "instance": "/ocscp/scpc-configuration/v1/approutingoptions/med",
  "cause": "DATA_NOT_FOUND"
}
```

PUT REST API

This resource configures routing options for the application.

Resource URI: /ocscp/scpc-configuration/{version}/approutingoptions/{appname}

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Table 2-282 Data Structures Supported by the PUT Request Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
approutingoptions	M	1	Indicates the routing options configuration for the Application.

Table 2-283 Data Structures Supported by the PUT Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
approutingoptions	M	1	200 OK	Indicates the routing options configuration for the Application.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.

Example

Success response

```
curl -X PUT "http://10.75.175.233:30953/ocscp/scpc-configuration/v1/
approutingoptions/mediation" -H "accept: application/json" -H "Content-Type:
application/json" -d "{\"appName\":\"mediation\",\"routingOptions\":
{\"retry\":false,\"maxRetryAttempts\":6,\"responseTimeout\":\"10\",\"exception
ErrorResponses\":[{\"statusCode\":
[\"DEFAULT\"],\"action\":\"continue_processing\"},{\"statusCode\":
[\"501\"],\"action\":\"send_error_response\",\"errorProfileConfiguration\":
{\"errorCode\":501,\"errorCause\":\"NOT FOUND\",\"errorTitle\":\"NOT FOUND
\",\"errorDescription\":\"NOT
FOUND\",\"retryAfter\":\"\",\"redirectUrl\":\"\"}}]}}"
```

```
HTTP/1.1 201 Ok
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 24 May 2022 12:08:49 GMT
```

```
{
  "appName": "mediation",
  "routingOptions": {
    "retry": false,
    "maxRetryAttempts": 6,
    "responseTimeout": "10s",
    "exceptionErrorResponses": [
      {
        "statusCode": [
          "DEFAULT"
```


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```
        ],
        "action": "continue_processing"
      },
      {
        "statusCode": [
          "501"
        ],
        "action": "send_error_response",
        "errorProfileConfiguration": {
          "errorCode": 501,
          "errorCause": "NOT FOUND",
          "errorTitle": "NOT FOUND ",
          "errorDescription": "NOT FOUND",
          "retryAfter": "",
          "redirectUrl": ""
        }
      }
    ]
  }
}
```

Failure response

```
curl -X PUT "http://10.75.175.233:30953/ocscp/scpc-configuration/v1/
approutingoptions/med" -H "accept: application/json" -H "Content-Type:
application/json" -d "{\"appName\":\"mediation\",\"routingOptions\":
{\"retry\":false,\"maxRetryAttempts\":6,\"responseTimeout\":\"10\",\"exception
ErrorResponses\":[{\"statusCode\":
[\"DEFAULT\"],\"action\":\"continue_processing\"},{\"statusCode\":
[\"501\"],\"action\":\"send_error_response\",\"errorProfileConfiguration\":
{\"errorCode\":501,\"errorCause\":\"NOT FOUND\",\"errorTitle\":\"NOT FOUND
\",\"errorDescription\":\"NOT
FOUND\",\"retryAfter\":\"\",\"redirectUrl\":\"\"}}]}}"

HTTP/1.1 400 Bad Request
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 24 May 2022 12:08:49 GMT

{
  "title": "Bad Request",
  "status": "400",
  "detail": "App Name must always be mediation",
  "instance": "/ocscp/scpc-configuration/v1/approutingoptions/med",
  "cause": "INVALID_QUERY_PARAM"
}
```

DELETE REST API

This resource removes all the application routing options based on ruleName.

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> **Note**
>
> DELETE method is not supported.

Resource URI: /ocscp/scpc-configuration/{version}/approutingoptions/{appname}

Table 2-284 Path Parameters Supported by the DELETE Response Body on this Resource

Name	Data Type	Mandatory (M) or Optional(O)	Description
appname	String	M	Removes configurations on app name.

Table 2-285 Data Structures Supported by the DELETE Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.

2.28 Configuring Mediation Trigger Point

This section describes the trigger points configurations to define the filter criteria for a message to decide whether to invoke mediation or not.

Resources

The following table describes the resource name to retrieve, add, update, and remove Mediation trigger points.

Table 2-286 Resource Name

Resource Name	Resource URI	HTTP Method	Description
mediation-trigger-point-config	/ocscp/scpc-configuration/{version}/mediation-trigger-point-config	GET	Retrieves all Mediation trigger point configurations.
mediation-trigger-point-config	/ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}	GET	Retrieves Mediation trigger point configuration for the specified ruleName.
mediation-trigger-point-config	/ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}	PUT	Configures Mediation trigger point configuration for the specified data.
mediation-trigger-point-config	/ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}	PATCH	Updates the Mediation trigger point configuration by ruleName.
mediation-trigger-point-config	/ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}	DELETE	Removes the Mediation trigger point configuration for the specified ruleName.

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Data Model

The following table describes the supported data type.

Table 2-287 MediationTriggerPointConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	M	1	Unique rule name for each mediation configuration. It is a unique primary key.
triggerPoints	Array(TriggerPoint)	M	1..N	List of trigger points to be enabled if matches. One or more of the following trigger points:"requestIngress", "requestEgress", "responseIngress", "responseEgress"
nfType	NFType	C	1	NFType for which mediation configuration is required. NFType is as per 3GPP TS 29.510 Section 6.1.6.3.3 Enumeration: NFType.
serviceName	String	C	1	The service of NFType for which mediation configuration is required. NFType is as per 3GPP TS29.510 Section 6.1.6.3.11 Enumeration: ServiceName.
match	Array(Match)	O	1..N	List of match blocks to be satisfied for the rule to be activated. Minimum number of blocks is 1. Maximum number of blocks is 20.
groupId	String	O	1	groupId for which mediation configuration is required. Mediation configuration for a specific group is applicable to the mediation requests or responses received only from the same group. HTTP Mediation service consumer NFs which requires the same mediation rules can be grouped together using this groupId.
httpMethods	Array(String)	M	1..N	HTTP methods (GET,POST,PUT,PATCH,DELETE,OPTIONS)
messageType	Array(MessageType)	M	1..N	The allowed message types are [svc-request-message], [notification-message], or both [notification-message, svc-request-message].
action	Action	M	1	Action Wrapper to set the type of action to be taken on the message.

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> **Note**
>
> For each trigger point configuration, the combination of NfType, serviceName, httpMethods, messageType and triggerPoints methods must be unique. No new records can be added with the same combination.
> For example, if a configuration exists with the following values:
>
> - **ruleName:** medRule1
> - **nfType:** UDM
> - **serviceName:** nudm-uecm
> - **httpMethod:** {PUT, POST}
> - **messageType:** [notification-message, svc-request-message]
> - **triggerPoints:** [requestIngress]
>
> Then, adding a similar configuration using the same **nfType**, **serviceName**, and **httpMethods** but with a different rule name, as shown below, will not be allowed:
>
> - **ruleName:** medRule2
> - **nfType:** UDM
> - **serviceName:** nudm-uecm
> - **httpMethod:** {PUT, POST}
> - **messageType:** [notification-message, svc-request-message]
> - **triggerPoints:** [requestIngress]

Table 2-288 TriggerPoint

Order of Invocation	Enumeration value	Description
First	"requestIngress"	Mediation invocation after receiving the ingress 5G SBI request message.
Second	"requestEgress"	Mediation invocation before forwarding the 5G SBI request message.
Third	"responseIngress"	Mediation invocation after receiving the ingress 5G SBI response message.
Fourth	"responseEgress"	Mediation invocation before forwarding the 5G SBI response message.

Table 2-289 MessageType

Enumeration value	Description
"notification-message"	The message type is a notification message.
"svc-request-message"	The message type is a service request message.

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Table 2-290 Match

Field Name	Data Type	Description	Required
headers	HeaderBodyMatch[]	List of header names and values to match using MatchType comparison. All conditions within a single header block are combined with AND semantics. • Minimum number of elements/conditions: 1 • Maximum number of elements/conditions: 5	anyOf
body	HeaderBodyMatch[]	List of "body IE" JSON Pointers and their corresponding values to match using MatchType comparison. All conditions within a single body block are combined with AND semantics. • Minimum number of elements/conditions: 1 • Maximum number of elements/conditions: 5	anyOf
userDefinedVariables	HeaderBodyMatch[]	List of userDefinedVariables names (to be selected from the dropdown in CNCC) and their corresponding values to match using MatchType comparison. All conditions within a single body block are combined with AND semantics. • Minimum number of elements/conditions: 1 • Maximum number of elements/conditions: 5	anyOf

Match Parameter Semantics

- Match Blocks using OR Semantics:
  The match wrapper consists of multiple match blocks, which are evaluated using **OR semantics**. This means that for the overall match wrapper to evaluate to `true`, it is sufficient for any one match block to satisfy the conditions.

  For example, if the match wrapper contains three match blocks, the entire wrapper will be considered a match as long as at least one of the blocks matches the conditions.
- Internal Components of a Match Block (AND Semantics)
  Each match block contains three components:
  - **Body**: A list of match conditions for body fields.
  - **Headers**: A list of match conditions for headers.
  - **userDefinedVariables (UDVs)**: A list of match conditions for user-defined variables.

  These components are evaluated using AND semantics:
  - All conditions within each component (for example, all body conditions, all header conditions, and all UDV conditions) must be satisfied.
  - Furthermore, all three components (body, headers, and userDefinedVariables) must match in order for the block to be considered a match.

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Table 2-291 HeaderBodyMatch

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
name	String	M	1	Name of the header or the bodyIE or the userDefinedVariable JSON Pointer. **Note**: List of predefined headers available in this section. JSON Pointer must point to basic data types. Arrayed and Object values are not supported.
match_type	MatchType	M	1	One of the supported match operators.
value	String	C	0..1	Value of header or bodyIE or userDefinedVariable to be matched. The value is only required if match_type is not range.
range	Range	C	0..1	Range start (inclusive). It is used only when match_type is range.

> **Note**
>
> Either the value or the range attribute must be present.

Table 2-292 MatchType

Field Name	Data Type	Description	Required
exact	String	Matching is performed using the exact comparison.	oneOf
prefix	String	Matching is performed using the prefix comparison.	oneOf
range	String	Matching is performed using the range comparison.	oneOf
regex	String	Matching is performed using the ECMAScript Regular Expression comparison.	oneOf

Table 2-293 Range

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
start	String	O	0..1	The first value, that is, range start inclusive, identifying the start of the range. This string consists of only digits. Pattern: "^[0-9]+$"
end	String	O	0..1	The last value, that is, range end inclusive, identifying the end of the range. This string consists of only digits. Pattern: "^[0-9]+$"

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Table 2-294 Action

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
actionType	ActionType(String)	M	1	This parameter is to select the action for the configured trigger point rules matching the trigger point rules configuration. • Allowed Values:forwardToMediationService, setTriggerPointsInvocation **forwardToMediationService**: If the `mediationTriggerPointConfig` conditions are matched for a request, the request will be sent to the mediation service for the particular trigger point specified in the triggerPoints field where the match is successful.**setTriggerPointsInvocation**: If the `mediationTriggerPointConfig` conditions are matched for a request, the matching conditions will not be attempted again for the trigger points present in the triggerPointList field. Instead, the request will be sent directly to mediation for those trigger points.
triggerPointList	array(TriggerPoint)	C	1....N (where 1 <=N<=4)	List of trigger points to be invoked for matching the configured trigger point rule. This is only applicable for actionType = `setTriggerPointsInvocation`. Additionally, the first value in the triggerPointList should not precede the parent triggerPoints. Example (not allowed)`triggerPoints: ["requestEgress"], "action": { "actionType": "setTriggerPointsInvocation", "triggerPointList": [ "requestIngress" ] }` In this example, `"requestIngress"` is listed after `"requestEgress"`, which violates the rule that the first trigger point in the `triggerPointList` should not occur before the first trigger point in the parent `triggerPoints`.

Examples

Request body

```
{
  "groupId": "string",
  "ruleName": "string",
  "match": [
    {
      "body": [
```


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```
        {
          "range": {
              "start": 0,
              "end": 0
           },
          "match-type": "exact",
          "name": "string",
          "value": "string"
        }
      ],
      "headers": [
       {
          "range": {
              "start": 0,
              "end": 0
           },
          "match-type": "exact",
          "name": "string",
          "value": "string"
        }
      ],
     "userDefinedVariables": [
       {
          "range": {
              "start": 0,
              "end": 0
           },
          "match-type": "exact",
          "name": "string",
          "value": "string"
        }
      ]
    }
  ],
  "serviceName": "5g-sbi-notification",
  "httpMethods": ["PUT","POST"]
  "nfType": "5G_EIR",
  "triggerPoints": [
    "requestEgress"
  ],
  "messageType": [
    "notification-message"
  ],
  "action": {
     "actionType": "forwardToMediationService"
    }
}
```

Response body:

The response body for GET is the list of the following JSON structure.

The response body of PUT and PATCH is the following JSON structure.

```
{
  "groupId": "string",
```


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```
  "ruleName": "string",
  "match": [
    {
      "body": [
        {
          "range": {
              "start": 0,
              "end": 0
           },
          "match-type": "exact",
          "name": "string",
          "value": "string"
        }
      ],
      "headers": [
       {
          "range": {
              "start": 0,
              "end": 0
           },
          "match-type": "exact",
          "name": "string",
          "value": "string"
        }
      ],
      "userDefinedVariables": [
       {
          "range": {
              "start": 0,
              "end": 0
           },
          "match-type": "exact",
          "name": "string",
          "value": "string"
        }
      ]
    }
  ],
  "serviceName": "5g-sbi-notification",
  "httpMethods":  [ "PUT", "POST" ]
  "nfType": "5G_EIR",
  "triggerPoints": [
    "requestEgress"
  ],
  "messageType": [
    "notification-message"
  ],
  "action": {
      "actionType": "forwardToMediationService"
    }
}
```

Resource Definition

GET REST API

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This resource retrieves all the Mediation trigger point configurations.

Resource URI: /ocscp/scpc-configuration/{version}/mediation-trigger-point-config

Table 2-295 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationTriggerPointConfig	M	1..N	200 OK	Indicates Mediation trigger point configurations.

This resource retrieves all the Mediation trigger point configurations based on ruleName.

Resource URI: /ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}

Table 2-296 Path Parameters Supported by the GET Response Body on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Fetches configurations on ruleName

Table 2-297 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationTriggerPointConfig	M	1	200 OK	Indicates Mediation trigger point configurations.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example

Success response for GET and GET ALL

```
curl -X 'GET'   'http://10.75.213.193:32484/ocscp/scpc-configuration/v1/
mediation-trigger-point-config'   -H 'accept: application/json' -v
Note: Unnecessary use of -X or --request, GET is already inferred.
*   Trying 10.75.213.193:32484...
* Connected to 10.75.213.193 (10.75.213.193) port 32484 (#0)
> GET /ocscp/scpc-configuration/v1/mediation-trigger-point-config HTTP/1.1
> Host: 10.75.213.193:32484
> User-Agent: curl/8.1.2
> accept: application/json
>
< HTTP/1.1 200 OK
< Connection: keep-alive
< Transfer-Encoding: chunked
< Content-Type: application/json
< Date: Mon, 23 Sep 2024 14:16:25 GMT
<
[
  {
    "ruleName": "Mediation_rule1",
    "nfType": "UDR",
```


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```
    "serviceName": "nudr-group-id-map",
    "httpMethods": [
      "GET",
      "PUT"
    ],
    "match": [
      {
        "headers": [
          {
            "name": "api-version",
            "value": "v2",
            "match-type": "exact"
          }
        ],
        "body": [
          {
            "name": "/supiorSuciList/supiorsuci",
            "value": "suci-",
            "match-type": "prefix"
          }
        ]
      }
    ],
    "triggerPoints": [
      "requestEgress"
    ],
    "groupId": "group1",
    "messageType": [
      "notification-message"
    ]
  },
  {
    "ruleName": "R1",
    "serviceName": "nudm-sdm",
    "httpMethods": [
      "GET",
      "PUT"
    ],
    "match": [
      {
        "headers": [
          {
            "name": "api-version",
            "value": "v2",
            "match-type": "exact"
          }
        ],
        "body": [
          {
            "name": "/supiorSuciList/supiorsuci",
            "value": "suci-",
            "match-type": "prefix"
          }
        ]
      }
    ],
```


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```
    "triggerPoints": [
      "requestEgress"
    ],
    "groupId": "group1",
    "messageType": [
      "notification-message"
    ],

   "action": {

    "actionType": "forwardToMediationService"

    }
  }
]
```

Success response 2

```
curl -X 'GET' \
  'http://10.75.213.193:32484/ocscp/scpc-configuration/v1/mediation-trigger-
point-config/Mediation_rule1' \
  -H 'accept: application/json' -v
Note: Unnecessary use of -X or --request, GET is already inferred.
*   Trying 10.75.213.193:32484...
* Connected to 10.75.213.193 (10.75.213.193) port 32484 (#0)
> GET /ocscp/scpc-configuration/v1/mediation-trigger-point-config/
Mediation_rule1 HTTP/1.1
> Host: 10.75.213.193:32484
> User-Agent: curl/8.1.2
> accept: application/json
>
< HTTP/1.1 200 OK
< Connection: keep-alive
< Transfer-Encoding: chunked
< Content-Type: application/json
< Date: Mon, 23 Sep 2024 14:20:08 GMT
<
{
  "ruleName": "Mediation_rule1",
  "nfType": "UDR",
  "serviceName": "nudr-group-id-map",
  "httpMethods": [
    "GET",
    "PUT"
  ],
  "match": [
    {
      "headers": [
        {
          "name": "api-version",
          "value": "v2",
          "match-type": "exact"
        }
      ],
      "body": [
```


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```
        {
          "name": "/supiorSuciList/supiorsuci",
          "value": "suci-",
          "match-type": "prefix"
        }
      ]
    }
  ],
  "triggerPoints": [
    "requestEgress"
  ],
  "groupId": "group1",
  "messageType": [
    "notification-message"
  ],

  "action": {

   "actionType": "forwardToMediationService"

   }
}
```

Failure response

```
curl -X 'GET' \
  'http://10.75.213.193:32484/ocscp/scpc-configuration/v1/mediation-trigger-
point-config/med' \
  -H 'accept: application/json' -v
Note: Unnecessary use of -X or --request, GET is already inferred.
*   Trying 10.75.213.193:32484...
* Connected to 10.75.213.193 (10.75.213.193) port 32484 (#0)
> GET /ocscp/scpc-configuration/v1/mediation-trigger-point-config/med HTTP/1.1
> Host: 10.75.213.193:32484
> User-Agent: curl/8.1.2
> accept: application/json
>
< HTTP/1.1 404 Not Found
< Connection: keep-alive
< Transfer-Encoding: chunked
< Content-Type: application/problem+json
< Date: Mon, 23 Sep 2024 14:23:52 GMT
<
{
  "title": "Not Found",
  "status": 404,
  "detail": "Mediation_Configuration for given ruleName not found . Please
refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/mediation-trigger-point-config/
med",
  "cause": "DATA_NOT_FOUND"
}
```


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PUT REST API

This resource configures Mediation trigger points for the specified data.

Resource URI: /ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}

Table 2-298 Data Structures Supported by the PUT Request Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
MediationTriggerPointConfig	M	1	Indicates Mediation trigger point configurations to be added.

Table 2-299 Data Structures Supported by the PUT Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationTriggerPointConfig	M	1	200 OK	Indicates Mediation trigger point configurations.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.

Example
Success response

```
curl -X 'PUT' \
  'http://10.75.212.240:30454/ocscp/scpc-configuration/v1/mediation-trigger-
point-config/Mediation_rule1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "ruleName": "Mediation_rule1",
      "nfType": "UDR",
    "serviceName": "nudr-group-id-map",
    "httpMethods": [
      "GET",
      "PUT"
    ],
    "match": [
      {
        "headers": [
          {
            "name": "api-version",
            "value": "v2",
            "match-type": "exact"
          }
        ],
        "body": [
          {
            "name": "/supiorSuciList/supiorsuci",
            "value": "suci-",
            "match-type": "prefix"
```


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```
            }
          ],
          "userDefinedVariables": [
            {
              "name": "udv-1",
              "value": "376",
              "match-type":"exact"
            }
          ]
        }
      ],
      "triggerPoints": [
        "requestEgress"
      ],
      "groupId": "group1",
      "messageType": [
        "notification-message"
      ],
      "action": {
      "actionType": "forwardToMediationService"
      }
    }'
```

Failure response

```
curl -X 'PUT' \
  'http://10.75.212.240:30454/ocscp/scpc-configuration/v1/mediation-trigger-
point-config/Mediation_rule' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
    "ruleName": "Mediation_rule1",
      "nfType": "UDR",
    "serviceName": "nudr-group-id-map",
    "httpMethods": [
      "GET",
      "PUT"
    ],
    "match": [
      {
        "headers": [
          {
            "name": "api-version",
            "value": "v2",
            "match-type": "exact"
          }
        ],
        "body": [
          {
            "name": "/supiorSuciList/supiorsuci",
            "value": "suci-",
            "match-type": "prefix"
          }
        ],
        "userDefinedVariables": [
```


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```
            {
              "name": "udv-1",
              "value": "376",
              "match-type":"exact"
            }
          ]
        }
      ],
      "triggerPoints": [
        "requestEgress"
      ],
      "groupId": "group1",
      "messageType": [
        "notification-message"
      ],
      "action": {
      "actionType": "setTriggerPointsInvocation",
      "triggerPointList": [
        "responseIngress"
      ]
      }
    }' -v
```

PATCH REST API

This resource updates the Mediation trigger point configuration for the specified data.

Resource URI: /ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}

Table 2-300 Data Structures Supported by the PATCH Request Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
string	M	1	The patch body in the string format that must be updated.

Table 2-301 Data Structures Supported by the PATCH Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationTriggerPointConfig	M	1	200 OK	Indicates Mediation trigger point configurations.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example

Success response:

```
curl -X PATCH "http://10.75.215.251:30131/ocscp/scpc-configuration/v1/
mediation-trigger-point-config/Mediation_rule1" -H "Content-Type: application/
```


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```
merge-patch+json" -d '[{ "op": "replace", "path": "/match/0/headers/0/name",
"value":"amfId" }]

HTTP/1.1 200 OK
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/json
Date: Tue, 24 May 2022 12:26:55 GMT

* Connection #0 to host 10.75.215.251 left intact
{"ruleName":"Mediation_rule1","nfType":"UDR","serviceName":"nudr-group-id-
map","httpMethods":["PUT"],"match":[{"headers":
[{"name":"amfId","value":"v2","match-type":"exact"}],"body":
[{"name":"amfId","value":"100","match-type":"prefix"}]}],"triggerPoints":
["requestEgress","requestIngress","responseEgress"],"groupId":"group1"}
```

Failure response -1

```
curl -X PATCH "http://10.75.215.251:30131/ocscp/scpc-configuration/v1/
mediation-trigger-point-config/Mediation_rule1" -H "Content-Type: application/
merge-patch+json" -d '[{ "op": "replace", "path": "/match/0/headers/0/name",
"value":"amfId" }]

 HTTP/1.1 404 Not Found
 Connection: keep-alive
 Transfer-Encoding: chunked
 Content-Type: application/problem+json
 Date: Tue, 24 May 2022 12:23:18 GMT

* Connection #0 to host 10.75.215.251 left intact
{"title":"Not Found","status":"404","detail":"Mediation_Configuration for
given RuleName not found . Please refer to the User Guide.'ruleName':
Mediation_rule1","instance":"/ocscp/scpc-configuration/v1/mediation-trigger-
point-config/Mediation_rule1","cause":"DATA_NOT_FOUND"}
```

Failure response -2

```
curl -X PATCH "http://10.75.215.251:30131/ocscp/scpc-configuration/v1/
mediation-trigger-point-config/Mediation_rule1" -H "Content-Type: application/
merge-patch+json" -d '[{ "op": "replace", "path": "match/0/headers/match-
type", "value":"prefix" }]

HTTP/1.1 400 Bad Request
Connection: keep-alive
Transfer-Encoding: chunked
Content-Type: application/problem+json
Date: Tue, 24 May 2022 12:26:21 GMT

* Connection #0 to host 10.75.215.251 left intact
{"title":"Bad Request","status":"400","detail":"Invalid Patch
Document","instance":"/ocscp/scpc-configuration/v1/mediation-trigger-point-
config/Mediation_rule1","cause":"INVALID_REQUEST_BODY"}
```


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DELETE REST API

This resource retrieves all the Mediation trigger point configuration based on ruleName.

Resource URI: /ocscp/scpc-configuration/{version}/mediation-trigger-point-config/{ruleName}

Table 2-302 Path Parameters Supported by the DELETE Response Body on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Removes configurations on ruleName

Table 2-303 Data Structures Supported by the DELETE Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example

Success response

```
curl -X DELETE "http://10.75.215.251:30131/ocscp/scpc-configuration/v1/
mediation-trigger-point-config/med1" -H "accept: application/json"

HTTP/1.1 204 No Content
Date: Tue, 24 May 2022 12:22:00 GMT
```

Failure response

```
curl -X DELETE "http://10.75.215.251:30131/ocscp/scpc-configuration/v1/
mediation-trigger-point-config/med1" -H "accept: application/json"

 HTTP/1.1 404 Not Found
 Connection: keep-alive
 Transfer-Encoding: chunked
 Content-Type: application/problem+json
 Date: Tue, 24 May 2022 12:05:38 GMT

{
  "title": "Not Found",
  "status": "404",
  "detail": "Mediation_Configuration for given RuleName not found . Please
refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/mediation-trigger-point-config/
med1",
  "cause": "DATA_NOT_FOUND"
}
```


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2.29 Configuring Mediation Rule

This section describes the configuration of mediation rules for creating, modifying, and deleting Mediation rules using the Rest API.

Resources

The following table describes the resource name to retrieve, add, update, and remove Mediation rules.

Table 2-304 Resource Name

Resource Name	Resource URI	HTTP Method	Description
HTTP Mediation	• ${mediationConfig.baseUrl}/mediation/v1/rules • ${mediationConfig.baseUrl}/mediation/v1/rules/	GET	Retrieves all Mediation rules.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/rules/{ruleName}	GET	Retrieves Mediation rule for the specified ruleName.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/rules/{ruleName}	PUT	Updates the Mediation rule.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/rules/{ruleName}	POST	Creates the Mediation rule.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/rules/{ruleName}	DELETE	Removes the Mediation rule.

> **Note**
>
> As mediation can be used by other NFs, a base URL is needed. This is defined in properties as ${mediationConfig.baseUrl}. In the case of SCP, the value is: /ocscp/scpc-configuration, creating the URL like this: /ocscp/scpc-configuration/mediation/v1/rules

Data Model

The following table describes the supported data type.

Table 2-305 MediationRulesConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	M	1	Unique rule name for each mediation rule. It is a unique primary key.
format	String	M	1	Indicates the Format in which the rules are defined, such as DRL.

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Table 2-305 (Cont.) MediationRulesConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
status	String	M	1	Indicates the status of the rule. It can have the following values: • DRAFT • APPLIED The following fields are allowed to be modified in DRAFT status: Mediation Mode, Code, and State. The valid values for state are SAVE, CLONE, COMPILE, and APPLY. The Mediation Mode can only be modified in APPLIED status. The valid values for state are SAVE, CLONE, or DRAFT.
mode	String	M	1	Indicated whether the rule applies to mediation active or mediation test. • Mediation Active allows actual messages to be manipulated according to configured mediation rules. • Mediation Test executes the mediation rule on message copy instead of the actual message and verifies the behavior of the mediation rule.
state	String	M	1	Indicates the action to be applied to the rule. The default value is SAVE **Note**:The DRAFT state is an invalid transition that could lead to an error.
code	String	M	1	Indicates the configurable drool expression that matches the request/response headers and body sent by SCP.
New Rule Name	String	M	1	Indicates the new name of the rule. This field appears when a CLONE state is selected.

> **Note**
>
> For each mediation rule configuration, the rule name must be unique. No new rules can be added with the same name.

Request Body JSON Format

```
{
    "name": "string",
    "format": "DRL",
    "status": ["DRAFT","APPLIED"],
    "mode": ["MEDIATION_ACTIVE","MEDIATION_TEST"],
    "state":  ["SAVE","APPLY","DRAFT","COMPILE","CLONE"],
    "code": "string"
}
```


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Example

```
{
    "name": "ruleTest1",
    "format": "DRL",
    "status": "DRAFT",
    "mode": "MEDIATION_TEST",
    "state":  "SAVE",
    "code": "package com.oracle.cgbu.ocmediation.nfmediation;\n  \nimport
com.oracle.cgbu.ocmediation.factdetails.Request;\nimport
com.oracle.cgbu.ocmediation.factdetails.Response;\nimport
java.util.Map;\nimport java.util.HashMap; \ndialect \"mvel\"\n\nrule
\"ruleTest1\"\nwhen\n   req : Request(headers.has(\"Header1\") == true)\nthen
\n   req.headers.add(\"NewHeader1\",\"132465\")\nend"
}
```

Response Body JSON Format

```
{
    "name": "string",
    "format": "DRL",
    "mode": ["MEDIATION_ACTIVE","MEDIATION_TEST"],
    "status": ["DRAFT","APPLIED"],
    "code": "string"
}
```

Example

```
{
    "name": "ruleTest1",
    "format": "DRL",
    "mode": "MEDIATION_ACTIVE",
    "status": "DRAFT",
    "code": "package com.oracle.cgbu.ocmediation.nfmediation;\n  \nimport
com.oracle.cgbu.ocmediation.factdetails.Request;\nimport
com.oracle.cgbu.ocmediation.factdetails.Response;\nimport
java.util.Map;\nimport java.util.HashMap; \ndialect \"mvel\"\n\nrule
\"ruleTest1\"\nwhen\n   req : Request(headers.has(\"Header1\") == true)\nthen
\n   req.headers.add(\"NewHeader1\",\"132465\")\nend"
}
```

Resource Definition

GET REST API

This resource retrieves all the Mediation rules.

Resource URI: /ocscp/scpc-configuration/mediation/v1/rules

Table 2-306 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationRules	M	1..N	200 OK	Indicates Mediation rules.

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This resource retrieves all the Mediation rules based on ruleName.

Resource URI: /ocscp/scpc-configuration/mediation/v1/rules/{ruleName}

Table 2-307 Path Parameters Supported by the GET Response Body on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Fetches rule by ruleName

Table 2-308 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationRule	M	1	200 OK	Indicates Mediation rules.
ProblemDetails	M	1	404 NOT FOUND	Indicates that there is no matching entry found.

Example

Success response for GET ALL

```
curl -X GET "http://10.75.213.183:31612/ocscp/scpc-configuration/mediation/v1/
rules"
    -H "accept: application/json"


[
    {
        "name": "ruleTest0",
        "format": "DRL",
        "mode": "MEDIATION_ACTIVE",
        "status": "DRAFT",
        "code": "package com.oracle.cgbu.ocmediation.nfmediation; import
com.oracle.cgbu.ocmediation.factdetails.Request; dialect \"mvel\" rule
\"ruleTest0\" when req : Request(headers.has(\"NewTest0\") == true) then
req.headers.add(\"Test0\",\"0\") end"
    },
    {
        "name": "ruleTest1",
        "format": "DRL",
        "mode": "MEDIATION_ACTIVE",
        "status": "DRAFT",
        "code": "package com.oracle.cgbu.ocmediation.nfmediation; import
com.oracle.cgbu.ocmediation.factdetails.Request; dialect \"mvel\" rule
\"ruleTest1\" when req : Request(headers.has(\"NewTest1\") == true) then
req.headers.add(\"Test1\",\"1\") end"
    }
]
```


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Success response for GET

```
curl -X GET "http://10.75.213.183:31612/ocscp/scpc-configuration/mediation/v1/
rules/ruleTest0" -H
    "accept: application/json"


{
    "name": "ruleTest0",
    "format": "DRL",
    "mode": "MEDIATION_ACTIVE",
    "status": "DRAFT",
    "code": "package com.oracle.cgbu.ocmediation.nfmediation; import
com.oracle.cgbu.ocmediation.factdetails.Request; dialect \"mvel\" rule
\"ruleTest0\" when req : Request(headers.has(\"NewTest0\") == true) then
req.headers.add(\"Test0\",\"0\") end"
}
```

Failure response

```
curl -X GET "http://10.75.213.183:31612/ocscp/scpc-configuration/mediation/v1/
rules/ruleTest$" -H
      "accept: application/json"


{
    "title": "NOT_FOUND",
    "status": 404,
    "detail": "Rule: ruleTest$  was not found",
    "cause":
"com.oracle.cgbu.ocmediationconfig.service.RulesConfigService.lambda$findByNam
e$0(RulesConfigService.java:45)\njava.base/
java.util.Optional.orElseThrow(Optional.java:403)\ncom.oracle.cgbu.ocmediation
config.service.RulesConfigService.findByName(RulesConfigService.java:45)\ncom.
oracle.cgbu.ocmediationconfig.controller.RulesConfigController.getRuleByName(R
ulesConfigController.java:45)\njava.base/
jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
\njava.base/
jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.
java:77)\njava.base/
jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAcces
sorImpl.java:43)\njava.base/
java.lang.reflect.Method.invoke(Method.java:568)\norg.springframework.web.meth
od.support.InvocableHandlerMethod.doInvoke(InvocableHandlerMethod.java:205)\no
rg.springframework.web.method.support.InvocableHandlerMethod.invokeForRequest(
InvocableHandlerMethod.java:150)\norg.springframework.web.servlet.mvc.method.a
nnotation.ServletInvocableHandlerMethod.invokeAndHandle(ServletInvocableHandle
rMethod.java:117)\norg.springframework.web.servlet.mvc.method.annotation.Reque
stMappingHandlerAdapter.invokeHandlerMethod(RequestMappingHandlerAdapter.java:
895)\norg.springframework.web.servlet.mvc.method.annotation.RequestMappingHand
lerAdapter.handleInternal(RequestMappingHandlerAdapter.java:808)\norg.springfr
amework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.handle(AbstractHan
dlerMethodAdapter.java:87)\norg.springframework.web.servlet.DispatcherServlet.
doDispatch(DispatcherServlet.java:1072)\norg.springframework.web.servlet.Dispa
tcherServlet.doService(DispatcherServlet.java:965)\norg.springframework.web.se
```


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rvlet.FrameworkServlet.processRequest(FrameworkServlet.java:1006)\norg.springf
ramework.web.servlet.FrameworkServlet.doGet(FrameworkServlet.java:898)\njavax.
servlet.http.HttpServlet.service(HttpServlet.java:497)\norg.springframework.we
b.servlet.FrameworkServlet.service(FrameworkServlet.java:883)\njavax.servlet.h
ttp.HttpServlet.service(HttpServlet.java:584)\nio.undertow.servlet.handlers.Se
rvletHandler.handleRequest(ServletHandler.java:74)\nio.undertow.servlet.handle
rs.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:129)\norg.springf
ramework.web.filter.RequestContextFilter.doFilterInternal(RequestContextFilter
.java:100)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(Once
erRequestFilter.java:117)\nio.undertow.servlet.core.ManagedFilter.doFilter(Man
agedFilter.java:61)\nio.undertow.servlet.handlers.FilterHandler$FilterChainImp
l.doFilter(FilterHandler.java:131)\norg.springframework.web.filter.FormContent
Filter.doFilterInternal(FormContentFilter.java:93)\norg.springframework.web.fi
lter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:117)\nio.undertow
.servlet.core.ManagedFilter.doFilter(ManagedFilter.java:61)\nio.undertow.servl
et.handlers.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\nor
g.springframework.boot.actuate.metrics.web.servlet.WebMvcMetricsFilter.doFilte
rInternal(WebMvcMetricsFilter.java:96)\norg.springframework.web.filter.OncePer
RequestFilter.doFilter(OncePerRequestFilter.java:117)\nio.undertow.servlet.cor
e.ManagedFilter.doFilter(ManagedFilter.java:61)\nio.undertow.servlet.handlers.
FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\norg.springfram
ework.web.filter.CharacterEncodingFilter.doFilterInternal(CharacterEncodingFil
ter.java:201)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(On
cePerRequestFilter.java:117)\nio.undertow.servlet.core.ManagedFilter.doFilter(
ManagedFilter.java:61)\nio.undertow.servlet.handlers.FilterHandler$FilterChain
Impl.doFilter(FilterHandler.java:131)\nio.undertow.servlet.handlers.FilterHand
ler.handleRequest(FilterHandler.java:84)\nio.undertow.servlet.handlers.securit
y.ServletSecurityRoleHandler.handleRequest(ServletSecurityRoleHandler.java:62)
\nio.undertow.servlet.handlers.ServletChain$1.handleRequest(ServletChain.java:
68)\nio.undertow.servlet.handlers.ServletDispatchingHandler.handleRequest(Serv
letDispatchingHandler.java:36)\nio.undertow.servlet.handlers.RedirectDirHandle
r.handleRequest(RedirectDirHandler.java:68)\nio.undertow.servlet.handlers.secu
rity.SSLInformationAssociationHandler.handleRequest(SSLInformationAssociationH
andler.java:117)\nio.undertow.servlet.handlers.security.ServletAuthenticationC
allHandler.handleRequest(ServletAuthenticationCallHandler.java:57)\nio.underto
w.server.handlers.PredicateHandler.handleRequest(PredicateHandler.java:43)\nio
.undertow.security.handlers.AbstractConfidentialityHandler.handleRequest(Abstr
actConfidentialityHandler.java:46)\nio.undertow.servlet.handlers.security.Serv
letConfidentialityConstraintHandler.handleRequest(ServletConfidentialityConstr
aintHandler.java:64)\nio.undertow.security.handlers.AuthenticationMechanismsHa
ndler.handleRequest(AuthenticationMechanismsHandler.java:60)\nio.undertow.serv
let.handlers.security.CachedAuthenticatedSessionHandler.handleRequest(CachedAu
thenticatedSessionHandler.java:77)\nio.undertow.security.handlers.AbstractSecu
rityContextAssociationHandler.handleRequest(AbstractSecurityContextAssociation
Handler.java:43)\nio.undertow.server.handlers.PredicateHandler.handleRequest(P
redicateHandler.java:43)\nio.undertow.servlet.handlers.SendErrorPageHandler.ha
ndleRequest(SendErrorPageHandler.java:52)\nio.undertow.server.handlers.Predica
teHandler.handleRequest(PredicateHandler.java:43)\nio.undertow.servlet.handler
s.ServletInitialHandler.handleFirstRequest(ServletInitialHandler.java:275)\nio
.undertow.servlet.handlers.ServletInitialHandler.access$100(ServletInitialHand
ler.java:79)\nio.undertow.servlet.handlers.ServletInitialHandler$2.call(Servle
tInitialHandler.java:134)\nio.undertow.servlet.handlers.ServletInitialHandler$
2.call(ServletInitialHandler.java:131)\nio.undertow.servlet.core.ServletReques
tContextThreadSetupAction$1.call(ServletRequestContextThreadSetupAction.java:4
8)\nio.undertow.servlet.core.ContextClassLoaderSetupAction$1.call(ContextClass
LoaderSetupAction.java:43)\nio.undertow.servlet.handlers.ServletInitialHandler

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```
.dispatchRequest(ServletInitialHandler.java:255)\nio.undertow.servlet.handlers
.ServletInitialHandler.access$000(ServletInitialHandler.java:79)\nio.undertow.
servlet.handlers.ServletInitialHandler$1.handleRequest(ServletInitialHandler.j
ava:100)\nio.undertow.server.Connectors.executeRootHandler(Connectors.java:387
)
\nio.undertow.server.HttpServerExchange$1.run(HttpServerExchange.java:852)\nor
g.jboss.threads.ContextClassLoaderSavingRunnable.run(ContextClassLoaderSavingR
unnable.java:35)\norg.jboss.threads.EnhancedQueueExecutor.safeRun(EnhancedQueu
eExecutor.java:2019)\norg.jboss.threads.EnhancedQueueExecutor$ThreadBody.doRun
Task(EnhancedQueueExecutor.java:1558)\norg.jboss.threads.EnhancedQueueExecutor
$ThreadBody.run(EnhancedQueueExecutor.java:1449)\norg.xnio.XnioWorker$WorkerTh
readFactory$1$1.run(XnioWorker.java:1282)\njava.base/
java.lang.Thread.run(Thread.java:842)"
}
```

PUT REST API

This resource modifies the Mediation rules for the specified data.

Resource URI: /ocscp/scpc-configuration/mediation/v1/rules/{ruleName}

Table 2-309 Path Parameters Supported by the PUT Response Body on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Modify rule by ruleName

Table 2-310 Data Structures Supported by the PUT Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationRule	M	1	200 OK	Modify Mediation rules.
ProblemDetails	M	1	400 BAD REQUEST	Indicates that there is no matching entry found.

Example

Success response for PUT

```
curl -X PUT "http://10.75.213.183:31612/ocscp/scpc-configuration/mediation/v1/
rules/ruleTest0" -H
    "accept: application/json


{
    "name": "ruleTest0",
    "format": "DRL",
    "mode": "MEDIATION_ACTIVE",
    "status": "DRAFT",
    "code": "package com.oracle.cgbu.ocmediation.nfmediation;\n  \nimport
com.oracle.cgbu.ocmediation.factdetails.Request;\nimport
com.oracle.cgbu.ocmediation.factdetails.Response;\nimport
java.util.Map;\nimport java.util.HashMap; \ndialect \"mvel\"\n\nrule
\"rule_test456\"\nwhen\n   req : Request(headers.has(\"OtherStuff\") == true)
```


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```
\nthen \n   req.headers.add(\"TEST\",\"132465\")\nend"
}
```

Failure response

```
curl -X PUT "http://10.75.213.183:31612/ocscp/scpc-configuration/mediation/v1/
rules/ruleTest0" -H
      "accept: application/json" -d  '{"name": "ruleTest0","format":
    "DRL","status": "DRAFT","mode": "MEDIATION_TEST","state":
     "SAVE"}'


{
    "title": "BAD_REQUEST",
    "status": 400,
    "detail": "Fields: [code], are required and missing for rules with state:
SAVE",
    "cause":
"com.oracle.cgbu.ocmediationconfig.validator.RuleConfigValidator.validateRequi
redFields(RuleConfigValidator.java:40)\ncom.oracle.cgbu.ocmediationconfig.serv
ice.RulesConfigService.saveRuleByName(RulesConfigService.java:59)\ncom.oracle.
cgbu.ocmediationconfig.controller.RulesConfigController.saveRuleByName(RulesCo
nfigController.java:67)\njava.base/
jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
\njava.base/
jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.
java:77)\njava.base/
jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAcces
sorImpl.java:43)\njava.base/
java.lang.reflect.Method.invoke(Method.java:568)\norg.springframework.web.meth
od.support.InvocableHandlerMethod.doInvoke(InvocableHandlerMethod.java:205)\no
rg.springframework.web.method.support.InvocableHandlerMethod.invokeForRequest(
InvocableHandlerMethod.java:150)\norg.springframework.web.servlet.mvc.method.a
nnotation.ServletInvocableHandlerMethod.invokeAndHandle(ServletInvocableHandle
rMethod.java:117)\norg.springframework.web.servlet.mvc.method.annotation.Reque
stMappingHandlerAdapter.invokeHandlerMethod(RequestMappingHandlerAdapter.java:
895)\norg.springframework.web.servlet.mvc.method.annotation.RequestMappingHand
lerAdapter.handleInternal(RequestMappingHandlerAdapter.java:808)\norg.springfr
amework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.handle(AbstractHan
dlerMethodAdapter.java:87)\norg.springframework.web.servlet.DispatcherServlet.
doDispatch(DispatcherServlet.java:1072)\norg.springframework.web.servlet.Dispa
tcherServlet.doService(DispatcherServlet.java:965)\norg.springframework.web.se
rvlet.FrameworkServlet.processRequest(FrameworkServlet.java:1006)\norg.springf
ramework.web.servlet.FrameworkServlet.doPut(FrameworkServlet.java:920)\njavax.
servlet.http.HttpServlet.service(HttpServlet.java:520)\norg.springframework.we
b.servlet.FrameworkServlet.service(FrameworkServlet.java:883)\njavax.servlet.h
ttp.HttpServlet.service(HttpServlet.java:584)\nio.undertow.servlet.handlers.Se
rvletHandler.handleRequest(ServletHandler.java:74)\nio.undertow.servlet.handle
rs.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:129)\norg.springf
ramework.web.filter.RequestContextFilter.doFilterInternal(RequestContextFilter
.java:100)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(Once
erRequestFilter.java:117)\nio.undertow.servlet.core.ManagedFilter.doFilter(Man
agedFilter.java:61)\nio.undertow.servlet.handlers.FilterHandler$FilterChainImp
l.doFilter(FilterHandler.java:131)\norg.springframework.web.filter.FormContent
Filter.doFilterInternal(FormContentFilter.java:93)\norg.springframework.web.fi
```


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lter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:117)\nio.undertow
.servlet.core.ManagedFilter.doFilter(ManagedFilter.java:61)\nio.undertow.servl
et.handlers.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\nor
g.springframework.boot.actuate.metrics.web.servlet.WebMvcMetricsFilter.doFilte
rInternal(WebMvcMetricsFilter.java:96)\norg.springframework.web.filter.OncePer
RequestFilter.doFilter(OncePerRequestFilter.java:117)\nio.undertow.servlet.cor
e.ManagedFilter.doFilter(ManagedFilter.java:61)\nio.undertow.servlet.handlers.
FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\norg.springfram
ework.web.filter.CharacterEncodingFilter.doFilterInternal(CharacterEncodingFil
ter.java:201)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(On
cePerRequestFilter.java:117)\nio.undertow.servlet.core.ManagedFilter.doFilter(
ManagedFilter.java:61)\nio.undertow.servlet.handlers.FilterHandler$FilterChain
Impl.doFilter(FilterHandler.java:131)\nio.undertow.servlet.handlers.FilterHand
ler.handleRequest(FilterHandler.java:84)\nio.undertow.servlet.handlers.securit
y.ServletSecurityRoleHandler.handleRequest(ServletSecurityRoleHandler.java:62)
\nio.undertow.servlet.handlers.ServletChain$1.handleRequest(ServletChain.java:
68)\nio.undertow.servlet.handlers.ServletDispatchingHandler.handleRequest(Serv
letDispatchingHandler.java:36)\nio.undertow.servlet.handlers.RedirectDirHandle
r.handleRequest(RedirectDirHandler.java:68)\nio.undertow.servlet.handlers.secu
rity.SSLInformationAssociationHandler.handleRequest(SSLInformationAssociationH
andler.java:117)\nio.undertow.servlet.handlers.security.ServletAuthenticationC
allHandler.handleRequest(ServletAuthenticationCallHandler.java:57)\nio.underto
w.server.handlers.PredicateHandler.handleRequest(PredicateHandler.java:43)\nio
.undertow.security.handlers.AbstractConfidentialityHandler.handleRequest(Abstr
actConfidentialityHandler.java:46)\nio.undertow.servlet.handlers.security.Serv
letConfidentialityConstraintHandler.handleRequest(ServletConfidentialityConstr
aintHandler.java:64)\nio.undertow.security.handlers.AuthenticationMechanismsHa
ndler.handleRequest(AuthenticationMechanismsHandler.java:60)\nio.undertow.serv
let.handlers.security.CachedAuthenticatedSessionHandler.handleRequest(CachedAu
thenticatedSessionHandler.java:77)\nio.undertow.security.handlers.AbstractSecu
rityContextAssociationHandler.handleRequest(AbstractSecurityContextAssociation
Handler.java:43)\nio.undertow.server.handlers.PredicateHandler.handleRequest(P
redicateHandler.java:43)\nio.undertow.servlet.handlers.SendErrorPageHandler.ha
ndleRequest(SendErrorPageHandler.java:52)\nio.undertow.server.handlers.Predica
teHandler.handleRequest(PredicateHandler.java:43)\nio.undertow.servlet.handler
s.ServletInitialHandler.handleFirstRequest(ServletInitialHandler.java:275)\nio
.undertow.servlet.handlers.ServletInitialHandler.access$100(ServletInitialHand
ler.java:79)\nio.undertow.servlet.handlers.ServletInitialHandler$2.call(Servle
tInitialHandler.java:134)\nio.undertow.servlet.handlers.ServletInitialHandler$
2.call(ServletInitialHandler.java:131)\nio.undertow.servlet.core.ServletReques
tContextThreadSetupAction$1.call(ServletRequestContextThreadSetupAction.java:4
8)\nio.undertow.servlet.core.ContextClassLoaderSetupAction$1.call(ContextClass
LoaderSetupAction.java:43)\nio.undertow.servlet.handlers.ServletInitialHandler
.dispatchRequest(ServletInitialHandler.java:255)\nio.undertow.servlet.handlers
.ServletInitialHandler.access$000(ServletInitialHandler.java:79)\nio.undertow.
servlet.handlers.ServletInitialHandler$1.handleRequest(ServletInitialHandler.j
ava:100)\nio.undertow.server.Connectors.executeRootHandler(Connectors.java:387
)
\nio.undertow.server.HttpServerExchange$1.run(HttpServerExchange.java:852)\nor
g.jboss.threads.ContextClassLoaderSavingRunnable.run(ContextClassLoaderSavingR
unnable.java:35)\norg.jboss.threads.EnhancedQueueExecutor.safeRun(EnhancedQueu
eExecutor.java:2019)\norg.jboss.threads.EnhancedQueueExecutor$ThreadBody.doRun
Task(EnhancedQueueExecutor.java:1558)\norg.jboss.threads.EnhancedQueueExecutor
$ThreadBody.run(EnhancedQueueExecutor.java:1449)\norg.xnio.XnioWorker$WorkerTh
readFactory$1$1.run(XnioWorker.java:1282)\njava.base/

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```
java.lang.Thread.run(Thread.java:842)"
}
```

POST REST API

This resource creates Mediation rules based on ruleName.

Resource URI: /ocscp/scpc-configuration/mediation/v1/rules/{ruleName}

Table 2-311 Path Parameters Supported by the POST Response Body on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Modify Mediation rules by ruleName

Table 2-312 Data Structures Supported by the POST Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationRule	M	1	201 CREATED	Creates Mediation rule.
ProblemDetails	M	1	404	Indicates that there is no matching entry found.

Example

Success response for POST

```
curl -X POST "http://10.75.213.183:31612/ocscp/scpc-configuration/
mediation/v1/rules/ruleTest0"  -H
    "accept: application/json" -d  '{"name": "ruleTest0","format":
"DRL","status":
    "DRAFT","mode": "MEDIATION_TEST","state":   "SAVE","code": "package
    com.oracle.cgbu.ocmediation.nfmediation;\n   \nimport
    com.oracle.cgbu.ocmediation.factdetails.Request;\nimport
    com.oracle.cgbu.ocmediation.factdetails.Response;\nimport
java.util.Map;\nimport
    java.util.HashMap; \ndialect \"mvel\"\n\nrule  \"rule_test456\"\nwhen\n
req :
    Request(headers.has(\"OtherStuff\") ==  true)\nthen \n
    req.headers.add(\"TEST\",\"132465\")\nend"}'


{
    "name": "ruleTest0",
    "format": "DRL",
    "mode": "MEDIATION_ACTIVE",
    "status": "DRAFT",
    "code": "package com.oracle.cgbu.ocmediation.nfmediation;\n  \nimport
com.oracle.cgbu.ocmediation.factdetails.Request;\nimport
com.oracle.cgbu.ocmediation.factdetails.Response;\nimport
java.util.Map;\nimport java.util.HashMap; \ndialect \"mvel\"\n\nrule
\"rule_test456\"\nwhen\n   req : Request(headers.has(\"OtherStuff\") == true)
\nthen \n   req.headers.add(\"TEST\",\"132465\")\nend"
}
```


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Failure response for POST

```
curl -X POST "http://10.75.213.183:31612/ocscp/scpc-configuration/
mediation/v1/rules/ruleTest0" -H
      "accept: application/json" -d  '{"name": "ruleTest0","format":
    "DRL","status": "DRAFT","mode": "MEDIATION_TEST","state":
     "SAVE"}'


{
  "title": "BAD_REQUEST",
  "status": 400,
  "detail": "Rule: ruleTest0  already exists in database.",
  "cause":
"com.oracle.cgbu.ocmediationconfig.service.RulesConfigService.validateCreation
Rule(RulesConfigService.java:89)\ncom.oracle.cgbu.ocmediationconfig.controller
.RulesConfigController.createRuleByName(RulesConfigController.java:74)\njdk.in
ternal.reflect.GeneratedMethodAccessor840.invoke(Unknown Source)\njava.base/
jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAcces
sorImpl.java:43)\njava.base/
java.lang.reflect.Method.invoke(Method.java:568)\norg.springframework.web.meth
od.support.InvocableHandlerMethod.doInvoke(InvocableHandlerMethod.java:205)\no
rg.springframework.web.method.support.InvocableHandlerMethod.invokeForRequest(
InvocableHandlerMethod.java:150)\norg.springframework.web.servlet.mvc.method.a
nnotation.ServletInvocableHandlerMethod.invokeAndHandle(ServletInvocableHandle
rMethod.java:118)\norg.springframework.web.servlet.mvc.method.annotation.Reque
stMappingHandlerAdapter.invokeHandlerMethod(RequestMappingHandlerAdapter.java:
884)\norg.springframework.web.servlet.mvc.method.annotation.RequestMappingHand
lerAdapter.handleInternal(RequestMappingHandlerAdapter.java:797)\norg.springfr
amework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.handle(AbstractHan
dlerMethodAdapter.java:87)\norg.springframework.web.servlet.DispatcherServlet.
doDispatch(DispatcherServlet.java:1081)\norg.springframework.web.servlet.Dispa
tcherServlet.doService(DispatcherServlet.java:974)\norg.springframework.web.se
rvlet.FrameworkServlet.processRequest(FrameworkServlet.java:1014)\norg.springf
ramework.web.servlet.FrameworkServlet.doPost(FrameworkServlet.java:914)\njakar
ta.servlet.http.HttpServlet.service(HttpServlet.java:547)\norg.springframework
.web.servlet.FrameworkServlet.service(FrameworkServlet.java:885)\njakarta.serv
let.http.HttpServlet.service(HttpServlet.java:614)\nio.undertow.servlet.handle
rs.ServletHandler.handleRequest(ServletHandler.java:74)\nio.undertow.servlet.h
andlers.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:129)\norg.sp
ringframework.web.filter.RequestContextFilter.doFilterInternal(RequestContextF
ilter.java:100)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(
OncePerRequestFilter.java:116)\nio.undertow.servlet.core.ManagedFilter.doFilte
r(ManagedFilter.java:67)\nio.undertow.servlet.handlers.FilterHandler$FilterCha
inImpl.doFilter(FilterHandler.java:131)\norg.springframework.web.filter.FormCo
ntentFilter.doFilterInternal(FormContentFilter.java:93)\norg.springframework.w
eb.filter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:116)\nio.und
ertow.servlet.core.ManagedFilter.doFilter(ManagedFilter.java:67)\nio.undertow.
servlet.handlers.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131
)
\norg.springframework.web.filter.ServerHttpObservationFilter.doFilterInternal(
ServerHttpObservationFilter.java:109)\norg.springframework.web.filter.OncePerR
equestFilter.doFilter(OncePerRequestFilter.java:116)\nio.undertow.servlet.core
.ManagedFilter.doFilter(ManagedFilter.java:67)\nio.undertow.servlet.handlers.F
ilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\norg.springframe
work.web.filter.CharacterEncodingFilter.doFilterInternal(CharacterEncodingFilt
```


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er.java:201)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(Onc
ePerRequestFilter.java:116)\nio.undertow.servlet.core.ManagedFilter.doFilter(M
anagedFilter.java:67)\nio.undertow.servlet.handlers.FilterHandler$FilterChainI
mpl.doFilter(FilterHandler.java:131)\nio.undertow.servlet.handlers.FilterHandl
er.handleRequest(FilterHandler.java:84)\nio.undertow.servlet.handlers.security
.ServletSecurityRoleHandler.handleRequest(ServletSecurityRoleHandler.java:62)\
nio.undertow.servlet.handlers.ServletChain$1.handleRequest(ServletChain.java:6
8)\nio.undertow.servlet.handlers.ServletDispatchingHandler.handleRequest(Servl
etDispatchingHandler.java:36)\nio.undertow.servlet.handlers.RedirectDirHandler
.handleRequest(RedirectDirHandler.java:68)\nio.undertow.servlet.handlers.secur
ity.SSLInformationAssociationHandler.handleRequest(SSLInformationAssociationHa
ndler.java:117)\nio.undertow.servlet.handlers.security.ServletAuthenticationCa
llHandler.handleRequest(ServletAuthenticationCallHandler.java:57)\nio.undertow
.server.handlers.PredicateHandler.handleRequest(PredicateHandler.java:43)\nio.
undertow.security.handlers.AbstractConfidentialityHandler.handleRequest(Abstra
ctConfidentialityHandler.java:46)\nio.undertow.servlet.handlers.security.Servl
etConfidentialityConstraintHandler.handleRequest(ServletConfidentialityConstra
intHandler.java:64)\nio.undertow.security.handlers.AuthenticationMechanismsHan
dler.handleRequest(AuthenticationMechanismsHandler.java:60)\nio.undertow.servl
et.handlers.security.CachedAuthenticatedSessionHandler.handleRequest(CachedAut
henticatedSessionHandler.java:77)\nio.undertow.security.handlers.AbstractSecur
ityContextAssociationHandler.handleRequest(AbstractSecurityContextAssociationH
andler.java:43)\nio.undertow.server.handlers.PredicateHandler.handleRequest(Pr
edicateHandler.java:43)\nio.undertow.servlet.handlers.SendErrorPageHandler.han
dleRequest(SendErrorPageHandler.java:52)\nio.undertow.server.handlers.Predicat
eHandler.handleRequest(PredicateHandler.java:43)\nio.undertow.servlet.handlers
.ServletInitialHandler.handleFirstRequest(ServletInitialHandler.java:276)\nio.
undertow.servlet.handlers.ServletInitialHandler$2.call(ServletInitialHandler.j
ava:135)\nio.undertow.servlet.handlers.ServletInitialHandler$2.call(ServletIni
tialHandler.java:132)\nio.undertow.servlet.core.ServletRequestContextThreadSet
upAction$1.call(ServletRequestContextThreadSetupAction.java:48)\nio.undertow.s
ervlet.core.ContextClassLoaderSetupAction$1.call(ContextClassLoaderSetupAction
.java:43)\nio.undertow.servlet.handlers.ServletInitialHandler.dispatchRequest(
ServletInitialHandler.java:256)\nio.undertow.servlet.handlers.ServletInitialHa
ndler$1.handleRequest(ServletInitialHandler.java:101)\nio.undertow.server.Conn
ectors.executeRootHandler(Connectors.java:393)\nio.undertow.server.HttpServerE
xchange$1.run(HttpServerExchange.java:859)\norg.jboss.threads.ContextHandler$1
.runWith(ContextHandler.java:18)\norg.jboss.threads.EnhancedQueueExecutor$Task
.run(EnhancedQueueExecutor.java:2513)\norg.jboss.threads.EnhancedQueueExecutor
$ThreadBody.run(EnhancedQueueExecutor.java:1538)\norg.xnio.XnioWorker$WorkerTh
readFactory$1$1.run(XnioWorker.java:1282)\njava.base/
java.lang.Thread.run(Thread.java:842)"
}

DELETE REST API

This resource deletes all the Mediation rules based on ruleName.

Resource URI: /ocscp/scpc-configuration/mediation/v1/rules/{ruleName}

Table 2-313 Path Parameters Supported by the DELETE Response Body on this Resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Deletes Mediation rules by ruleName

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Table 2-314 Data Structures Supported by the DELETE Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
MediationRule	M	1	204	Deleted Mediation rule.
ProblemDetails	M	1	404	Indicates that there is no matching entry found.

Example

Success response for DELETE

```
curl -X DELETE "http://10.75.213.183:31612/ocscp/scpc-configuration/
mediation/v1/rules/ruleTest999" -H
    "accept: application/json"
```

Failure response

```
curl -X DELETE "http://10.75.213.183:31612/ocscp/scpc-configuration/
mediation/v1/rules/ruleTest$" -H
      "accept: application/json"


{
    "title": "NOT_FOUND",
    "status": 404,
    "detail": "Rule: ruleTest$  was not found",
    "cause":
"com.oracle.cgbu.ocmediationconfig.service.RulesConfigService.lambda$deleteByN
ame$1(RulesConfigService.java:52)\njava.base/
java.util.Optional.orElseThrow(Optional.java:403)\ncom.oracle.cgbu.ocmediation
config.service.RulesConfigService.deleteByName(RulesConfigService.java:52)\nco
m.oracle.cgbu.ocmediationconfig.controller.RulesConfigController.deleteRuleByN
ame(RulesConfigController.java:52)\njava.base/
jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
\njava.base/
jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.
java:77)\njava.base/
jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAcces
sorImpl.java:43)\njava.base/
java.lang.reflect.Method.invoke(Method.java:568)\norg.springframework.web.meth
od.support.InvocableHandlerMethod.doInvoke(InvocableHandlerMethod.java:205)\no
rg.springframework.web.method.support.InvocableHandlerMethod.invokeForRequest(
InvocableHandlerMethod.java:150)\norg.springframework.web.servlet.mvc.method.a
nnotation.ServletInvocableHandlerMethod.invokeAndHandle(ServletInvocableHandle
rMethod.java:117)\norg.springframework.web.servlet.mvc.method.annotation.Reque
stMappingHandlerAdapter.invokeHandlerMethod(RequestMappingHandlerAdapter.java:
895)\norg.springframework.web.servlet.mvc.method.annotation.RequestMappingHand
lerAdapter.handleInternal(RequestMappingHandlerAdapter.java:808)\norg.springfr
amework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.handle(AbstractHan
dlerMethodAdapter.java:87)\norg.springframework.web.servlet.DispatcherServlet.
doDispatch(DispatcherServlet.java:1072)\norg.springframework.web.servlet.Dispa
tcherServlet.doService(DispatcherServlet.java:965)\norg.springframework.web.se
rvlet.FrameworkServlet.processRequest(FrameworkServlet.java:1006)\norg.springf
```


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ramework.web.servlet.FrameworkServlet.doDelete(FrameworkServlet.java:931)\njav
ax.servlet.http.HttpServlet.service(HttpServlet.java:523)\norg.springframework
.web.servlet.FrameworkServlet.service(FrameworkServlet.java:883)\njavax.servle
t.http.HttpServlet.service(HttpServlet.java:584)\nio.undertow.servlet.handlers
.ServletHandler.handleRequest(ServletHandler.java:74)\nio.undertow.servlet.han
dlers.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:129)\norg.spri
ngframework.web.filter.RequestContextFilter.doFilterInternal(RequestContextFil
ter.java:100)\norg.springframework.web.filter.OncePerRequestFilter.doFilter(On
cePerRequestFilter.java:117)\nio.undertow.servlet.core.ManagedFilter.doFilter(
ManagedFilter.java:61)\nio.undertow.servlet.handlers.FilterHandler$FilterChain
Impl.doFilter(FilterHandler.java:131)\norg.springframework.web.filter.FormCont
entFilter.doFilterInternal(FormContentFilter.java:93)\norg.springframework.web
.filter.OncePerRequestFilter.doFilter(OncePerRequestFilter.java:117)\nio.under
tow.servlet.core.ManagedFilter.doFilter(ManagedFilter.java:61)\nio.undertow.se
rvlet.handlers.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\
norg.springframework.boot.actuate.metrics.web.servlet.WebMvcMetricsFilter.doFi
lterInternal(WebMvcMetricsFilter.java:96)\norg.springframework.web.filter.Once
PerRequestFilter.doFilter(OncePerRequestFilter.java:117)\nio.undertow.servlet.
core.ManagedFilter.doFilter(ManagedFilter.java:61)\nio.undertow.servlet.handle
rs.FilterHandler$FilterChainImpl.doFilter(FilterHandler.java:131)\norg.springf
ramework.web.filter.CharacterEncodingFilter.doFilterInternal(CharacterEncoding
Filter.java:201)\norg.springframework.web.filter.OncePerRequestFilter.doFilte
r(OncePerRequestFilter.java:117)\nio.undertow.servlet.core.ManagedFilter.doFil
ter(ManagedFilter.java:61)\nio.undertow.servlet.handlers.FilterHandler$FilterC
hainImpl.doFilter(FilterHandler.java:131)\nio.undertow.servlet.handlers.Filter
Handler.handleRequest(FilterHandler.java:84)\nio.undertow.servlet.handlers.sec
urity.ServletSecurityRoleHandler.handleRequest(ServletSecurityRoleHandler.java
:62)\nio.undertow.servlet.handlers.ServletChain$1.handleRequest(ServletChain.j
ava:68)\nio.undertow.servlet.handlers.ServletDispatchingHandler.handleRequest(
ServletDispatchingHandler.java:36)\nio.undertow.servlet.handlers.RedirectDirHa
ndler.handleRequest(RedirectDirHandler.java:68)\nio.undertow.servlet.handlers.
security.SSLInformationAssociationHandler.handleRequest(SSLInformationAssociat
ionHandler.java:117)\nio.undertow.servlet.handlers.security.ServletAuthenticat
ionCallHandler.handleRequest(ServletAuthenticationCallHandler.java:57)\nio.und
ertow.server.handlers.PredicateHandler.handleRequest(PredicateHandler.java:43)
\nio.undertow.security.handlers.AbstractConfidentialityHandler.handleRequest(A
bstractConfidentialityHandler.java:46)\nio.undertow.servlet.handlers.security.
ServletConfidentialityConstraintHandler.handleRequest(ServletConfidentialityCo
nstraintHandler.java:64)\nio.undertow.security.handlers.AuthenticationMechanis
msHandler.handleRequest(AuthenticationMechanismsHandler.java:60)\nio.undertow.
servlet.handlers.security.CachedAuthenticatedSessionHandler.handleRequest(Cach
edAuthenticatedSessionHandler.java:77)\nio.undertow.security.handlers.Abstract
SecurityContextAssociationHandler.handleRequest(AbstractSecurityContextAssocia
tionHandler.java:43)\nio.undertow.server.handlers.PredicateHandler.handleReque
st(PredicateHandler.java:43)\nio.undertow.servlet.handlers.SendErrorPageHandle
r.handleRequest(SendErrorPageHandler.java:52)\nio.undertow.server.handlers.Pre
dicateHandler.handleRequest(PredicateHandler.java:43)\nio.undertow.servlet.han
dlers.ServletInitialHandler.handleFirstRequest(ServletInitialHandler.java:275)
\nio.undertow.servlet.handlers.ServletInitialHandler.access$100(ServletInitial
Handler.java:79)\nio.undertow.servlet.handlers.ServletInitialHandler$2.call(Se
rvletInitialHandler.java:134)\nio.undertow.servlet.handlers.ServletInitialHand
ler$2.call(ServletInitialHandler.java:131)\nio.undertow.servlet.core.ServletRe
questContextThreadSetupAction$1.call(ServletRequestContextThreadSetupAction.ja
va:48)\nio.undertow.servlet.core.ContextClassLoaderSetupAction$1.call(ContextC
lassLoaderSetupAction.java:43)\nio.undertow.servlet.handlers.ServletInitialHan
dler.dispatchRequest(ServletInitialHandler.java:255)\nio.undertow.servlet.hand

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```
lers.ServletInitialHandler.access$000(ServletInitialHandler.java:79)\nio.under
tow.servlet.handlers.ServletInitialHandler$1.handleRequest(ServletInitialHandl
er.java:100)\nio.undertow.server.Connectors.executeRootHandler(Connectors.java
:387)\nio.undertow.server.HttpServerExchange$1.run(HttpServerExchange.java:852
)
\norg.jboss.threads.ContextClassLoaderSavingRunnable.run(ContextClassLoaderSav
ingRunnable.java:35)\norg.jboss.threads.EnhancedQueueExecutor.safeRun(Enhanced
QueueExecutor.java:2019)\norg.jboss.threads.EnhancedQueueExecutor$ThreadBody.d
oRunTask(EnhancedQueueExecutor.java:1558)\norg.jboss.threads.EnhancedQueueExec
utor$ThreadBody.run(EnhancedQueueExecutor.java:1449)\norg.xnio.XnioWorker$Work
erThreadFactory$1$1.run(XnioWorker.java:1282)\njava.base/
java.lang.Thread.run(Thread.java:842)"
}
```

2.30 Configuring Mediation Log Level

This section describes how to configure mediation and mediation-test services at the log level using the REST API.

Resources

The following table describes the resource name to retrieve, add, and update the log level of mediation and mediation-test services.

Table 2-315 Resource Name

Resource Name	Resource URI	HTTP Method	Description
loglevel	/mediation/v1/mediation-config/	GET ALL	Retrieves the log level of the mediation and mediation-test services and its library log levels.
loglevel	/mediation/v1/mediation-config/{serviceName}	GET	Retrieves the log level of a specific service and its library log level.
loglevel	/mediation/v1/mediation-config/{serviceName}	PUT	Updates log levels of mediation, mediation-test service, and its library log levels.

Data Model

The following table describes the supported data type.

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Table 2-316 LoggingLevels

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
appLogLevel	String	M	WARN	Indicates the type of log level. The following are the supported log levels: • WARN: Designates potentially harmful situations. • INFO: Designates informational messages that highlight the progress of the application at coarse-grained level. • ERROR: Designates error events that might still allow the application to continue running. • DEBUG: Designates fine-grained informational events that are most useful to debug an application.
serviceType	String	M	NA	Indicates the name of the type of service. For examples, mediation and mediation-test
packageLogLevel	List(PackageLogLevel)	M	NA	Indicates the package level log information.
logRateControl	LogRateCntrol	O	NA	Indicates the log rate control information.

Table 2-317 PackageLogLevel

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
packageName	String	M	Library	Indicates the name of the package. It should be a valid library name. • The valid package names are org, io, springfox, com.zaxxer, reactor, validator, and library.
logLevelForPackage	String	M	INFO	Indicates the type of package log level. The following are the supported log levels: • WARN: Designates potentially harmful situations. • INFO: Designates informational messages that highlight the progress of the application at a coarse-grained level. • ERROR: Designates error events that might still allow the application to continue running. • DEBUG: Designates fine-grained informational events that are most useful to debug an application • OFF: Designates to turn off logging.

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Table 2-318 LogRateControl

Field Name	Data Type	Range	Default Value	Description
rate	Integer	1-10000	1	Indicates the average number of logs allowed per second.
logLevel	String	NA	OFF	Indicates the type of log level where rate control is applied. The following are the supported log levels: • WARN: Designates potentially harmful situations. • INFO: Designates informational messages that highlight the progress of the application at a coarse-grained level. • ERROR: Designates error events that might still allow the application to continue running. • DEBUG: Designates fine-grained informational events that are most useful to debug an application • OFF: Designates to turn off logging.

Response codes

The following table provides response codes and their descriptions.

Table 2-319 Response codes

Response Code	Category	Description
200	Success	Successfully retrieves the log level of mediation.
400	Failure	Bad requests occur when invalid log-level data is provided during the PUT operation.
404	Failure	No log-level record was found for mediation.

Examples

Sample JSON body for PUT request API

Example to update mediation log level:

```
curl -X 'PUT' \
  'http://10.75.213.99:31590/ocscp/scpc-configuration/mediation/v1/mediation-
config/mediation' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "serviceType": "mediation",
  "appLogLevel": "info",
  "packageLogLevel": [
    {
      "packageName": "library",
```


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```
      "logLevelForPackage": "OFF"
    }
  ],
  "logRateControl": {
    "rate": 1,
    "logLevel": "OFF"
  }
}'
Response:
{
  "headers": {},
  "body": {
    "appLogLevel": "INFO",
    "packageLogLevel": [
      {
        "packageName": "library",
        "logLevelForPackage": "OFF"
      }
    ],
    "logRateControl": {
      "rate": 1,
      "logLevel": "OFF"
    },
    "serviceType": "mediation"
  },
  "statusCode": "OK",
  "statusCodeValue": 200
}
```

Sample JSON body for GET API response

Example to get log level for specific service:

```
curl -X 'GET' \
  'http://10.75.213.99:31590/ocscp/scpc-configuration/mediation/v1/mediation-
config/mediation' \
  -H 'accept: application/json'
Response :
{
  "appLogLevel": "INFO",
  "packageLogLevel": [
    {
      "packageName": "library",
      "logLevelForPackage": "OFF"
    }
  ],
  "logRateControl": {
    "rate": 1,
    "logLevel": "OFF"
  },
  "serviceType": "mediation"
}
```


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Example to get log level for specific service:

```
curl -X 'GET' \
  'http://10.75.213.99:31590/ocscp/scpc-configuration/mediation/v1/mediation-
config/mediation-test' \
  -H 'accept: application/json'
Response:
{
  "appLogLevel": "WARN",
  "packageLogLevel": [
    {
      "packageName": "library",
      "logLevelForPackage": "OFF"
    }
  ],
  "logRateControl": {
    "rate": 1,
    "logLevel": "OFF"
  },
  "serviceType": "mediation-test"
}
```

Example to get all mediation config log levels:

```
curl -X 'GET' \
  'http://10.75.213.99:31590/ocscp/scpc-configuration/mediation/v1/mediation-
config/' \
  -H 'accept: application/json'
Response:
[
  {
    "appLogLevel": "WARN",
    "packageLogLevel": [
      {
        "packageName": "library",
        "logLevelForPackage": "OFF"
      }
    ],
    "logRateControl": {
      "rate": 1,
      "logLevel": "OFF"
    },
    "serviceType": "mediation-test"
  },
  {
    "appLogLevel": "INFO",
    "packageLogLevel": [
      {
        "packageName": "library",
        "logLevelForPackage": "OFF"
      }
    ],
    "logRateControl": {
      "rate": 1,
      "logLevel": "OFF"
```


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```
    },
    "serviceType": "mediation"
  }
]
```

2.31 Configuring Mediation Support for User Defined Variables

This section describes the configuration of user-defined variables for creating, modifying, and deleting them using the REST API.

Resources

The following table describes the resource name to retrieve, add, update, and remove user defined variables.

Table 2-320 Resource Name

Resource Name	Resource URI	HTTP Method	Description
HTTP Mediation	• ${mediationConfig.baseUrl}/mediation/v1/user-defined-variables • ${mediationConfig.baseUrl}/mediation/v1/user-defined-variables/	GET	Retrieves a record of all configured user-defined variables.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/user-defined-variables/{variableName}	GET	Retrieves a specific record based on a user-defined variable provided as a path parameter. For example: where `variableName` is `user-category/prepaid-user`, and so on.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/user-defined-variables/{variableName}	PUT	Updates the user-defined variables.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/user-defined-variables/{variableName}	POST	Creates the user-defined variables and generates the primary key before performing the PUT operation.
HTTP Mediation	${mediationConfig.baseUrl}/mediation/v1/user-defined-variables/{variableName}	DELETE	Deletes the user-defined variables.

Data Model

The following table describes the supported data type:

Table 2-321 UserDefinedVariables Attribute Details

Field Name	Data Type	Mandatory (M)/Optional (O)	Description
name	String	M	A unique variable name as per the user's requirement.
data	VariableData	M	Data object for the user-defined variable.

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Table 2-322 VariableData Attribute Details

Field Name	Data Type	Mandatory (M)/Optional (O)	Description
type	ENUM	M	The data type of the variable (for example, STRING, LONG, JSON, BOOLEAN).
size	Integer	M	The minimum and maximum size (in Bytes) of the variable value that can be accepted. The allowed size range is between 1 and 1024 bytes only.
description	String	O	The description of the user-defined variable.

Request Body JSON Format

```
{
    "name": "custom_var1",
    "data": {
      "type": "string",
      "size": 128,
      "description": "string"
    }
}
```

Response Body

The response body data model varies based on the status of the REST operation.

Table 2-323 Response Body Data Model

Data Type	Mandatory (M)/Optional (O)	Cardinality	Description and Response Code
UserDefinedVariables	M	1	User-defined variable (`userDefinedVariable`) matching criteria. Response Code: 200 OK
ProblemDetails	M	1	Returns when no data is found for the given query parameters. 404 NOT FOUND
ProblemDetails	M	1	Returns a "Bad Request" response when parameter validation fails. 400 BAD REQUEST

Resource Definition

GET REST API

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This resource fetches user-defined variables (userDefinedVariable) based on the query parameters. This resource returns all user-defined variables if no query parameters are provided.

Resource URI: /ocscp/scpc-configuration/mediation/v1/user-defined-variables/{variableName}

Table 2-324 Path Parameters Supported by the GET Response Body on this Resource

Field Name	Data Type	Mandatory (M)/Optional (O)	Description
Name	String	O	The identity of the user-defined variable name for which the configured user-defined variables are being fetched.

Table 2-325 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
UserDefinedVariables	M	1	200 OK	Indicates userDefinedVariable for fetching a specific record based on path parameters.
ProblemDetails	M	1	404 NOT FOUND	Returns a response when no data is found for the given path parameters.

Example

Success response for GET

```
curl -X GET "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/user-category" -H "accept: application/
json“



Response->

    Response Code: 200
    Response Body:
    {

       "name": "user-category",
       "data":
        {
           "type": "string",
           "size": 128,
           "description": "string"
        }
    }
```


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Failure response 1

```
curl -X GET "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/prepaid-user" -H "accept: application/
json“




Response->
    Response Code: 404

    Response Body:
    {

      "title": "NOT_FOUND",
      "status": 404,
      "detail": "User-Defined-Variable: prepaid-user was not found. Please
refer the User Guide",
      "cause": "USER_DEFINED_VARIABLE_NOT_FOUND"
    }
```

Failure response 2

```
curl -X GET "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/ " -H "accept: application/json“




   Response Code: 400

    Response Body:
   {

     "title": "BAD_REQUEST",
     "status": 400,
     "detail": "User-Defined-Variable body contains null or empty value.
Please provide valid name. Please refer the User Guide",
     "cause": "INVALID_NAME"
   }
```

POST REST API

This resource creates the user-defined variables configuration using the request body.

Resource URI: /ocscp/scpc-configuration/mediation/v1/user-defined-variables/{variableName}

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Table 2-326 Data Structures Supported by the POST Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
UserDefinedVariables	M	1	200 OK	Creates the user-defined variables configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the structure of `ProblemDetails`.

Example

Success response for POST

```
curl -X POST "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/user-category" -H "accept: application/
json“


Request →
        Request body:

{

       "name": "user-category",
       "data":
        {
           "type": "string",
           "size": 128,
                      "description": "string"
                 }
         }

Response->
    Response Code: 200
    Response Body:
    {

       "name": "user-category",
       "data":
        {
           "type": "string",
           "size": 128,
                      "description": "string"
                 }
    }
```

Failure response 1 for POST

```
curl -X POST "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/
```


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```
mediation/v1/user-defined-variables/prepaid-user" -H "accept: application/
json“


Request body:

{

       "name": "user-category",
       "data":
        {
           "type": "string",
           "size": 1209,
                      "description": "string"
                 }
         }


Response->
    Response Code: 400

    Response Body:

{
  "title": "BAD_REQUEST",
  "status": 400,
  "detail": "Request body User-Defined-VariableName: user-category does not
match with param User-Defined-VariableName: user-imsi. Please refer the User
Guide",
  "cause": "INVALID_KEY_COMBINATION"
}
```

Failure response 2

```
curl -X POST "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/user-category" -H "accept: application/
json“


Request →
        Request body:

{

       "name": ,
       "data":
        {
           "type": "string",
           "size": 1209,
                      "description": "string"
                 }
         }
```


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```
Response->
    Response Code: 400

    Response Body:

{
  "title": "BAD_REQUEST",
  "status": 400,
  "detail": "User-Defined-Variable body contains null or empty value for Name
field. Please provide valid name. Please refer the User Guide",
  "cause": "INVALID_NAME"
}
```

PUT REST API

This resource updates the user-defined variables configuration using the request body.

Resource URI: /ocscp/scpc-configuration/mediation/v1/user-defined-variables/{variableName}

Table 2-327 Data Structures Supported by the PUT Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
UserDefinedVariables	M	1	200 OK	Modifies the user-defined variable configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the structure of `ProblemDetails`.
ProblemDetails	M	1	404 Not Found	Returns the structure of `ProblemDetails`.

Example

Success response for PUT

```
curl -X PUT "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/user-category" -H "accept: application/
json“


Request body:

{

       "name": "user-category",
       "data":
        {
           "type": "string",
           "size": 128,
                      "description": "string"
                 }
         }
```


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```
Response->
    Response Code: 200
    Response Body:
    {

       "name": "user-category",
       "data":
        {
           "type": "string",
           "size": 128,
                      "description": "string"
                 }
    }
```

Failure Response

```
curl -X PUT "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-
configuration/

mediation/v1/user-defined-variables/user-category" -H "accept: application/
json“


Request body:

{

       "name": "user-category",
       "data":
        {
                      "description": "string"
                 }
         }


Response->
    Response Code: 400

    Response Body:

{
  "title": "BAD_REQUEST",
  "status": 400,
  "detail": "Fields: [size, type], are required and missing for User-Defined-
Variable: user-category. Please refer the User Guide",
  "cause": "MANDATORY_IE_MISSING"
}
```

DELETE REST API

This resource deletes the user-defined variables configuration using the request body.

Resource URI: /ocscp/scpc-configuration/mediation/v1/user-defined-variables/{variableName}

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Table 2-328 Data Structures Supported by the DELETE Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
userDefinedVariablesWrapper	M	1	200 OK	Indicates the user-defined variable configuration data.
MediationConfigControllerAdvice	M	1	400 BAD REQUEST	Returns the mediationConfigControllerAdvice structure.
MediationConfigControllerAdvice	M	1	404 Not Found	Returns the mediationConfigControllerAdvice structure.

Example

Success response for DELETE

```
curl -X DELETE "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-configuration/

mediation/v1/user-defined-variables/user-category" -H "accept: application/json“


Response Code: 200 Response Body: OK
```

Failure response

```
curl -X DELETE "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-configuration/

mediation/v1/userDefinedVariables/user-category" -H "accept: application/json“


    Response Code: 404

    Response Body:

{
  "title": "NOT_FOUND",
  "status": 404,
  "detail": "User-Defined-Variable: user-category was not found. Please refer the User Guide",
  "cause": "USER_DEFINED_VARIABLE_NOT_FOUND"
}
```

Failure Response 2

```
curl -X DELETE "http://<configuration-fqdn>:<configuration-port>/ocscp/scpc-configuration/
```


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```
mediation/v1/userDefinedVariables/user-category" -H "accept: application/json“


Response Code: 400

    Response Body:

{
  "title": "BAD_REQUEST",
  "status": 400,
  "detail": "User-Defined-Variable: userDefined-var is being used at
Mediation Trigger Point Configuration in 13 RuleName(s). List of 10 out of 13
RuleName(s) are as follows: [rule-trigger18, rule-trigger, rule-trigger181,
rule-trigger98, rule3, rule-trigger8, rule-trigger7, rule-trigger4, rule-
trigger3, rule-trigger6]. Please refer the User Guide",
  "cause": "USER_DEFINED_VARIABLE_ALREADY_IN_USE"
}
```

2.32 Configuring Route Groups

This section describes REST API configurations required for Route Groups. The static alternate route feature prioritizes the settings in the static routing configuration over any NF profile for the alternate destination.

Resources

The following table describes the resource URIs and the corresponding HTTP methods for the route-groups resource type.

Table 2-329 Resource Name

Resource Name	Resource URI	HTTP Method	Description
route-groups	/ocscp/scpc-configuration/v1/route-groups	GET	• Reads a collection of route groups. • Reads the route group configuration of a given route group name. • Retrieves configured route groups based on the supplied query parameters as filtering criteria.
route-groups	/ocscp/scpc-configuration/v1/route-groups	PUT	Configures a new route group or replaces the configuration of an existing route group by providing a route group configuration in the request body.
route-groups	/ocscp/scpc-configuration/v1/route-groups	DELETE	Removes the configuration of an existing route group.

Resource: route-groups

Resource URI: /ocscp/scpc-configuration/v1/route-groups

Resource Definition

This section describes GET, PUT, and DELETE resource types supported by Route Group.

GET REST API

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The following table describes the URI query parameters supported by the GET method on this resource.

> **Note**
>
> - The names of the query parameters in the following tables are case sensitive.
> - The combination of query parameters are not supported. If no query parameter is specified, it retrieves all the records. Otherwise, only one query parameter at a time is supported.

Table 2-330 URI Query Parameters Supported by the GET Method

Field Name	DataType	Mandatory (M) or Optional(O)	Cardinality	Description
routeGroupId	string	O	0..1	Indicates the unique route group ID.
routeGroupType	RouteGroupType	O	0..1	Indicates all route groups configured using specified addressing parameters such as fqdn, nfInstanceId, ipv4address, or ipv6address.
primaryRoute	PrimaryRoute	O	0..1	Indicates specific route group configuration for the specified fqdn, nfInstanceId, ipv4address, or ipv6address. For IP, only the primaryRoute query parameter with only one element (ipv4Address and port) in the list is supported. **Note**: As this query parameter considers the JSON format as an input string, you must use the "data-urlencode" annotation in the curl command.

> **Note**
>
> To get all route groups, do not provide any query parameters.

The following table describes the data structure supported by the GET response body on this resource:

Table 2-331 Data Structure Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
array(routeGroupRecord)	M	1	200 OK	The response body contains a list of route group configuration equivalent to the criteria for received requests.

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Table 2-331 (Cont.) Data Structure Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
ProblemDetails	M	1	404 NOT FOUND	This data structure is sent when no matching entry is found. For information about the ProblemDetails structure, see 3GPP TS 29.571.

> **Note**
>
> All the supported HTTP error status is applicable with a ProblemDetails data type as described in *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*. For more information, see Clause 5.2.7 of 3GPP TS 29.500.

The following example is of a successful response.

```
curl -v -X PUT "http://10.75.215.87:30287/ocscp/scpc-configuration/v1/route-
groups" -H  "accept: */*" -H  "Content-Type: application/json" -
d'{"routeGroupId":"udm1","routeGroupType":"IPV4","primaryRoute":
{"ipEndPoints":
[{"ipv4Address":"200.200.200.210","port":80}]},"alternateRouteList":
[{"apiPrefix":"USEast","capacity":10,"ipv4Addresses":
["200.200.200.220"],"port":80,"priority":10,"scheme":"http"},
{"apiPrefix":"USEast","capacity":10,"ipv4Addresses":
["200.200.200.230","200.200.200.235"],"port":80,"priority":10,"scheme":"http"}
]}'

Response:

201 OK

{"routeGroupId":"udm1","routeGroupType":"IPV4","primaryRoute":{"ipEndPoints":
[{"ipv4Address":"200.200.200.210","port":80}]},"alternateRouteList":
[{"ipv4Addresses":
["200.200.200.220"],"port":80,"priority":10,"capacity":10,"apiPrefix":"USEast"
,"scheme":"http"},{"ipv4Addresses":
["200.200.200.230","200.200.200.235"],"port":80,"priority":10,"capacity":10,"a
piPrefix":"USEast","scheme":"http"}]}
```

PUT REST API

There are no URI query parameters supported by the PUT method on this resource.

The following table describes the data structure supported by the PUT request body on this resource:

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Table 2-332 Data Structure Supported by the PUT Request Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
routeGroupRecord	M	1	Indicates the route group configuration data.

The following table describes the data structures supported by the PUT response body on this resource:

Table 2-333 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
routeGroupRecord	M	1	200 OK	Indicates the updated or replaced existing route group configuration data equivalent to the criteria for received requests.
routeGroupRecord	M	1	201 Created	Indicates the successful creation of new route group configuration data as per received requests.
ProblemDetails	M	1	400 BAD REQUEST	This response is used when the request body validation fails. For example, when serviceProtoName is missing in the request body. For information about the ProblemDetails structure, see 3GPP TS 29.571.

> **Note**
>
> All supported HTTP error status is applicable with a ProblemDetails data type. For more information, see Clause 5.2.7 of 3GPP TS 29.500.

The following example is of a successful response.

```
curl -X GET "http://10.75.215.87:30287/ocscp/scpc-configuration/v1/route-
groups" -H  "accept: application/json"

Response:

200 OK
[{"routeGroupId":"udm1","routeGroupType":"IPADDRESS","primaryRoute":
{"ipEndPoints":
[{"ipv4Address":"200.200.200.210","port":80}]},"alternateRouteList":
[{"ipv4Addresses":
["200.200.200.220"],"port":80,"priority":10,"capacity":10,"apiPrefix":"USEast"
,"scheme":"http"},{"ipv4Addresses":
```


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```
["200.200.200.230","200.200.200.235"],"port":80,"priority":10,"capacity":10,"a
piPrefix":"USEast","scheme":"http"}]}]
```

DELETE REST API

The following table describes the URI query parameters supported by the DELETE method on this resource:

Table 2-334 URI Query Parameters Supported by the DELETE Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
routeGroupId	string	M	1	Indicates the unique route group ID.

> **Note**
>
> All the supported HTTP error status is applicable with a ProblemDetails data type. For more information, see Clause 5.2.7 of 3GPP TS 29.500.

The following example is of a successful response.

```
curl -v -X DELETE "http://10.75.215.87:30287/ocscp/scpc-configuration/v1/
route-groups?routeGroupId=udm1" -H  "accept: application/json"

204 No Content
```

Data Model

The following tables describe different data models required for configuring Route Group.

Table 2-335 routeGroupRecord

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
routeGroupId	string	M	1	Indicates the unique route group name or ID.
routeGroupType	RouteGroupType	M	1	Addresses parameters such as fqdn, nfInstanceId, ipv4address, or ipv6address, used in route group configuration.

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Table 2-335 (Cont.) routeGroupRecord

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
primaryRoute	PrimaryRoute	C	1	Indicates the target endpoint information for the first routing attempt of 5G SBI message. • At least one of the first attempt route information parameters is included in the route configuration. • If the primaryRoute parameter is present, then the alternateRouteList parameter is also present. • If the primaryRouteList parameter is present, then the alternateRouteList parameter is absent. • The valid combinations are primaryRoute and alternateRouteList, primaryRouteList, All other combinations are invalid.
alternateRouteList	array(RouteRecord)	C	0..N	Indicates the route (target endpoint info) information to be used in alternate NF selection and load-balancing at SCP in alternate routing of 5G SBI message.

Table 2-336 PrimaryRoute

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
fqdn	Fqdn	C	0..1	Indicates the FQDN of primary route, that is, for the first routing attempt of a 5G SBI message request.
port	integer	C	0..1	Indicates the port number. The minimum value is 0 and the maximum value is 65535.Port is defined if FQDN is present.
nfInstanceId	NfInstanceId	C	0..1	Indicates the NF instance ID of primary route, that is, for the first routing attempt of a 5G SBI message request.
ipEndPoints	array(IpEndPoint)	C	0..1	Indicates the list of all IPv4 addresses of primary route, that is, for the first routing attempt of a 5G SBI message request.

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> **Note**
>
> - At least one of the primary route addressing parameters such as fqdn, nfInstanceId, or ipEndPoints must be included in the route configuration.
> - The primary route has the authority, FQDN or IP and port information, which is matched with ":authority" pseudo header of the first routing attempt to select a producer NF. Note that the scheme and apiPrefix are not considered.
> - The port is defined if FQDN is present.

Table 2-337 IpEndPoint

Attribute Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ipv4Address	Ipv4Addr	C	0..1	Indicates the IPv4 address.
ipv6Address	Ipv6Addr	C	0..1	Indicates the IPv6 address.
port	integer	M	1	Indicates the port number. The minimum value is 0 and the maximum value is 65535.

> **Note**
>
> In this data structure, only one occurrence of either ipv4Address or ipv6Address shall be included.

Table 2-338 RouteRecord

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
fqdn	Fqdn	C	0..1	Indicates the FQDN of primary route, that is, for the first routing attempt of a 5G SBI message request.
nfInstanceId	NfInstanceId	C	0..1	Indicates the NF instance ID of primary route, that is, for the first routing attempt of a 5G SBI message request.
ipv4Addresses	array(Ipv4Addr)	C	0..N	Indicates the list of all IPv4 addresses of primary route, that is, for the first routing attempt of a 5G SBI message request.
ipv6Addresses	array(Ipv6Addr)	C	0..N	Indicates the list of all IPv6 addresses of primary route, that is, for the first routing attempt of a 5G SBI message request.
port	integer	O	0..1	Indicates the port number. The minimum value is 0 and the maximum value is 65535.
priority	integer	O	0..1	Indicates the priority (relative to other NFs of the same route list) within the range of 0 to 65535 for NF selection and alternate routing. The lower values indicate a higher priority.

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Table 2-338 (Cont.) RouteRecord

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
capacity	integer	O	0..1	Indicates the static capacity information within the range of 0 to 65535. It is expressed as a weight relative to other NF instances of the same route list.
apiPrefix	string	O	0..1	Indicates the optional path segments to construct the {apiRoot} variable of the different API URIs as described in Clause 4.4.1 of 3GPP TS 29.501.
scheme	UriScheme	M	1	Indicates the URI scheme, for example, "http" or "https".

Note

- At least one of the primary route addressing parameters such as fqdn, nfInstanceId, ipv4address, or ipv6address, must be included in the route configuration.
- If the port number is absent, SCP uses the default HTTP port number, that is, TCP port 80 for "http" URIs or TCP port 443 for "https" URIs as specified in Internet Engineering Task Force (IETF) Request for Comments (RFC) 7540.

Table 2-339 Enumeration: RouteGroupType

Enumeration Value	Description
"FQDN"	Route group with FQDN in route group configuration.
"NFINSTANCEID"	Route group with NF instance ID in route group configuration.
"IPADDRESS"	Route group can have either IPv4 or IPv6 or both addresses in route group configuration. In case both IPv4 and IPv6 addresses are present, the load balancing mechanism is used to route the traffic between IPv4 and IPv6.

Table 2-340 Simple Data Types

Type Name	Type Definition	Description
Fqdn	string	Indicates the FQDN of the NF service.
Ipv4Addr	string	Indicates the string identifying an IPv4 address formatted in the "dotted decimal" notation as defined in IETF RFC 1166. Pattern: '^(([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])\.){3}([0-9]|[1-9][0-9]|1[0-9][0-9]|2[0-4][0-9]|25[0-5])$'
NfInstanceId	string	Indicates the string uniquely identifying an NF instance. The format of the NF Instance ID is a Universally Unique Identifier (UUID) version 4 as described in IETF RFC 4122.

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Table 2-341 ProblemDetails

Attribute Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
type	Uri	O	0..1	Identifies the problem type. A URI reference according to IETF RFC 3986.
title	string	O	0..1	Indicates a short human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem.
status	integer	O	0..1	Indicates the HTTP status code for the occurrence of the problem.
detail	string	O	0..1	Indicates a human-readable explanation specific to the occurrence of the problem.
instance	Uri	O	0..1	Indicates a URI reference that identifies the specific occurrence of the problem.
cause	string	C	0..1	Indicates a machine-readable application error cause specific to the occurrence of the problem. It should be present and provide application-related error information if available.
invalidParams	array(InvalidParam)	O	1..N	Indicates the description of invalid parameters for a request rejected due to invalid parameters.

For more information about the ProblemDetails structure, see Section 5.2.4.1 of 3GPP TS 29.571.

2.33 Configuring Consumer NF Info

This section describes Consumer NF Info parameters that are used to determine the identity of consumer NFs that send message requests to SCP.

Resources

The following table describes the resource URIs and the corresponding HTTP methods for the ConsumerInfo resource type.

Table 2-342 Resources

Resource Name	Resource URI	HTTP Method	Description
ConsumerInfo	`/ocscp/scpc-configuration/{version}/consumerNfInfo/headerInfo`	GET	Retrieves consumerInfo data
ConsumerInfo	`/ocscp/scpc-configuration/{version}/consumerNfInfo/headerInfo`	PUT	Configures ConsumerInfo data

Data Model

Request Body
The following table describes ConsumerInfo name and data type.

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Table 2-343 ConsumerInfo

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
primaryHeaderName	String	M	1	The header name to identify the consumer NF according to the ingress rate limiting configurations. This is a mandatory parameter. This parameter is given priority over the secondaryHeaderName parameter. The default value is "X-Forwarded-Client-Cert". It can use the following values: • "User-Agent" • "X-Forwarded-Client-Cert"
secondaryHeaderName	String	O	1	The header name to identify the consumer NF according to the ingress rate limiting configurations. This is an optional parameter. The default value is "". It can use the following values: • "User-Agent" • "X-Forwarded-Client-Cert"
userAgentHeaderFormat	String	M	1	The header format to identify the consumer NF according to the ingress rate limiting configurations. It supports the following formats: • Format1: NFTYPE-NFINSTANCEID FQDN or NFTYPE-NFINSTANCEID-FQDN • Format2: NFTYPE-FQDN NFINSTANCEID or NFTYPE-FQDN-NFINSTANCEID • Format3: NFTYPE-NFINSTANCEID • Format4: NFTYPE-FQDN Where, • NFTYPE indicates the type of consumer NF. • NFINSTANCEID indicates the instance ID of the consumer NF. • FQDN indicates the FQDN of the consumer NF. In the aforementioned example, "-" is a separator and NFInstanceID, FQDN, and Hostname are supported IDs.
userAgentHeaderSeparator	String	M	1	This is the separator that the User-Agent header uses to separate NFINSTANCEID and FQDN. The default value is NULL.
xfccHeaderCertExtractIndex	String	M	1	The certificate extract index contains certificate information in the XFCC header. This parameter is used to decode "X-Forwarded-Client-Cert" for the FQDN. The default value is 0.

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Table 2-343 (Cont.) ConsumerInfo

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
xfccHeaderExtractField	String	M	1	This is the name of the field that has to be retrieved from the XFCC header. The default value is DNS.
xfccHeaderExtractIndex	String	M	1	Index where the Field configured in 'extractField' is present in the XFCC header for extraction. The default value is 0.

Json Format:

```
[
  {
    "primaryHeaderName": "string",
    "secondaryHeaderName": "string",
    "userAgentHeaderFormat": "string",
    "userAgentHeaderSeparator": "string",
    "xfccHeaderCertExtractIndex": "string",
    "xfccHeaderExtractField": "string",
    "xfccHeaderExtractIndex": "string"
  }
]
```

Response Body

Response body data model:

Data Type	Description
ConsumerInfo	Determines the header type such as XFCC or User-Agent, in the ingress message request.
ProblemDetails	Returns when an invalid combination or more than two query parameters are provided.

Resource Definition:

This section describes GET and PUT resource types supported by ConsumerInfo.

GET API

This section describes the resource to fetch the existing ConsumerInfo configuration.

Resource URI: `/ocscp/scpc-configuration/v1/consumerNFInfo/headerInfo`

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Table 2-344 Data structures supported by the GET Response Body on this resource

Field Name	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
consumerInfo	M	1	200 OK	Determines the header type such as XFCC or User-Agent, in the ingress message request.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than two query parameters are provided.

```
curl -X GET "http://10.75.237.50:31337/ocscp/scpc-configuration/v1/
consumerNfInfo/headerInfo" -H  "accept: application/json"
```

```
{
  "primaryHeaderName": "User-Agent",
  "secondaryHeaderName": "X-Forwarded-Client-Cert",
  "userAgentHeaderFormat": "NFTYPE-NFINSTANCEID FQDN",
  "userAgentHeaderSeparator": "NULL",
  "xfccHeaderCertExtractIndex": "0",
  "xfccHeaderExtractField": "DNS",
  "xfccHeaderExtractIndex": "0"
}
```

PUT API

This resource configures the use of Ingress Rate Limiting Configuration header using the Request Body.

Resource URI: `/ocscp/scpc-configuration/v1/consumerNFInfo/headerInfo`

Table 2-345 Data Structures Supported by the PUT Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
consumerInfo	M	1	200 OK	Determines the header type such as XFCC or User-Agent, in the ingress message request.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or more than two query parameters are provided.

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Success Response

```
curl -X PUT "http://10.75.237.50:31337/ocscp/scpc-configuration/v1/
consumerNfInfo/headerInfo" -H  "accept: */*" -H  "Content-Type: application/
json" -d "{\"


Request Body:

{
  "primaryHeaderName": "X-Forwarded-Client-Cert",
  "secondaryHeaderName": "User-Agent",
  "userAgentHeaderFormat": "NFTYPE,NFINSTANCEID,FQDN",
  "userAgentHeaderSeparator": "NULL",
  "xfccHeaderCertExtractIndex": "0",
  "xfccHeaderExtractField": "DNS",
  "xfccHeaderExtractIndex": "0"
}

Response body

[
  {
    "primaryHeaderName": "X-Forwarded-Client-Cert",
    "secondaryHeaderName": "User-Agent",
    "userAgentHeaderFormat": "NFTYPE-NFINSTANCEID FQDN",
    "userAgentHeaderSeparator": "NULL",
    "xfccHeaderCertExtractIndex": "0",
    "xfccHeaderExtractField": "DNS",
    "xfccHeaderExtractIndex": "0"
  }
]
```

2.34 Configuring SCP Services

This section provides configuration information about thread watchdog and queue alerts threshold required for SCP microservices.

Resources

The following table describes the resource name to retrieve and update configuration at the SCP microservices level.

Table 2-346 Resource Name

Resource Name	Resource URI	HTTP Method	Description
scp-service-config	/ocscp/scpc-configuration/{version}/scp-service-config	GET ALL	Retrieves all the SCP microservices configurations.
scp-service-config	/ocscp/scpc-configuration/{version}/scp-service-config/{serviceName}	GET	Retrieves SCP microservices configurations based on servicename.

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Table 2-346 (Cont.) Resource Name

Resource Name	Resource URI	HTTP Method	Description
scp-service-config	/ocscp/scpc-configuration/{version}/scp-service-config/{serviceName}	PUT	Updates all the SCP microservices configurations based on servicename.

Data Model

This REST API is used to update microservice level configurations for SCP, therefore the data model is generic.

Generic Data Model

Table 2-347 ScpServiceConfigs

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values
serviceName	String	M	1	Indicates the SCP microservice name.	Valid microservice names of SCP, for example, • scpc-notification • scp-worker • scp-nrfproxy • scpc-subscription • scpc-alternate-resolution • scpc-audit • scpc-configuration • scp-cache • scp-load-manager • scp-nrfproxy-oauth
scpServiceConfigs	Map<String, IScpServiceConfigValue>	M	1	Contains microservice level configurations provided with the type of configurations and value in the JSON structure.	-

Specific Data Model

TaskInfoScpConfig

The following data model is defined to specify thread related configurations.

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Table 2-348 ScpServiceConfigValue

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Values
type	Type	M	1	Indicates the type of configuration to identify whether the value is single or range.	VALUE	VALUE
value	List<TaskInfoScpConfig>	M	1	Indicates the list of values that specify the thread information configurations.	List of TaskInfoScpConfig. For more information, see Table 2-349.	For default values, see Table 2-349.

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Table 2-349 TaskInfoScpConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Value	Default Value
queueName	String	NA	1	Indicates the name of the queue for which these configurations are applicable.	The set of allowed values for each supported micro-service, for example, serviceName, is as follows: serviceName: scpc-notification • notificationQueue • waitingQueue • runQueue serviceName: scp-worker • scpDownstreamExecutorQueue • scpNrfProxyDownstreamExecutorQueue • scpUpstreamExecutorQueue • scpClientExecutorQueue • scpUpdateSLCertsQueue • scpMediationDownstreamExecutorQueue • scpReconfigureEgressRLExecutorQueue • scpTrafficFeedExecutorQueue serviceName: scp-nrfproxy • scpDownstreamExecutorQueue • scpUpstreamExecutorQueue	The set of default values for each supported micro-service, for example, serviceName, is as follows: serviceName: scpc-notification • notificationQueue • waitingQueue • runQueue serviceName: scp-worker • scpDownstreamExecutorQueue • scpNrfProxyDownstreamExecutorQueue • scpUpstreamExecutorQueue • scpClientExecutorQueue • scpUpdateSLCertsQueue • scpMediationDownstreamExecutorQueue • scpReconfigureEgressRLExecutorQueue • scpTrafficFeedExecutorQueue serviceName: scp-nrfproxy • scpDownstreamExecutorQueue • scpUpstreamExecutorQueue

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Table 2-349 (Cont.) TaskInfoScpConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Value	Default Value
					serviceName: scp-cache • accessTokenCohEvExecutorQueue • accessTokenAppEvExecutorQueue • scpCacheExecutorQueue serviceName: scp-load-manager • sutLciCohEvExecutorQueue • sutLciAppEvExecutorQueue • peerLciCohEvExecutorQueue • peerLciAppEvExecutorQueue • loadCohEvExecutorQueue • loadAppEvExecutorQueue	serviceName: scp-cache • accessTokenCohEvExecutorQueue • accessTokenAppEvExecutorQueue • scpCacheExecutorQueue serviceName: scp-load-manager • sutLciCohEvExecutorQueue • sutLciAppEvExecutorQueue • peerLciCohEvExecutorQueue • peerLciAppEvExecutorQueue • loadCohEvExecutorQueue • loadAppEvExecutorQueue
criticalQLogThreshold	String	O	1	Indicates the percentage (%) value for queue usage threshold upon reaching which a "critical" alert is raised.	0-100%	85%
majorQLogThreshold	String	O	1	Indicates the percentage (%) value for queue usage threshold upon reaching which a "major" alert is raised.	0-100%	75%
minorQLogThreshold	String	O	1	Indicates the percentage (%) value for queue usage threshold upon reaching which a "minor" alert is raised.	0-100%	65%

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Queue names and Usages
The following lists the queue names and their usages:

Worker queue names

- scpDownstreamExecutorQueue: Downstream (message received from consumer) message handling thread pool queue
- scpNrfProxyDownstreamExecutorQueue: Downstream message handling thread pool queue for nrfProxy
- scpUpstreamExecutorQueue: Upstream (response received) message handling thread pool queue
- scpClientExecutorQueue: Currently not in use
- scpUpdateSSLCertsQueue: Thread pool queue for all the ssl certificate related threads
- scpMediationDownstreamExecutorQueue: Downstream message handling thread pool queue for mediation
- scpReconfigureEgressRLExecutorQueue: RateLimiter thread pool queue
- scpTrafficFeedExecutorQueue: Traffic feed thread pool queue

NRF Proxy Queue Names

- scpDownstreamExecutorQueue: Downstream(message received from Worker) message handling thread pool queue
- scpUpstreamExecutorQueue: Upstream (response received) message handling thread pool queue

Notification Queue Names

- notificationQueue: If a notification arrives at SCP, it is placed in the notification queue, which has a capacity of 5000
- waitingQueue: The notification is removed from the notification queue and added to the waiting queue, which has a capacity of 5000 for each nf type
- runQueue: Finally, the notification is moved from waitingQueue to runQueue. The notification is processed from runQueue; capacity is 40.

Cache Queue Names

- accessTokenCohEvExecutorQueue: A queue the cache service uses to service access token coherence requests.
- accessTokenAppEvExecutorQueue: A queue the cache service uses to serve access token application requests.
- scpCacheExecutorQueue: SCP cache executor queue for the thread pool used to serve global rate-limiting coherence requests.

Load Manager Names

- sutLciCohEvExecutorQueue: A queue the Load Manager service uses to service LCI coherence event requests.
- sutLciAppEvExecutorQueue: A queue the Load Manager service uses to service LCI application event requests.
- peerLciCohEvExecutorQueue: A queue that the Load Manager service uses to service requests for peer LCI coherence events.
- peerLciAppEvExecutorQueue: A queue that the Load Manager service uses to service requests for peer LCI application event services.

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- loadCohEvExecutorQueue: A queue that the Load Manager service uses to service load coherence event requests.
- loadAppEvExecutorQueue: A queue that the Load Manager service uses to service load application event requests.

> **Note**
>
> All queue capacities are 10,000 for worker and NRF queues. These queue capacities are not configurable and only allow threshold value updates.

The following data model is defined to specify thread related configurations.

Table 2-350 ThreadWatchDogScpServiceConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Values
type	Type	M	1	Indicates the type of configuration to identify whether the value is single or range.	VALUE	VALUE
value	List<ThreadWatchDogConfig>	M	1	Indicates the list of values that specify the thread information configurations.	List of ThreadwatchDogConfig. For more information, see Table 2-350.	For information about default values, see Table 2-350.

Table 2-351 ThreadWatchDogConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Value
enableThreadWatchDog	Boolean	M	1	Specifies whether to enable or disable liveliness failures. If this parameter is set to true, liveliness fails whenever the watchdog reports a stuck or deadlocked thread.	true or false	true
watchDogMonitoringInterval	int	O	1	Indicates the time interval used by watchdog to monitor if any threads are stuck.The time interval is in milliseconds.	500-10000	3000

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Table 2-351 (Cont.) ThreadWatchDogConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Value
watchDogInterval	int	O	1	Indicates the maximum time allowed for threads to be nonresponsive. Watchdog uses this time to determine if a thread is stuck. The time interval is in milliseconds. For example, if watchDogInterval is 10s and a thread does not respond for 10s, then watchdog marks that thread as stuck or nonresponsive.	5000-900000	9000 **Note:** Default value for scpc-notification micro-service for r15 deployment is 15m, for example, 900000
watchDogFailureCount	int	O	1	Indicates the maximum number of times threadWatchDog attempts to check if a thread is stuck before marking the thread as hung or stuck. For instance, if this value is 3, then the watchdog will check if a thread is stuck for 3 times continuously before marking it as stuck/hung.	1-25	5

The following data model is defined to specify inter pod resiliency configurations.

Table 2-352 ConnectivityWatchDogServiceConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Values
type	Type	M	1	Indicates the type of configuration to identify whether the value is single or range.	VALUE	VALUE
value	List<ConnectivityWatchDogConfig>	M	1	Indicates the list of values that specify the pod resiliency configurations.	List of ConnectivityWatchDogConfig. For more information, see Table 2-352.	For information about default values, see Table 2-352.

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Table 2-353 ConnectivityWatchDogConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Value
enableConnectivityWatchDog	Boolean	M	1	Specifies whether to enable or disable interpod resiliency check.	true or false	true
connectivitytMonitoringInterval	int	O	1	Indicates the time interval for resiliency in milliseconds.	500-10000	1000
connectivityRetryThreshold	int	O	1	Indicates the maximum number of attempts to be made if any pod is not reachable.	0-5	2
connectivityResponseTimeout	int	O	1	Indicates the maximum response timeout in milliseconds for the client to error out.	500-10000	2000
connectivityRetryInterval	int	O	1	Indicated the time interval between retries in milliseconds	500-10000	500

The following data model is defined to specify routing options configurations.

Table 2-354 RoutingOptionsScpServiceConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description	Allowed Values	Default Values
type	Type	M	1	Indicates the type of configuration to identify whether the value is single or range.	VALUE	VALUE
value	List<RoutingOptionsConfig>	M	1	Indicates the list of values that specify the pod resiliency configurations.	List of RoutingOptionsConfig. For more information, see Table 2-355.	For information about default values, see Table 2-355.

Table 2-355 RoutingOptionsConfig

Field Name	Data Type	Mandatory (M) or Optional (O)	Cardinality	Description	Allowed Values	Default Value
responseTimeout	int	M	1	Indicates the maximum response timeout in seconds.	0-10	1
maxRetryAttempts	int	M	1	Indicates the maximum number of attempts to establish the connection.	0-5	0

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Micro-service data model

The list of service specific data model is as follows:

SCPC-NOTIFICATION
The SCP service configuration API uses the following data models for scpc-notification service:

- ScpServiceConfigValue
- ThreadWatchDogScpServiceConfig
- ConnectivityWatchDogServiceConfig

Request Body

```
{
  "serviceName": "scpc-notification",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "notificationQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "waitingQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "runQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "notificationThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
```


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```
    }
  }
}
```

Response Body

```
{
  "serviceName": "scpc-notification",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "notificationQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "waitingQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "runQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "notificationThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```

SCPC-WORKER

The SCP service configuration API uses the following data models for the scp-worker service:

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- ScpServiceConfigValue
- ThreadWatchDogScpServiceConfig
- ConnectivityWatchDogServiceConfig
- RoutingOptionsScpServiceConfig

Request Body

```
{
  "serviceName": "scp-worker",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "scpDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpNrfProxyDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpUpstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpClientExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpUpdateSSLCertsQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpMediationDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpReconfigureEgressRLExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
```


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```
      ]
    },
    "routingOptions": {
      "value": {
        "scpc-notification": {
          "responseTimeout": "1s",
          "maxRetryAttempts": 0
        }
      }
    },
    "threadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
     "podOverloadControl": {
      "cpuOverloadConfig": {
        "enabled": true
      },
      "pendingTransactionOverloadConfig": {
        "enabled": true
      }
    }
  }
}
```

Response Body

```
{
  "serviceName": "scp-worker",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "scpDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpNrfProxyDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
```


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```
        "majorQLogThreshold": "75%",
        "minorQLogThreshold": "65%"
      },
      {
        "queueName": "scpUpstreamExecutorQueue",
        "criticalQLogThreshold": "85%",
        "majorQLogThreshold": "75%",
        "minorQLogThreshold": "65%"
      },
      {
        "queueName": "scpClientExecutorQueue",
        "criticalQLogThreshold": "85%",
        "majorQLogThreshold": "75%",
        "minorQLogThreshold": "65%"
      },
      {
        "queueName": "scpUpdateSSLCertsQueue",
        "criticalQLogThreshold": "85%",
        "majorQLogThreshold": "75%",
        "minorQLogThreshold": "65%"
      },
      {
        "queueName": "scpMediationDownstreamExecutorQueue",
        "criticalQLogThreshold": "85%",
        "majorQLogThreshold": "75%",
        "minorQLogThreshold": "65%"
      },
      {
        "queueName": "scpReconfigureEgressRLExecutorQueue",
        "criticalQLogThreshold": "85%",
        "majorQLogThreshold": "75%",
        "minorQLogThreshold": "65%"
      }
    ]
  },
  "routingOptions": {
    "value": {
      "scpc-notification": {
        "responseTimeout": "1s",
        "maxRetryAttempts": 0
      }
    }
  },
  "threadWatchDogInfo": {
    "value": {
      "enableThreadWatchDog": true,
      "watchDogMonitoringInterval": 1000,
      "watchDogInterval": 9000,
      "watchDogFailureCount": 1
    }
  },
  "connectivityWatchDogInfo": {
    "value": {
      "connectivitytMonitoringInterval": 1000,
      "enableConnectivityWatchDog": true,
      "connectivityRetryThreshold": 3,
```


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```
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
   "podOverloadControl": {
      "cpuOverloadConfig": {
        "enabled": true
      },
      "pendingTransactionOverloadConfig": {
        "enabled": true
      }
    }
  }
}
```

SCPC-NRFPROXY

The SCP service configuration API uses the following data models for scp-nrfproxy service:

- ScpServiceConfigValue
- ThreadWatchDogScpServiceConfig
- ConnectivityWatchDogServiceConfig

Request Body

```
{
  "serviceName": "scp-nrfproxy",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "scpDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpUpstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    },
    "nrfThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
```


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```
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    }
  }
}
```

Response Body

```
{
  "serviceName": "scp-nrfproxy",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "scpDownstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpUpstreamExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    },
    "nrfThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    }
  }
}
```

SCPC-CONFIGURATION

The SCP service configuration API uses the following data models for scp-nrfproxy service:

- ThreadWatchDogScpServiceConfig

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- ConnectivityWatchDogServiceConfig

Request Body

```
{
  "serviceName": "scpc-configuration",
  "scpServiceConfigs": {
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "configurationThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```

Response Body

```
{
  "serviceName": "scpc-configuration",
  "scpServiceConfigs": {
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "configurationThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```

SCPC-SUBSCRIPTION

The SCP service configuration API uses the following data models for scpc-subscription service:

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- ThreadWatchDogScpServiceConfig
- ConnectivityWatchDogServiceConfig

Request Body

```
{
  "serviceName": "scpc-subscription",
  "scpServiceConfigs": {
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "subscriptionThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```

Response Body

```
{
  "serviceName": "scpc-subscription",
  "scpServiceConfigs": {
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "subscriptionThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```

SCPC-AUDIT

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The SCP service configuration API uses the following data models for scpc-subscription service:

- ThreadWatchDogScpServiceConfig
- ConnectivityWatchDogServiceConfig

Request Body

```
{
  "serviceName": "scpc-audit",
  "scpServiceConfigs": {
    "auditThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    }
  }
}
```

Response Body

```
{
  "serviceName": "scpc-audit",
  "scpServiceConfigs": {
    "auditThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    },
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    }
  }
}
```


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SCPC-ALTERNATE-RESOLUTION

The SCP service configuration API uses the following data models for scp-nrfproxy service:

- ThreadWatchDogScpServiceConfig
- ConnectivityWatchDogServiceConfig

Request Body

```
{
  "serviceName": "scpc-alternate-resolution",
  "scpServiceConfigs": {
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "alternateResolutionThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```

Response Body

```
{
  "serviceName": "scpc-alternate-resolution",
  "scpServiceConfigs": {
    "connectivityWatchDogInfo": {
      "value": {
        "connectivitytMonitoringInterval": 1000,
        "enableConnectivityWatchDog": true,
        "connectivityRetryThreshold": 3,
        "connectivityResponseTimeout": 5000,
        "connectivityRetryInterval": 1000
      }
    },
    "alternateResolutionThreadWatchDogInfo": {
      "value": {
        "enableThreadWatchDog": true,
        "watchDogMonitoringInterval": 1000,
        "watchDogInterval": 9000,
        "watchDogFailureCount": 1
      }
    }
  }
}
```


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SCP-CACHE

The SCP service configuration API uses the following data models for scp-cache service:

- ScpServiceConfigValue

Request Body

```
{
  "serviceName": "scp-cache",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "accessTokenCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "accessTokenAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "scpCacheExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    }
  }
}
```

Response Body

```
{
  "serviceName": "scp-cache",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "accessTokenCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "accessTokenAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
```


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```
        {
          "queueName": "scpCacheExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    }
  }
}
```

SCP-LOAD-MANAGER

The SCP service configuration API uses the following data models for scp-load-manager service:

- ScpServiceConfigValue

Request Body

```
{
  "serviceName": "scp-load-manager",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "sutLciCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "sutLciAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "peerLciCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "peerLciAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "loadCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
```


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```
          "queueName": "loadAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    }
  }
}
```

Response Body

```
{
  "serviceName": "scp-load-manager",
  "scpServiceConfigs": {
    "taskInfo": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "sutLciCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "sutLciAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "peerLciCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "peerLciAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "loadCohEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "loadAppEvExecutorQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
```


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```
    }
  }
}
```

Resource Definition

GET REST API

This resource retrieves routing options for all the applications.

Resource URI: /ocscp/scpc-configuration/{version}/scp-service-config

Table 2-356 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
scpServiceConfigs	M	1..N	200 OK	Retrieves configurations for SCP microservices.

This resource retrieves routing options for the application specified by serviceName.

Resource URI: /ocscp/scpc-configuration/{version}/scp-service-config/{serviceName}

Table 2-357 Path Parameters

Name	Data Type	Mandatory (M) or Optional(O)	Description
serviceName	String	M	Retrieves configurations on microserviceName. The supported values are worker, notification, and nrfproxy.

Table 2-358 Data Structures Supported by the GET Response Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
scpServiceConfigs	M	1	200 OK	Indicates service configurations for SCP microservices.
ProblemDetails	M	1	404	Returns when an invalid combination or more than two query parameters are provided.

Curl GET/GET ALL command

GET ALL

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Success Response

```
curl -X GET   http://10.75.213.144:31343/ocscp/scpc-configuration/v1/scp-
service-config  -H 'accept: application/json' -v


* About to connect() to 10.75.213.144 port 31343 (#0)
*   Trying 10.75.213.144...
* Connected to 10.75.213.144 (10.75.213.144) port 31343 (#0)
> GET /ocscp/scpc-configuration/v1/scp-service-config HTTP/1.1
> User-Agent: curl/7.29.0
> Host: 10.75.213.144:31343
> accept: application/json
>
< HTTP/1.1 200 OK
< Connection: keep-alive
< Transfer-Encoding: chunked
< Content-Type: application/json
< Date: Thu, 17 Nov 2022 06:12:26 GMT
<


 [{"serviceName":"scp-nrfproxy","scpServiceConfigs":{"taskInfo":
{"type":"VALUE","value":
[{"queueName":"scpDownstreamExecutorQueue","criticalQLogThreshold":"85%","majo
rQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpUpstreamExecutorQueue","criticalQLogThreshold":"85%","majorQL
ogThreshold":"75%","minorQLogThreshold":"65%"}]},"nrfThreadWatchDogInfo":
{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}},"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}}}},{"serviceName":"scp-worker","scpServiceConfigs":
{"taskInfo":{"type":"VALUE","value":
[{"queueName":"scpDownstreamExecutorQueue","criticalQLogThreshold":"85%","majo
rQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpNrfProxyDownstreamExecutorQueue","criticalQLogThreshold":"85%
","majorQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpUpstreamExecutorQueue","criticalQLogThreshold":"85%","majorQL
ogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpClientExecutorQueue","criticalQLogThreshold":"85%","majorQLog
Threshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpUpdateSSLCertsQueue","criticalQLogThreshold":"85%","majorQLog
Threshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpMediationDownstreamExecutorQueue","criticalQLogThreshold":"85
%","majorQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpReconfigureEgressRLExecutorQueue","criticalQLogThreshold":"85
%","majorQLogThreshold":"75%","minorQLogThreshold":"65%"}]},"routingOptions":
{"value":{"scpc-notification":
{"responseTimeout":"1s","maxRetryAttempts":0}}},"threadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}},"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}}}},{"serviceName":"scpc-alternate-
```


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```
resolution","scpServiceConfigs":{"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}},"alternateResolutionThreadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}}}},{"serviceName":"scpc-
audit","scpServiceConfigs":{"auditThreadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}},"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}}}},{"serviceName":"scpc-configuration","scpServiceConfigs":
{"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}},"configurationThreadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}}}},{"serviceName":"scpc-
notification","scpServiceConfigs":{"taskInfo":{"type":"VALUE","value":
[{"queueName":"notificationQueue","criticalQLogThreshold":"85%","majorQLogThre
shold":"75%","minorQLogThreshold":"65%"},
{"queueName":"waitingQueue","criticalQLogThreshold":"85%","majorQLogThreshold"
:"75%","minorQLogThreshold":"65%"},
{"queueName":"runQueue","criticalQLogThreshold":"85%","majorQLogThreshold":"75
%","minorQLogThreshold":"65%"}]},"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}},"notificationThreadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}}}},{"serviceName":"scpc-
subscription","scpServiceConfigs":{"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}},"subscriptionThreadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}}}}]
```


GET Command

Success Response

```
curl -X GET   http://10.75.213.144:31343/ocscp/scpc-configuration/v1/scp-
service-config/scp-worker  -H 'accept: application/json' -v


* About to connect() to 10.75.213.144 port 31343 (#0)
*   Trying 10.75.213.144...
* Connected to 10.75.213.144 (10.75.213.144) port 31343 (#0)
> GET /ocscp/scpc-configuration/v1/scp-service-config/scp-worker HTTP/1.1
> User-Agent: curl/7.29.0
> Host: 10.75.213.144:31343
> accept: application/json
>
< HTTP/1.1 200 OK
< Connection: keep-alive
< Transfer-Encoding: chunked
```


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```
< Content-Type: application/json
< Date: Thu, 17 Nov 2022 06:17:08 GMT
<
{"serviceName":"scp-worker","scpServiceConfigs":{"taskInfo":
{"type":"VALUE","value":
[{"queueName":"scpDownstreamExecutorQueue","criticalQLogThreshold":"85%","majo
rQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpNrfProxyDownstreamExecutorQueue","criticalQLogThreshold":"85%
","majorQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpUpstreamExecutorQueue","criticalQLogThreshold":"85%","majorQL
ogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpClientExecutorQueue","criticalQLogThreshold":"85%","majorQLog
Threshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpUpdateSSLCertsQueue","criticalQLogThreshold":"85%","majorQLog
Threshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpMediationDownstreamExecutorQueue","criticalQLogThreshold":"85
%","majorQLogThreshold":"75%","minorQLogThreshold":"65%"},
{"queueName":"scpReconfigureEgressRLExecutorQueue","criticalQLogThreshold":"85
%","majorQLogThreshold":"75%","minorQLogThreshold":"65%"}]},"routingOptions":
{"value":{"scpc* Connection #0 to host 10.75.213.144 left intact
-notification":
{"responseTimeout":"1s","maxRetryAttempts":0}}},"threadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}},"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}}}}
```

Failure Response

```
curl -X 'GET'   'http://10.75.224.107:31368/ocscp/scpc-configuration/v1/scp-
service-config/Worker1'   -H 'accept: application/json' -v


* About to connect() to 10.75.224.107 port 31368 (#0)
*   Trying 10.75.224.107...
* Connected to 10.75.224.107 (10.75.224.107) port 31368 (#0)
> GET /ocscp/scpc-configuration/v1/scp-service-config/Worker1 HTTP/1.1
> User-Agent: curl/7.29.0
> Host: 10.75.224.107:31368
> accept: application/json
>
< HTTP/1.1 404 Not Found
< Connection: keep-alive
< Transfer-Encoding: chunked
< Content-Type: application/problem+json
< Date: Thu, 18 Aug 2022 09:08:36 GMT
<
* Connection #0 to host 10.75.224.107 left intact
{"title":"Not Found","status":"404","detail":"Scp_Service_Configuration for
given serviceName not found . Please refer to the User Guide.","instance":"/
ocscp/scpc-configuration/v1/scp-service-config/
Worker1","cause":"DATA_NOT_FOUND"}
```

PUT REST API

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This resource configures routing options for the application.

Resource URI: /ocscp/scpc-configuration/{version}/scp-service-config/{appname}

Table 2-359 Data Structures Supported by the PUT Request Body on this Resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
scpSserviceConfigs	1	M	scp-service-configs for the application.

Table 2-360 Data structures supported by the PUT Response Body on this resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Code	Description
scpServiceConfigs	M	1	200 OK	Indicates service configurations for SCP microservices.
ProblemDetails	M	1	400/404	Returns when an invalid combination or more than two query parameters are provided.

Curl PUT Command

Success Response

```
curl -X 'PUT' 'http://10.75.213.144:31343/ocscp/scpc-configuration/v1/scp-
service-config/scpc-alternate-resolution' \
        "connectivityRetryInterval": 1000


>   -H 'accept: application/json' \
>   -H 'Content-Type: application/json' \
>   -d '{
>   "serviceName": "scpc-alternate-resolution",
>   "scpServiceConfigs": {
>     "connectivityWatchDogInfo": {
>       "value": {
>         "connectivitytMonitoringInterval": 1000,
>         "enableConnectivityWatchDog": true,
>         "connectivityRetryThreshold": 3,
>         "connectivityResponseTimeout": 5000,
>         "connectivityRetryInterval": 1000
>       }
>     },
>     "alternateResolutionThreadWatchDogInfo": {
>       "value": {
>         "enableThreadWatchDog": true,
>         "watchDogMonitoringInterval": 1000,
>         "watchDogInterval": 9000,
>         "watchDogFailureCount": 1
>       }
>     }
>   }
> }'
```


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{"serviceName":"scpc-alternate-resolution","scpServiceConfigs":
{"connectivityWatchDogInfo":{"value":
{"connectivitytMonitoringInterval":1000,"enableConnectivityWatchDog":true,"con
nectivityRetryThreshold":3,"connectivityResponseTimeout":5000,"connectivityRet
ryInterval":1000}},"alternateResolutionThreadWatchDogInfo":{"value":
{"enableThreadWatchDog":true,"watchDogMonitoringInterval":1000,"watchDogInterv
al":9000,"watchDogFailureCount":1}}}}

Failure Response 1

```
curl -X 'PUT'   'http://10.75.224.107:31368/ocscp/scpc-configuration/v1/scp-
service-config/Notification'   -H 'accept: application/json'   -H 'Content-
Type: application/json'   -d '{



"serviceName": "NOTIFICATION",
  "scpServiceConfigs": {
    "TaskInfoScpConfig": {
      "type": "VALUE",
      "value": [
        {
          "queueName": "notificationQueue",
          "criticalQLogThreshold": "86%",
          "majorQLogThreshold": "76%",
          "minorQLogThreshold": "66%"
        },
        {
          "queueName": "waitingQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        },
        {
          "queueName": "runQueue",
          "criticalQLogThreshold": "85%",
          "majorQLogThreshold": "75%",
          "minorQLogThreshold": "65%"
        }
      ]
    }
  }
>
> '
{"timestamp":"2022-08-18T09:13:28.253+00:00","status":400,"error":"Bad
Request","path":"/ocscp/scpc-configuration/v1/scp-service-config/
Notification"}
```


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Failure Response 2

```
 curl -X 'PUT' 'http://10.75.224.107:31368/ocscp/scpc-configuration/v1/scp-
service-config/Subscription' \


>   -H 'accept: application/json' \
>   -H 'Content-Type: application/json' \
>   -d '{
>   "serviceName": "subscription",
>   "scpServiceConfigs": {
>     "TaskInfoScpConfig": {
>       "type": "VALUE",
>       "value": [
>         {
>           "queueName": "notificationQueue",
>           "criticalQLogThreshold": "86%",
>           "majorQLogThreshold": "76%",
>           "minorQLogThreshold": "66%"
>         },
>         {
>           "queueName": "waitingQueue",
      ]
    }
>           "criticalQLogThreshold": "85%",
>           "majorQLogThreshold": "75%",
>           "minorQLogThreshold": "65%"
>         },
>         {
>           "queueName": "runQueue",
>           "criticalQLogThreshold": "85%",
>           "majorQLogThreshold": "75%",
>           "minorQLogThreshold": "65%"
>         }
>       ]
>     }
>   }
> }'
{"title":"Not Found","status":"404","detail":"Scp_Service_Configuration for
given serviceName not found . Please refer to the User Guide.","instance":"/
ocscp/scpc-configuration/v1/scp-service-config/
Subscription","cause":"DATA_NOT_FOUND"}
```

2.35 Configuring Load Control Information

This section describes REST API configurations required for the Load Control based on the Load Control Information (LCI) Header feature:

Resource

The following table describes the resource URIs and the corresponding HTTP methods for the to retrieve, add, or update SCP features.

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Table 2-361 Resources

Resource Name	Resource URI	HTTP Method	Description
scp-features	/ocscp/scpc-configuration/v1/scp-features/lci	GET	Retrieves records based on featureName as a path variable.
scp-features	/ocscp/scpc-configuration/v1/scp-features/lci	PUT	To enable/disable the scp feature and its parameters.

Data Model

Request Body

The following table describes LCISpecificConfig data types.

Table 2-362 LCISpecificConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Range	Description
scpLciConveyanceEnable	Boolean	M	false	NA	This parameter enables or disables the addition of SCP LCI.
relayPeerLci	Boolean	M	true	NA	This parameter enables or disables the relay of the peer's LCI.
scpLciConveyanceInterval	Integer	O	5000 milliseconds	1000 miliseconds - 3600000 miliseconds	This parameter governs the periodicity of LCI conveyence. After the duration specified in this parameter, SCP LCI is transmitted to peers.
scpLciConveyanceMinLoadChange	Integer	M	5	5 - 25	This parameter indicates the minimum eligible change in load while conveying LCI.
scpLciConveyanceMinLoadThreshold	Integer	M	30	0-60	This parameter allows SCP to define a minimum load change threshold that can trigger the generation of an LCI header and report it to peers if allowed.
scpLciConveyancetoUnknownPeer	Boolean	M	false	NA	This parameter indicates whether SCP can send its LCI to an unknown peer NF.
peerLciProcessingMinLoadChange	Integer	M	5	0-25	This parameter allows SCP to define a minimum load change in a peer NF's load as indicated in LCI, which can trigger a re-evaluation of routing rules.
unknownPeerLciExpiry	Integer	M	300 seconds	30 seconds - 900 seconds	This parameter specifies the minimum number of seconds required to remove an unknown peer's LCI from cache.

Response Body

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The following table describes response body data models that vary based on the REST operation status.

Table 2-363 Response Body Data Type

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(SCPFeaturesWrapper)	M	1	200 OK	Indicates the list of SCP features (SCPFeaturesWrapper) matching criteria.
ProblemDetails	M	1	404 NOT FOUND	Returns when the data is not found for given query parameters.

JSON Format

```
Current JSON Format
 {
  "featureName": "lci",
  "enabled": false,
  "featureSpecificConfig": {
    "scpLciConveyanceEnable": false,
    "relayPeerLci": true,
    "scpLciConveyanceInterval": 2000,
    "scpLciConveyanceMinLoadChange": 5,
    "scpLciConveyanceMinLoadThreshold": 30,
    "scpLciConveyancetoUnknownPeer": false,
    "peerLciProcessingMinLoadChange": 5,
    "unknownPeerLciExpiry": 300
  }
}
```

Resource Definition

GET REST API

This section describes the resource to fetch all the SCP feature details (SCPFeaturesWrapper) based on the query parameters.

If no query parameter is provided, all the SCP feature detail are returned.

Resource URI: `ocscp/scpc-configuration/v1/scp-features/lci`

The following table describes the URI query parameters supported by the GET method on this resource.

Table 2-364 Parameters Supported by the GET Method

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
featureName	String	O	Specifies the identity of featureName for which SCP features are fetched.

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> **Note**
>
> featureName is a valid combination of query parameter or path variable.

Table 2-365 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(SCPFeaturesWrapper)	M	1	200 OK	Indicates the list of of LCI header Info (SCPFeaturesWrapper) (or) Get specific record based on query parameters.
ProblemDetails	M	1	404 NOT FOUND	Returns when the data is not found for given query parameters.

Example

Successful response - 1

```
curl -X GET "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/scp-features/
lci" -H "accept: application/json“


Code: 200 {   {
  "featureName": "lci",
  "enabled": false,
  "featureSpecificConfig": {
    "scpLciConveyanceEnable": false,
    "relayPeerLci": true,
    "scpLciConveyanceInterval": 2000,
    "scpLciConveyanceMinLoadChange": 5,
    "scpLciConveyanceMinLoadThreshold": 30,
    "scpLciConveyancetoUnknownPeer": false,
    "peerLciProcessingMinLoadChange": 5,
    "unknownPeerLciExpiry": 300
  }
}
```

Failure case 1

```
curl -X GET "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/scp-
features/lciheader_1" -H "accept: application/json“
   Response Body:
{
  "title": "Not Found",
  "status": "404",
  "detail": "SCP Features configuration data not found against given query
parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/scp-features/lciheader_1",
  "cause": "DATA_NOT_FOUND"
}
```


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PUT REST API

This resource adds or updates the SCP feature interplmn routing configuration using the request body.

Resource URI: `ocscp/scpc-configuration/v1/scp-features/lci`

Table 2-366 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
SCPFeaturesWrapper	M	1	200 OK	Indicates the SCP feature lciheader configuration data.
ProblemDetails	M	1	400 BAD REQUEST	Returns the ProblemDetails structure as defined in 3GPP TS 29.571 section 5.2.4.1.

Example
Successful response:

```
curl -X PUT "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/scp-
features/lciheader" -H "accept: */*" -H "Content-Type: application/json" -d
“    {
  "featureName": "lci",
  "enabled": false,
  "featureSpecificConfig": {
    "scpLciConveyanceEnable": false,
    "relayPeerLci": true,
    "scpLciConveyanceInterval": 2000,
    "scpLciConveyanceMinLoadChange": 5,
    "scpLciConveyanceMinLoadThreshold": 30,
    "scpLciConveyancetoUnknownPeer": false,
    "peerLciProcessingMinLoadChange": 5,
    "unknownPeerLciExpiry": 300
  }
}  200 OK
```

Failure case 1:

> **Note**
>
> In case SCP is not configured with local or foreign PLMNs and invalid NF type is configured for this feature, you receive a Bad Request 400 with error message.

```
curl -X PUT "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/scp-
features/lci"-H "accept: */*"-H "Content-Type:
      application/json"-d "
{
"title": "Bad Request",
"status": "400",
"detail": "Unknown Feature: lxi not supported. Please refer to the User
Guide.",
```


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```
"instance": "/ocscp/scpc-configuration/v1/scp-features/lxi",
"cause": "MANDATORY_IE_INCORRECT"
}
400 Bad Request
```

Failure case 2:

```
curl -X PUT "http://10.75.214.171:30970/ocscp/scpc-configuration/v1/scp-
features/lci"-H "accept: */*"-H "Content-Type:
      application/json"-d "
{
"title": "Bad Request",
"status": "400",
"detail": "SCP conveyance interval range should be between 100ms to 3600ms",
"instance": "/ocscp/scpc-configuration/v1/scp-features/lci",
"cause": "MANDATORY_IE_INCORRECT"
}
400 Bad Request
```

2.36 Message Feed Configurations

This section provides information about message feed Data Director configurations at SCP.

2.36.1 Configuring Traffic Feed Data Director

This section describes the Traffic Feed Data Director configurations.

Table 2-367 Resources

Resource name	Resource URI	HTTP method or custom operation	Description
5gsbi-traffic-feed/data-director-config	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/data-director-config	GET	Retrieves Traffic Feed Data Director Config configured at SCP.
5gsbi-traffic-feed/data-director-config	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/data-director-config	PUT	Adds Traffic Feed Data Director Config configured at SCP.
5gsbi-traffic-feed/data-director-config	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/data-director-config	PATCH	Updates Traffic Feed Data Director Config configured at SCP.

Data Model

Request Body

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Table 2-368 trafficFeedDataDirectorConfig

Field Name	Data Type	Default Value	Description
kafkaPartitionSelectionLogic	String	RoundRobin	Indicates the logic to select Kafka partitions to route messages. **RoundRobin**: All the messages are distributed across all the available partitions in a round-robin order. **KeyBased**: Messages with the same correlation-id are routed to the same partition. This ensures the same transaction messages are routed to the same partition.
deliveryTimeoutMs	Integer	5000 milliseconds	Indicates an upper bound on the time to report success or failure to the SCP application from the Kafka Producer Library When this period expires, the Kafka producer reports a failure to application. The value of this configuration should be greater than or equal to the sum of requestTimeoutMs and lingerMs.
trafficFeedBootStrapServer	Object with host and port info host String port Integer	NA	A list of host or port pairs to use for establishing the initial connection to the Kafka cluster.
topic	String	NA	Topic name that SCP uses to write on Kafka Broker.
securityProtocol	String	None	Protocol used to communicate with brokers. The values are: PLAINTEXT, SSL, SASL_PLAINTEXT, SASL_SSL.
saslMechanism	String	None Recommended: PLAIN	SASL mechanism used for client connections. The values are: PLAIN.
keySerializer	String	Json	Key serialization Two Serialization option supported: JSON and STRING.
valueSerializer	String	Json	Value serialization Two Serialization option Supported JSON,STRING
acks	String	0	The number of acknowledgments the producer NF requires the leader to have received before considering a request complete. Available options: • 0 - The producer NF never waits for an acknowledgment from the server at all. • **1** - The producer NF responds after the leader write without waiting for acknowledgment from all the followers. • **all** - The producer NF waits for the full set of in-sync replicas to acknowledge the record. **Note**: Parameter to change the behavior of underlying kafka library.

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Table 2-368 (Cont.) trafficFeedDataDirectorConfig

Field Name	Data Type	Default Value	Description
retryCount	Integer	0	Number of times producer NFs send data to broker in case of error. **Note**: Parameter to change the behavior of underlying kafka library.
retryBackoffMs	Long	100	The amount of time to wait before attempting to retry a failed request to a given topic partition. **Note**: Parameter to change the behavior of underlying kafka library.
requestTimeoutMs	Integer	1000	The maximum amount of time the client waits for the response of a request. **Note**: Parameter to change the behavior of underlying kafka library. Oracle Support shall be consulted before modifying the default value. The value of this parameter must not be more than the threadWatchDog time of the scp-worker microservice.
trafficfeedBlockingSendTimeoutMs	Integer	500	The amount of time for which the producer will block sending messages to the broker when the producer is not able to connect to the broker. maxValue: 200000, minValue: 100 **Note**: Parameter to change the behavior of underlying kafka library. Increasing this value more than the threadWatchDog time of the worker microservice can result in a worker pod crash.
trafficfeedDegradationperiod	Integer	1000	The amount of time the producer waits before sending to the broker when a previous attempt to connect to the broker has failed. maxValue: 10000, minValue: 10 **Note**: Parameter to change the behavior of underlying kafka library.
trafficfeedConsecutiveFailures	Integer	10	The number of consecutive failures allowed by SCP before blocking the producer from sending messages. maxValue: 100, minValue: 1 **Note**: Parameter to change the behavior of underlying kafka library.
batchSize	Integer	16384	It specifies the batch size in bytes based on which records are collected together into fewer requests and sent. **Note**: Parameter to change the behavior of underlying kafka library.
lingerMs	Long	2	It specifies the amount of time for which the producer will wait to allow other records to be sent so that the sends can be batched together. **Note**: Parameter to change the behavior of underlying kafka library.

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Table 2-368 (Cont.) trafficFeedDataDirectorConfig

Field Name	Data Type	Default Value	Description
trafficfeedMaxBlockMsConfig	Long	10	The configuration controls how long the KafkaProducer's send() method will block. **Note**: Parameter to change the behavior of underlying kafka library.
bufferMemory	Long	33554432	The total bytes of memory the producer can use to buffer records waiting to be sent to the server. **Note**: Parameter to change the behavior of underlying kafka library.

Response body data model varies based on Rest operation status. Details can be found in the subsequent sections.

Response Body

Table 2-369 Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
trafficFeedDataDirectorConfig	M	1	200 OK	List of Producer Configuration matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when invalid input are provided.

JSON Format

```
{
  "kafkaPartitionSelectionLogic":"RoundRobin",
  "trafficFeedBootStrapServerList": [
    {
      "host": "10.75.212.228",
      "port": 31215
    }
  ],
  "securityProtocol": "none",
  "saslMechanism": "none",
  "keySerializer": "json",
  "valueSerializer": "json",
  "acks": "0",
  "retryCount": 0,
  "deliveryTimeoutMs":120000,
  "retryBackoffMs": 100,
  "requestTimeoutMs": 1001000,
  "trafficfeedBlockingSendTimeoutMs": 500,
  "trafficfeedDegradationperiod": 1000,
  "trafficfeedConsecutiveFailures": 10,
  "batchSize": 16384,
```


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```
  "lingerMs": 2,
  "trafficfeedMaxBlockMsConfig": 10,
  "bufferMemory": 33554432
}
```

Resource Definition

GET REST API:

Resource to fetch the Traffic server Configuartion Info Details based on the json version.

Resource URI: `/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/data-director-config`

Table 2-370 Data structures supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
trafficFeedDataDirectorConfig	M	1	200 OK	Producer Configuration Info Data

PUT REST API:

Resource to add or update the Traffic server of Producer Configuration using the Request Body.

Resource URI: `/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/data-director-config`

Table 2-371 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
trafficFeedDataDirectorConfig(json)	M	1	200 OK	A list of host or port pairs to use for establishing the initial connection to the Kafka cluster.
String	M	1	400 BAD REQUEST	Returns Problem description when invalid input is provided.

PATCH REST API:

Resource to add or update the Traffic server Configuartion using the Request Body.

Resource URI: `/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/data-director-config`

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Table 2-372 URI Query Parameters Supported by the PATCH Method

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
patchDocument	String	M	1	patchDocument need to be send Example: [{"op":"add","path": "/keySerializer", "value": "JSON"}], [{"op":"add","path": "/topic", "value": "scpTopic1"}], [{ "op":"replace", "path":"/trafficFeedBootStrapServer", "value": [{ "host":"12.11.11.11", "port":8095 } }]
String	M	1	400 BAD REQUEST	Returns Problem description when invalid input is provided.

2.36.2 Configuring Traffic Feed Trigger Point Config

This section describes the Traffic Feed Trigger Point configurations.

Table 2-373 Resources

Resource name	Resource URI	HTTP method or custom operation	Description
5gsbi-traffic-feed/trigger-point	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/trigger-point	GET	Retrieves all the Traffic Feed Trigger Point configuration at SCP.
5gsbi-traffic-feed/trigger-point	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/trigger-point/{ruleName}	GET	Retrieves Traffic Feed Trigger Point configurations at SCP for given ruleName.
5gsbi-traffic-feed/trigger-point	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/trigger-point/{ruleName}	PUT	Updates Traffic Feed Trigger Point configuration at SCP for given ruleName.
5gsbi-traffic-feed/trigger-point	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/trigger-point/{ruleName}	PATCH	Updates Traffic Feed Trigger Point configuration at SCP for given ruleName.
5gsbi-traffic-feed/trigger-point	/ocscp/scpc-configuration/{version}/5gsbi-traffic-feed/trigger-point/{ruleName}	DELETE	Removes Traffic Feed Trigger Point configurations at SCP for given ruleName.

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Data Model

Request Body

Table 2-374 trafficFeedTriggerPointConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	The rule's name must be in string format.It must have a unique rule name.
serviceName	String	O	The name of the services for which rule is applied: nnrf-nfm, nnrf-disc, nudm-sdm, nudm-uecm, nudm-ueau, nudm-ee, nudm-pp, namf-comm, namf-evts, namf-mt, namf-loc, nsmf-pdusession, nsmf-event-exposure, nausf-auth, nausf-sorprotection, nausf-upuprotection, nnef-pfdmanagement, npcf-am-policy-control, npcf-smpolicycontrol, npcf-policyauthorization, npcf-bdtpolicycontrol, nsmsf-sms, nnssf-nsselection, nnssf-nssaiavailability, nudr-dr, nudr-group-id-map, nlmf-loc, n5g-eir-eic, nbsf-management, nchf-spendinglimitcontrol, nnwdaf-eventssubscription, nnwdaf-analyticsinfonpcf-eventexposure, npcf-ue-policy-control, nchf-convergedcharging, 5g-sbi-notification, nnef-eventexposure, nnef-afsessionwithqos
nfType	String	M	Either 3GPP defined NFType as per TS29.510 custom NFType or *.
allowedtrafficPercentage	Integer	M	0-100% of traffic can be sent to traffic feed.
triggerPoints	Array(TriggerPoint)	M	List of trigger points to be enabled if matches. One or more of following: • RxRequest • TxRequest • RxResponse • TxResponse
messageType	Set(MessageType)	M	The allowed message type is [svc-request-message], [notification-message], or both [notification-message, svc-request-message].

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Response Body

Response body data model varies based on Rest operation status. Details can be found in the subsequent sections.

Table 2-375 Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
array (trafficFeed TriggerPoint config)	M	1	200 OK	List of traffic Feed configuration matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when invalid input are provided.

JSON Format

```
{
  "ruleName": "string",
  "trafficFeedTriggerPointConfigData": {
    "allowedTrafficPercentage": 100,
    "triggerPoints": [
      "RxRequest"
    ],
    "nfType": "string",
    "serviceName": "string",
    "messageType": [
      "notification-message"
    ]
  }
}
```

Resource Definition

GET REST API

Resource to fetch the message-copy-traffic-config details based on the json version.

Resource URI: `/ocscp/scpc-configuration/v1/5gsbi-traffic-feed/trigger-point`

Table 2-376 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
trafficFeedTriggerPointConfig	M	1	200 OK	configuration for Traffic Feed

PUT REST API

Resource to put the message-copy-traffic-config details based on the json version.

Resource URI: `/ocscp/scpc-configuration/v1/5gsbi-traffic-feed/trigger-point/ruleName`

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Successful Response:

```
curl -X 'PUT' \
  'http://<SCP configuration FQDN>:32209/ocscp/scpc-configuration/v1/5gsbi-
traffic-feed/trigger-point/nef_trafficfeed_rule' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
  "ruleName": "nef_trafficfeed_rule",
  "trafficFeedTriggerPointConfigData": {
    "allowedTrafficPercentage": 100,
    "triggerPoints": [
      "RxRequest"
    ],
    "nfType": "nef",
    "serviceName": "nnef-eventexposure",
    "messageType": [
      "notification-message"
    ]
  }
}'
```

Failure response:

```
curl -X 'PUT' \
  'http://localhost:1106/ocscp/scpc-configuration/v1/5gsbi-traffic-feed/
trigger-point/rule5' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
    "ruleName": "rule5",
    "trafficFeedTriggerPointConfigData": {
      "allowedTrafficPercentage": 100,
      "triggerPoints": [
        "RxRequest"
      ],
      "nfType": "UDM",
      "serviceName": "nudm-sdm",
      "messageType": [
        "notification-message",
        "svc-request-message"
      ]
    }
  }'

{
  "title": "Bad Request",
  "status": 400,
  "detail": "Rule for the given combination already exists.",
  "instance": "/ocscp/scpc-configuration/v1/5gsbi-traffic-feed/trigger-point/
rule5",
  "cause": "MANDATORY_IE_MISSING"
}
```


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Table 2-377 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
trafficFeedTriggerPointConfig	M	1	200 OK	configuration for Traffic Feed

PATCH REST API

Resource to add or update the message-copy-traffic-config using the Request Body.

Resource URI: `/ocscp/scpc-configuration/v1/5gsbi-traffic-feed/trigger-point`

Table 2-378 Data Structures Supported by the PATCH Response Body

Name	Data Type	Mandatory (M) or Optional(O)	Cardinality	Description
ruleName	String	M	1	Rule name for which Ingress and Egress Traffic configuration can be modified.
serviceName	String	O	1	Update serviceName for provided ruleName [{ "op": "replace", "path": "/serviceName", "value": "nausf-auth" }]
trafficFeedTriggerPointConfig	Json	O	1	patchDocument need to be send **example**: [{ "op": "replace", "path": "/trafficFeedTriggerPointConfigData/allowedTrafficPercentage", "value": "50" }] [{ "op": "replace", "path": "/trafficFeedTriggerPointConfigData/triggerPoints", "value": ["RxRequest","TxRequest"] }]

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2.37 Congestion Control Configurations

This REST API is used to configure the congestion control configuration rules. The user uses this API to configure congestion control configurations, and the name of this rule is provided in Routing Options at the service level.

Resources

The following table describes the resource name to retrieve, add, update, and remove the congestion control configuration based on the query parameters.

Table 2-379 Resource Name

Resource Name	Resource URI	HTTP Method	Description
congestion-control	ocscp/scpc-configuration/{version}/congestion-control/{ruleName}	GET	Retrieves congestion control configuration rules for a given rulename.
congestion-control	ocscp/scpc-configuration/{version}/congestion-control	GET	Retrieves all congestion control configuration rules.
congestion-control	ocscp/scpc-configuration/{version}/congestion-control/{ruleName}	PUT	Updates the congestion control configuration rule.
congestion-control	ocscp/scpc-configuration/{version}/congestion-control/{ruleName}	DELETE	Deletes the congestion control configuration rule.

Data Model

Request Body

The following table describes the field names of the CongestionControlConfig data type.

Table 2-380 CongestionControlConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
ruleName	String	M	"ruleName": "defaultRule"	Name of the rule to identify the congestion control configuration.
congestionControlConfigData	NFServiceLoadBasedCongestionControl	M	-	NFServiceLoadBasedCongestionControl

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Table 2-381 NFSerAviceLoadBasedCongestionControl

Field Name	Data Type	Mandatory (M) or Optional(O)	Allowed Value	Description
alternateRoutingOnsetThresholdPercent	Integer	M	0-100	This field indicates the threshold percentage for onset alternate routing.
alternateRoutingAbatementThresholdPercent	Integer	M	0-100	This field indicates the threshold percentage for alternate routing abatement.
throttleOnsetThresholdPercent	Integer	M	0-100	This field indicates threshold percentage for onset throttling.
throttleAbatementThresholdPercent	Integer	M	0-100	This field indicates the threshold percentage for throttle abatement.
sbiMsgPriorityDiscardFrom	Integer	M	0-31	This field indicates the priority of the message, after which the message is discarded. For example, if the value is 30, then messages with priority 0-29 are high priority, and other low-priority messages are throttled.
errorProfileConfiguration	ErrorProfile Configuration	M		-

Table 2-382 ErrorProfileConfiguration

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Allowed Value	Description
ErrorCode	Integer	M	-	Valid HTTP status codes like 5xx, 4xx error codes.	Indicates configurable error codes to be sent by SCP to consumer NFs.
errorCause	String	O	-	-	Indicates the error cause that is specific to the occurrence of the problem.
errorTitle	String	O	-	-	Indicates the title of the error.
errorDescription	String	O	-	-	Indicates an explanation specific to the occurrence of the problem.
retryAfter	String	O	-	-	Indicates the retry interval. **Note**: The retryAfter header is applicable only for 429, 503, and 307 errors.
redirectUrl	String	O	-	-	Indicates the absolute URL of the resource to which the message is redirected.

Request/Response Body JSON Format (GET)

Response Body, Example:

```
   {
"ruleName": defaultRule
"congestionControlConfigData": {
      "alternateRoutingOnsetThresholdPercent": 80,
```


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```
        "alternateRoutingAbatementThresholdPercent": 75,
        "throttleOnsetThresholdPercent": 90,
        "throttleAbatementThresholdPercent": 85,
        "sbiMsgPriorityDiscardFrom": 24,
        "errorProfileConfiguration": {
            "errorCode": 500,
            "errorCause": "NF_SERVICE_FAILOVER",
            "errorTitle": "NF service is overloaded/congested",
            "errorDescription": "NF service is overloaded/congested",
            "retryAfter": "5",
            "redirectUrl": ""
        }
    }
 }
```

Request/Response Body JSON Format (PUT)

Request Body, Example:

```
   {
 "ruleName": defaultRule
 "congestionControlConfigData": {
        "alternateRoutingOnsetThresholdPercent": 80,
        "alternateRoutingAbatementThresholdPercent": 75,
        "throttleOnsetThresholdPercent": 90,
        "throttleAbatementThresholdPercent": 85,
        "sbiMsgPriorityDiscardFrom": 24,
        "errorProfileConfiguration": {
            "errorCode": 503,
            "errorCause": "NF_CONGESTION",
            "errorTitle": "NF service is overloaded/congested",
            "errorDescription": "NF service is overloaded/congested",
            "retryAfter": "5",
            "redirectUrl": ""
        }
    }
 }
```

Response body, Example:

```
{
 "ruleName": defaultRule
 "congestionControlConfigData": {
        "alternateRoutingOnsetThresholdPercent": 80,
        "alternateRoutingAbatementThresholdPercent": 75,
        "throttleOnsetThresholdPercent": 90,
        "throttleAbatementThresholdPercent": 85,
        "sbiMsgPriorityDiscardFrom": 24,
        "errorProfileConfiguration": {
            "errorCode": 503,
            "errorCause": "NF_CONGESTION",
            "errorTitle": "NF service is overloaded/congested",
            "errorDescription": "NF service is overloaded/congested",
            "retryAfter": "5",
            "redirectUrl": ""
```


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```
        }
    }
}
```

Resource Definition

GET REST API:

This resource fetches all the congestion control configurations rules.

Resource URI: `/ocscp/scpc-configuration/{version}/congestion-control/`

The following table describes the data structure supported by the GET method on this resource.

Table 2-383 Data structures supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
List<CongestionControlConfig>	M	1	200 OK	The congestion control configuration with a rule name.

Example

```
{
 "ruleName": defaultRule
 "congestionControlConfigData": {
        "alternateRoutingOnsetThresholdPercent": 80,
        "alternateRoutingAbatementThresholdPercent": 75,
        "throttleOnsetThresholdPercent": 90,
        "throttleAbatementThresholdPercent": 85,
        "sbiMsgPriorityDiscardFrom": 24,
        "errorProfileConfiguration": {
            "errorCode": 503,
            "errorCause": "NF_CONGESTION",
            "errorTitle": "NF service is overloaded/congested",
            "errorDescription": "NF service is overloaded/congested",
            "retryAfter": "5",
            "redirectUrl": ""
        }
    }
 }
```

GET REST API:

This resource fetches the congestion control configurations for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/congestion-control/{ruleName}`

The following table describes the URI query parameters supported by the GET method on this resource.

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Table 2-384 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the congestion control rule used to retrieve the respective configurations.

The following table describes the data structure supported by the GET method on this resource.

Table 2-385 Data structures supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
CongestionControlConfig	M	1..N	200 OK	The congestion control configuration with a rule name.
Problem details	M	1	404 NOT Found	Problem details

Curl Example for GET

Successful response

```
curl -v -H "Content-Type: application/json" --request GET  http://
localhost:8081/ocscp/scpc-configuration/v1/congestion-control/defaultrule

HTTP/1.1 200 OK

{
  "ruleName": "defaultRule",
  "congestionControlConfigData": {
    "alternateRoutingOnsetThresholdPercent": 80,
    "alternateRoutingAbatementThresholdPercent": 75,
    "throttleOnsetThresholdPercent": 90,
    "throttleAbatementThresholdPercent": 85,
    "sbiMsgPriorityDiscardFrom": 24,
    "errorProfileConfiguration": {
      "errorCode": 500,
      "errorCause": "NF_SERVICE_FAILOVER",
      "errorTitle": "NF service is overloaded/congested",
      "errorDescription": "NF service is overloaded/congested",
      "retryAfter": "5",
      "redirectUrl": ""
    }
  }
}
```


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Failure case

```
curl -v -H "Content-Type: application/json" --request GET  http://
localhost:8081/ocscp/scpc-configuration/v1/congestion-control/rx

 HTTP/1.1 404 Not Found

{
  "title": "Not Found",
  "status": "404",
  "detail": "Congestion control configuration data not found for provided
ruleName in path parameter(s)",
  "instance": "/ocscp/scpc-configuration/v1/congestion-control/rx",
  "cause": "DATA_NOT_FOUND"
}
```

PUT REST API:

This resource adds or updates the congestion control configurations for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/congestion-control/{ruleName}`

Table 2-386 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the congestion control rule used to add the respective configurations.

Table 2-387 Data structures

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
CongestionControlConfig	M	1	200 OK	CongestionControlConfiguration with the rule name when an existing record is updated.
CongestionControlConfig	M	1	201	CongestionControlConfiguration with the rule name when an existing record is updated.
Problem details	M	1	404 NOT Found	Problem details

Curl Example for PUT

Success response:

```
curl -v -H "Content-Type: application/json" --request PUT -d '{
>   "ruleName": "r2",
>   "congestionControlConfigData": {
>     "alternateRoutingOnsetThresholdPercent": 80,
>     "alternateRoutingAbatementThresholdPercent": 75,
>     "throttleOnsetThresholdPercent": 90,
>     "throttleAbatementThresholdPercent": 85,
```


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```
>     "sbiMsgPriorityDiscardFrom": 24,
>     "errorProfileConfiguration": {
>       "errorCode": 503,
>       "errorCause": "NF_CONGESTION",
>       "errorTitle": "NF service is overloaded/congested",
>       "errorDescription": "NF service is overloaded/congested",
>       "retryAfter": "5",
>       "redirectUrl": ""
>     }
>   }
> }' http://localhost:8081/ocscp/scpc-configuration/v1/congestion-control/r2
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 8081 (#0)
> PUT /ocscp/scpc-configuration/v1/congestion-control/r2 HTTP/1.1
> Host: localhost:8081
> User-Agent: curl/7.61.1
> Accept: */*
> Content-Type: application/json
> Content-Length: 560
>
* upload completely sent off: 560 out of 560 bytes
< HTTP/1.1 201 Created
< Connection: keep-alive
< Transfer-Encoding: chunked
< Content-Type: application/json
< Date: Fri, 18 Aug 2023 10:50:12 GMT
<
* Connection #0 to host localhost left intact

{
    "ruleName": "r2",
    "congestionControlConfigData": {
        "alternateRoutingOnsetThresholdPercent": 80,
        "alternateRoutingAbatementThresholdPercent": 75,
        "throttleOnsetThresholdPercent": 90,
        "throttleAbatementThresholdPercent": 85,
        "sbiMsgPriorityDiscardFrom": 24,
        "errorProfileConfiguration": {
            "errorCode": 503,
            "errorCause": "NF_CONGESTION",
            "errorTitle": "NF service is overloaded/congested",
            "errorDescription": "NF service is overloaded/congested",
            "retryAfter": "5",
            "redirectUrl": ""
        }
    }
}
```

Failure case 1

```
curl -X 'PUT' \
  'http://10.75.226.21:32474/ocscp/scpc-configuration/v1/congestion-
control/r2' \
  -H 'accept: application/json' \
```


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```
  -H 'Content-Type: application/json' \
  -d '{
  "ruleName": "r1",
  "congestionControlConfigData": {
    "alternateRoutingOnsetThresholdPercent": 30,
    "alternateRoutingAbatementThresholdPercent": 20,
    "throttleOnsetThresholdPercent": 50,
    "throttleAbatementThresholdPercent": 60,
    "sbiMsgPriorityDiscardFrom": 20,
    "errorProfileConfiguration": {
      "errorCause": "string",
      "errorTitle": "string",
      "errorDescription": "string",
      "retryAfter": "string",
      "redirectUrl": "string"
    }
  }
}'
HTTP/1.1 400 Bad Request
{
  "title": "Bad Request",
  "status": "400",
  "detail": "Rule name should be same in path parameter and request body.",
  "instance": "/ocscp/scpc-configuration/v1/congestion-control/r1",
  "cause": "INVALID_KEY"
}
```

Failure case 2

```
curl -X 'PUT' \
  'http://10.75.226.21:32474/ocscp/scpc-configuration/v1/congestion-
control/r1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "ruleName": "r1",
  "congestionControlConfigData": {
    "alternateRoutingOnsetThresholdPercent": 30,
    "alternateRoutingAbatementThresholdPercent": 20,
    "throttleOnsetThresholdPercent": 50,
    "throttleAbatementThresholdPercent": 60,
    "sbiMsgPriorityDiscardFrom": 20,
    "errorProfileConfiguration": {
      "errorCause": "string",
      "errorTitle": "string",
      "errorDescription": "string",
      "retryAfter": "string",
      "redirectUrl": "string"
    }
  }
}'
HTTP/1.1 400 Bad Request
{
  "title": "Bad Request",
  "status": "400",
```


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```
  "detail": "Invalid errorCode configured in section
errorProfileConfiguration. Please refer user guide.",
  "instance": "/ocscp/scpc-configuration/v1/congestion-control/r1",
  "cause": "MANDATORY_IE_INCORRECT"
}
```

DELETE REST API:

This resource deletes the congestion control configurations for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/congestion-control/{ruleName}`

Table 2-388 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the congestion control rule that needs to be deleted.

Table 2-389 Data structures supported by the Delete Response Body on this resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
Default	M	1	204 OK	-
ProblemDetails	M	1	400/404	Problem details.

Curl Example for Delete

Successful response

```
curl -v -H "Content-Type: application/json" --request DELETE  http://
localhost:8081/ocscp/scpc-configuration/v1/congestion-control/r2

HTTP/1.1 204 No Content
< Date: Fri, 18 Aug 2023 10:55:57 GMT
<
* Connection #0 to host localhost left intact
```

Failure case

```
curl -v -H "Content-Type: application/json" --request DELETE  http://
localhost:8081/ocscp/scpc-configuration/v1/congestion-control/rx

HTTP/1.1 404 Not Found

{
  "title": "Not Found",
  "status": "404",
  "detail": "Congestion control configuration data Not Found for the given
ruleName in path parameter(s)",
```


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```
  "instance": "/ocscp/scpc-configuration/v1/congestion-control/rx",
  "cause": "DATA_NOT_FOUND"
}
```

2.38 Circuit Breaking Configurations

This REST API is used to configure the circuit-breaking configuration rules. The user will use this API to configure CB configurations, and the name of this rule will be provided in Routing Options at the service level and System Options at the global level for inter-SCP and SEPP.

Resources

The following table describes the resource name to retrieve, add, update, and remove the circuit breaking configuration based on the query parameters.

- Resource URI Structure: `http://<authority>:<port>/ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}`
- Authority: loadbalancer or fqdn
- Port: nodeport(Ip address) or internal port (For fqdn)
- loadbalancerip: 10.75.225.111
- Example : http://10.75.225.111:32456/ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName} or http://ocscp-scpc-configuration:8081/ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}

Table 2-390 Resource Name

Resource Name	Resource URI	HTTP Method	Description
circuit-breaking	ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}	GET	Retrieves the circuit breaking configuration rule.
circuit-breaking	ocscp/scpc-configuration/{version}/circuit-breaking	GET	Retrieves all circuit breaking configuration rules.
circuit-breaking	ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}	PUT	creates a circuit breaking configuration rule if not present; otherwise, it updates the existing one.
circuit-breaking	ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}	DELETE	Deletes the circuit breaking configuration rule.

Data Model

Request Body

The following table describes the field names of the CircuitBreakingConfig data type.

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Table 2-391 CircuitBreakingConfig

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
ruleName	String	M	-	The rule name to identify the circuit breaker configuration.
CircuitBreakingConfig	CircuitBreakingConfig	M	-	Provides `http2MaxRequests` to configure maximum number of requests SCP routes to an NF service instance.

Table 2-392 CircuitBreakingConfigData

Field Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
http2MaxRequests	Integer	M	1000	Maximum number of requests SCP routes to an NF service instance (peer destination) and waiting for their responses before stopping further routing requests to it.

Request/Response Body JSON Format (GET)

Response Body, Example:

```
   {
  "ruleName": "newCBRule",
  "circuitBreakingConfigData": {
    "http2MaxRequests": 1200
  }
}
```

Request/Response Body JSON Format (PUT)

Request Body, Example:

```
   {
  "ruleName": "newCBRule",
  "circuitBreakingConfigData": {
    "http2MaxRequests": 1200
  }
}
```

Response body, Example:

```
{
  "ruleName": "newCBRule",
  "circuitBreakingConfigData": {
    "http2MaxRequests": 1200
```


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```
  }
}
```

Resource Definition

GET REST API:

This resource fetches the circuit breaking configurations for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}`

The following table describes the URI query parameters supported by the GET method on this resource.

Table 2-393 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the circuit breaking rule used to retrieve the respective configurations.

The following table describes the data structure supported by the GET method on this resource.

Table 2-394 Data structures supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
CircuitBreakingConfig	M	1	200 OK	The circuit breaking configuration with a rule name.
ProblemDetails	M	1	404	Problem details

Example

Success response

```
curl -v -H "Content-Type: application/json" --request GET  http://
localhost:8081/ocscp/scpc-configuration/v1/circuit-breaking/defaultRule

HTTP/1.1 200 OK
{
    "ruleName": "defaultRule",
    "circuitBreakingConfigData": {
      "http2MaxRequests": 1000
    }
  }
```


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Failure case

```
curl -v -H "Content-Type: application/json" --request GET  http://
localhost:8081/ocscp/scpc-configuration/v1/circuit-breaking/defaultRule1

HTTP/1.1 404 Not Found

{
  "title": "Not Found",
  "status": "404",
  "detail": "Congestion control configuration data not found for provided
ruleName in path parameter(s)",
  "instance": "/ocscp/scpc-configuration/v1/circuit-breaking/defaultRule1",
  "cause": "DATA_NOT_FOUND"
}
```

GET REST API:

This resource fetches all circuit breaking configuration rules.

Resource URI: `/ocscp/scpc-configuration/{version}/circuit-breaking`

The following table describes the data structure supported by the GET method on this resource.

Table 2-395 Data structures supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
CircuitBreakingConfig	M	1..N	200 OK	The circuit breaking configuration with a rule name.

Example of Congestion Control Configuration for GET

```
Command : curl -X 'GET' \
  'http://10.75.213.193:30066/ocscp/scpc-configuration/v1/circuit-breaking' \
  -H 'accept: application/json'

Response:

[
  {
    "ruleName": "defaultRule",
    "circuitBreakingConfigData": {
      "http2MaxRequests": 1000
    }
  }
]
```

PUT REST API:

This resource adds or updates the circuit breaking configurations for the specified rules.

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Resource URI: `/ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}`

Table 2-396 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the circuit breaking rule using which the respective configurations will be retrieved.

Table 2-397 Data structures

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
CircuitBreakingConfig	M	1	200 OK	This response is generated when an existing record is updated.
CircuitBreakingConfig	M	1	201	This response is generated when a new record is created.
CircuitBreakingConfig	M	1	404	Problem details

Example of Congestion control configuration for PUT

Success response:

```
curl -v -H "Content-Type: application/json" -X PUT http://localhost:8081/
ocscp/scpc-configuration/v1/circuit-breaking/defaultRule -d '{
  "ruleName": "defaultRule",
  "circuitBreakingConfigData": {
    "http2MaxRequests": 1000
  }
}'

HTTP/1.1 200 OK

{"ruleName":"defaultRule","circuitBreakingConfigData":
{"http2MaxRequests":1000}}
```

Failure case 1

```
curl -v -H "Content-Type: application/json" -X PUT http://localhost:8081/
ocscp/scpc-configuration/v1/circuit-breaking/defaultRule1 -d '{
  "ruleName": "defaultRule",
  "circuitBreakingConfigData": {
    "http2MaxRequests": 1000
  }
}'

HTTP/1.1 400 Bad Request

{"title":"Bad Request","status":"400","detail":"Please provide same ruleName
```


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```
in Path Variable and Request Body. Please refer to the User
Guide.","instance":"/ocscp/scpc-configuration/v1/circuit-breaking/
defaultRule1","cause":"MANDATORY_IE_MISSING"}
```

DELETE REST API:

This resource deletes the circuit breaking configurations for the specified rules.

Resource URI: `/ocscp/scpc-configuration/{version}/circuit-breaking/{ruleName}`

Table 2-398 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the circuit breaking rule that needs to be deleted.

Table 2-399 Data structures supported by the Delete Response Body on this resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
Default	M	1	204 OK	-
ProblemDetails	M	1	403/404	Problem details.

Example

Successful response

```
curl -v -H "Content-Type: application/json" -X DELETE  http://localhost:8081/
ocscp/scpc-configuration/v1/circuit-breaking/defaultRuleq
HTTP/1.1 204 No Content
```

Failure case 1

```
curl -v -H "Content-Type: application/json" -X DELETE  http://localhost:8081/
ocscp/scpc-configuration/v1/circuit-breaking/defaultRule
HTTP/1.1 403 Forbidden
{"title":"Forbidden","status":"403","detail":"Default rule cannot be deleted.
Please refer to the User Guide.","instance":"/ocscp/scpc-configuration/v1/
circuit-breaking/defaultRule","cause":"OPERATION_NOT_ALLOWED"}
```

Failure case 2

```
curl -v -H "Content-Type: application/json" -X DELETE  http://localhost:8081/
ocscp/scpc-configuration/v1/circuit-breaking/defaultRuleqq
HTTP/1.1 404 Not Found
{"title":"Not Found","status":"404","detail":"Circuit Breaking Configuration
data not found against given query parameter(s). Please refer to the User
```


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```
Guide.","instance":"/ocscp/scpc-configuration/v1/circuit-breaking/
defaultRule111","cause":"DATA_NOT_FOUND"}
```

2.39 NRF SRV Configuration

This section provides the following NRF SRV Configuration Rest API:

- Resource URIs for the nrfsrvconfig resource type.
- Types of data model.
- URI query parameters supported by GET, PUT, and DELETE methods.

Resources

The following table describes the resource URIs and the corresponding HTTP methods for the nrfsrvconfig resource type.

Table 2-400 nrfsrvconfig Resource Type

Resource Name	Resource URI	HTTP Method	Description
nrfsrvconfig	/ocscp/scpc-configuration/{version}/nrfsrvconfig/{nrfSrvFqdn}	PUT	Creates the new NRF SRV configuration for the given nrfSrvFqdn or updates the existing NRF SRV configuration.
nrfsrvconfig	/ocscp/scpc-configuration/{version}/nrfsrvconfig/{nrfSrvFqdn}	GET	Get the NRF SRV configuration for the given NRF SRV FQDN.
nrfsrvconfig	/ocscp/scpc-configuration/{version}/nrfsrvconfig	GET	Get all the NRF SRV configuration available in the database.
nrfsrvconfig	/ocscp/scpc-configuration/{version}/nrfsrvconfig/{nrfSrvFqdn}	DELETE	Removes the NRF SRV configuration for the given NRF SRV FQDN.

> **Note**
>
> - Use the Configure Alternate NF Group section to refresh the NRF SRV FQDN.
> - Set "spnlist" with NRF SRV in SPN format, and set `refreshAll` to false.

Resource Definition

This section describes GET, PUT, and DELETE resource types supported by NRF SRV configuration.

PUT API

This resource creates the new NRF SRV configuration or updates the existing NRF SRV configuration by taking NRFSRVConfigData as the request body.

Resource URI: /ocscp/scpc-configuration/{version}/nrfsrvconfig/{nrfSrvFqdn}

Request Body

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Table 2-401 Data Structures Supported by the PUT Request Body

Data Type	Description
NRFSRVConfigData	Indicates the data type of the NRF SRV configuration. For more information, see Table 2-405.

Table 2-402 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
NRFSRVConfigData	M	1	200 OK	This response is used when an existing record is updated.
NRFSRVConfigData	M	1	201 CREATED	This response is used when a new entry is created.
ProblemDetails	M	1	400 BAD REQUEST	This response is used when request body validation fails.

The following example is of NRF SRV Configuration REST API for PUT method.

Response:

```
curl -X 'PUT' \
  'http://10.75.226.46:30590/ocscp/scpc-configuration/v1/nrfsrvconfig/
nrf2svc.scpsvc.svc.cluster.local' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "nrfSrvFqdn": "nrf2svc.scpsvc.svc.cluster.local",
  "nrfSrvConfig": {
    "nfSetIdList": [
      "setnrfk2.nrfset.5gc.mnc012.mcc345"
    ],
    "performSubscription": true,
    "performAudit": true,
    "registerScp": true,
    "apiPrefix": "USEast",
    "scheme": "http",
    "versions": [
      {
        "apiVersionInUri": "v1",
        "apiFullVersion": "1.0.0"
      }
    ],
    "serviceNames": [
      "nnrf-nfm",
      "nnrf-disc",
      "nnrf-oauth2"
    ],
   "isInterPlmnFqdn": true
```


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```
}
}'
```

Example of NRF SRV Configuration REST API for PUT Method Bad Request

Use case: A configuration where no entry contains 'v1' in apiVersionInUri.

```
curl -X 'PUT' \
  'http://10.75.226.46:30590/ocscp/scpc-configuration/v1/nrfsrvconfig/
nrf2svc.scpsvc.svc.cluster.local' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
   "nrfSrvConfig":{
      "apiPrefix":"USEast",
      "isInterPlmnFqdn":"false",
      "nfSetIdList":[
         "setnrfl1.nrfset.5gc.mnc012.mcc346"
      ],
      "performAudit":"false",
      "performSubscription":"false",
      "plmnList":[
         {
            "mcc":"410",
            "mnc":"213"
         }
      ],
      "registerScp":"false",
      "scheme":"http",
      "serviceNames":[
         "nnrf-nfm",
         "nnrf-disc",
         "nnrf-oauth2"
      ],
      "versions":[
         {
            "apiFullVersion":"1.0.0",
            "apiVersionInUri":"v2"
         }
      ]
   },
   "nrfSrvFqdn":"nrf1svc.scpsvc.svc.cluster.local"
}
}'

Response
{
   "title":"Bad Request",
   "status":400,
   "detail":"Atleast one entry in the version list must have its apiVersion
set as v1. Please refer to the User Guide.",
   "instance":"/ocscp/scpc-configuration/v1/nrfsrvconfig/
nrf1svc.scpsvc.svc.cluster.local",
   "cause":"MANDATORY_IE_INCORRECT"
}
```


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GET API

This resource fetches the NRF SRV configuration based on the supplied nrfSrvFqdn or fetches all the records.

Resource URI: /ocscp/scpc-configuration/{version}/nrfsrvconfig/{nrfSrvFqdn}

Table 2-403 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
NRFSRVConfigData	M	1..N	200 OK	This response is used when a record is fetched.
ProblemDetails	M	1	404 NOT FOUND	This response is used when no matching entry is found.
ProblemDetails	M	1	400 BAD REQUEST	This response is used when query parameter validation fails.

The following example is of NRF SRV Configuration REST API for GET method.

Response:

```
curl -X 'GET' \
  'http://10.75.226.46:30590/ocscp/scpc-configuration/v1/nrfsrvconfig/
nrf2svc.scpsvc.svc.cluster.local' \
  -H 'accept: application/json'
```

DELETE API

This resource removes the NRF SRV configuration for the given nrfSrvFqdn.

Resource URI: /ocscp/scpc-configuration/{version}/nrfsrvconfig/{nrfSrvFqdn}

Table 2-404 Data Structures Supported by the DELETE Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
None	-	-	204 NO CONTENT	This response is used when the query is successful.
Problem Details	M	1	404 NOT FOUND	This response is used when no matching entry is found.
Problem Details	M	1	400 BAD REQUEST	This response is used when query parameter validation fails.

The following example is of NRF SRV Configuration REST API for DELETE method.

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Response:

```
curl -X 'DELETE' \
  'http://10.75.226.46:30590/ocscp/scpc-configuration/v1/nrfsrvconfig/
nrf2svc.scpsvc.svc.cluster.local' \
  -H 'accept: application/json'
```

Data Model

The following tables describe different data models required for configuring NRF SRV data.

Table 2-405 NRFSRVConfigData

Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
nrfSrvFqdn	String	M	NA	The data type of NRF SRV FQDN for the corresponding NRF SRV configuration.
nrfSrvConfig	NRFSRVConfig	M	NA	This is the NRF SRV configuration data.

Table 2-406 NRFSRVConfig

Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
plmnList	List	O	NA	List of the NRF serving PLMN.
nfSetIdList	List	M	NA	This is the SetId list for this NRF SRV configuration. You can configure multiple nfSetIds, but the NRF profile and rule creation will only take into account the nfSetId from the 0th index. This setId must be unique for each NRF SRV configuration; that is, this setId must not be present in any other NRF SRV configuration.
performSubscription	boolean	O	true	This field allows to decide whether NRF from this NRF SRV should be used for a subscription or not. The possible values are true or false.
performAudit	boolean	O	true	This field allows to decide whether NRF from this NRF SRV should be used for a audit or not. The possible values are true or false.
registerScp	boolean	O	false	This field allows to decide whether to register SCP with the NRF from the NRF Set. The possible values are true or false.
scheme	UriScheme	M	NA	This field is used for the URI Scheme. The supported value is http/https.

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Table 2-406 (Cont.) NRFSRVConfig

Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
versions	array(NFServiceVersion)	M	NA	This field lists the NFServiceVersion. Configuring multiple API versions is permissible, but at least one entry in the version list must have its apiVersionInUri set to "v1." This is because SCP currently utilizes "v1" for its self-generated requests towards NRF.
apiPrefix	String	O	NA	This field is used in the URI while communicating with NRF.
serviceNames	array(ServiceName)	M	"nnrf-nfm","nnrf-disc","nnrf-oauth2"	Indicates the service name of the NRF SRV configuration. The nnrf-nfm and nnrf-disc are mandatory for NRF SRV configurations. The supported value is nnrf-nfm/nnrf-disc/nnrf-oauth2.
isInterPlmnFqdn	boolean	O	false	This field allows you to choose whether or not to map the NRF from this NRF SRV resolution to the InterPlmn Fqdn.

Table 2-407 NFServiceVersion

Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
apiVersionInUri	String	M	NA	The apiVersionInUri is used in the URI while communicating with NRF. The supported value is v1/v2.
apiFullVersion	String	M	NA	The apiFullVersion should be in format x.y.z.

Allowed or Not Allowed API operations

Table 2-408 Different Types of Scenarios

Scenario	Allowed or Not Allowed	Notes
If `performAudit` is true, and the nnrf-nfm service is configured as a service for audit (global helm configuration), user can remove its entry from the NRF SRV configuration.	Not Allowed	nnrf-nfm service is mandatory
If inserting or updating nfSetId with a value that already exists in another nfSetId configuration.	Not Allowed	-

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Table 2-408 (Cont.) Different Types of Scenarios

Scenario	Allowed or Not Allowed	Notes
If `performAudit` is true, and the nnrf-disc service is configured as a service for audit (global helm configuration), user can remove its entry from the NRF SRV configuration.	Not Allowed	nnrf-disc service is mandatory
If `nrfServiceForAudit` is nnrf-disc and supported NRF services should have disc and user can change performAudit to true	Allowed	-
If `nrfServiceForAudit` is nnrf-nfm and supported NRF services should have mgmt and user can change performAudit to true	Allowed	-
If model-D is enabled and nrfSetID (or nrfInstanceId) is present in the NRF_CONFIG table for nnrf-disc, and user can remove the nnrf-disc service from the NRF SRV configuration.	Not Allowed	nnrf-disc service is mandatory
If OAuth2 is enabled and nrfSetID (or nrfInstanceId) is present in the NRF_CONFIG table for nnrf-oauth2, and user can remove the nnrf-oauth2 service from the NRF SRV configuration.	Not Allowed	-
The `registerScp` can be set from false to true when nrfset has mgmt service configured in the supported NRF service list.	Allowed	-
The `performSubscription` can be set from false to true when nrfset has mgmt service configured in the supported NRF service list.	Allowed	-
Configuring the version with the "apiVersionInUri" value as v2 only.	Not Allowed	Configuring multiple API versions is permissible, but at least one entry in the version list must have its apiVersionInUri set to "v1". This is because SCP currently utilizes "v1" for its self-generated requests towards NRF.

> **Note**
>
> Service types nnrf-nfm and nnrf-disc are mandatory for Table 2-406 table configurations. Deletion of nnrf-nfm and nnrf-disc service types from the NRF SRV profile is not supported.

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2.40 NRF FQDN InstanceId Mapping

This section describes REST API configurations required for the mapping the NRF FQDN InstanceId.

Resources

The following table describes the resource URIs and the corresponding HTTP methods for the nrffqdninstanceidmapping resource type.

Table 2-409 nrffqdninstanceidmapping Resource Type

Resource Name	Resource URI	HTTP Method	Description
nrffqdninstanceidmapping	/ocscp/scpc-configuration/{version}/nrffqdninstanceidmapping	GET	Fetches the NRF FQDN and corresponding instanceid mapping details.

Resource Definition

This section describes GET resource types supported by NRF FQDN InstanceId Mapping.

GET API

This resource fetches the NRF FQDN and corresponding instanceid mapping details.

Resource URI: /ocscp/scpc-configuration/{version}/nrffqdninstanceidmapping

Table 2-410 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
NRFFQDNInstanceIdMappingData	M	1..N	200 OK	This response is used when a record is fetched.

The following example is of NRF FQDN InstanceId Mapping REST API for GET method.

Response:

```
curl -X 'GET'
  'http://10.75.226.46:31527/ocscp/scpc-configuration/v1/
nrffqdninstanceidmapping'
  -H 'accept: application/json'

[
  {
    "nrfFqdn": "nrf2svc.scpsvc.svc.cluster.local",
    "data": {
      "v1": {
        "nfInstanceId": "e12013b2-590d-39ab-9aba-dac025f69a65",
        "nrfRegionOrSetId": "setnrfl1.nrfset.5gc.mnc012.mcc345",
        "svcNameSvcNfInstanceId": {
          "nnrf-nfm": "fe137ab7-740a-46ee-aa5c-951806d77b01",
          "nnrf-disc": "fe137ab7-740a-46ee-aa5c-951806d77b02",
```


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```
          "nnrf-oauth2": "fe137ab7-740a-46ee-aa5c-951806d77b03"
        }
      }
    }
  },
  {
    "nrfFqdn": "nrf3svc.scpsvc.svc.cluster.local",
    "data": {
      "v1": {
        "nfInstanceId": "4ca42748-72e2-3dd7-b4a0-4e664b021312",
        "nrfRegionOrSetId": "setnrfl1.nrfset.5gc.mnc012.mcc345",
        "svcNameSvcNfInstanceId": {
          "nnrf-nfm": "fe137ab7-740a-46ee-aa5c-951806d77b01",
          "nnrf-disc": "fe137ab7-740a-46ee-aa5c-951806d77b02",
          "nnrf-oauth2": "fe137ab7-740a-46ee-aa5c-951806d77b03"
        }
      }
    }
  },
  {
    "nrfFqdn": "nrf4svc.scpsvc.svc.cluster.local",
    "data": {
      "v1": {
        "nfInstanceId": "91b26862-b80f-3607-a8ef-43b429cf3b30",
        "nrfRegionOrSetId": "setnrfl1.nrfset.5gc.mnc012.mcc345",
        "svcNameSvcNfInstanceId": {
          "nnrf-nfm": "fe137ab7-740a-46ee-aa5c-951806d77b01",
          "nnrf-disc": "fe137ab7-740a-46ee-aa5c-951806d77b02",
          "nnrf-oauth2": "fe137ab7-740a-46ee-aa5c-951806d77b03"
        }
      }
    }
  },
  {
    "nrfFqdn": "ocnrf-ingressgateway.ocnrf.svc.cluster.local",
    "data": {
      "v1": {
        "nfInstanceId": "85e3cce9-d6f1-3af6-abbb-1419cfb38e1d",
        "nrfRegionOrSetId": "setnrfl1.nrfset.5gc.mnc012.mcc345",
        "svcNameSvcNfInstanceId": {
          "nnrf-nfm": "fe137ab7-740a-46ee-aa5c-951806d77b01",
          "nnrf-disc": "fe137ab7-740a-46ee-aa5c-951806d77b02",
          "nnrf-oauth2": "fe137ab7-740a-46ee-aa5c-951806d77b03"
        }
      }
    }
  }
]
```


Data Model

The following tables describe different data models required for mapping NRF FQDN InstanceId data.

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Table 2-411 NRFFQDNInstanceIdMappingData

Name	Data Type	Mandatory (M) or Optional(O)	Default Value	Description
nrfFqdn	String	M	NA	This is the NRF FQDN received from DNS server.
data	JSON	M	NA	This is the mapping detail of instanceid corresponding to the NRF FQDN.

2.41 Discovery Cache Response Configuration

This REST API is used to retrieve, create, update, and delete NF discovery response cache configurations.

Resources

The following table describes the resource name to retrieve, add, update, and remove NF discovery response cache configurations based on the query parameters.

Table 2-412 Resources

Resource Name	Resource URI	HTTP Method	Description
nfdiscovery-response-cache-cfg	/ocscp/scpc-configuration/{version}/nfdiscovery-response-cache-cfg	GET	Retrieves the NF discovery response cache configuration for the given discoveryCacheCfgName
nfdiscovery-response-cache-cfg	/ocscp/scpc-configuration/{version}/nfdiscovery-response-cache-cfg/{ruleName}	GET	Retrieves NF discovery response cache configuration for given discoveryCacheCfgName
nfdiscovery-response-cache-cfg	/ocscp/scpc-configuration/{version}/nfdiscovery-response-cache-cfg/{ruleName}	PUT	Creates or updates the NF discovery response cache configuration for the given discoveryCacheCfgName
nfdiscovery-response-cache-cfg	/ocscp/scpc-configuration/{version}/nfdiscovery-response-cache-cfg/{ruleName}	DELETE	Deletes the NF discovery response cache configuration for the given discoveryCacheCfgName

Data Model

The following table describes the field names of the DiscoveryCacheCfgWrapper data type:

Table 2-413 DiscoveryCacheCfgWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	Indicates the unique rule name for each delegated discovery configuration that is considered as a primary key.

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Table 2-413 (Cont.) DiscoveryCacheCfgWrapper

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
data	DiscoveryCacheCfgData	M	Specific data for each discovery cache response configuration type. For more information, see DiscoveryCacheCfgData table.

Table 2-414 DiscoveryCacheCfgData

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
targetNfType	String	M	This is the NF type of producer for which delegated discovery is being made. The allowed values for this field are: • * : This value denotes all the valid NF types. or • a valid NF type that SCP supports.
serviceNames	array(ServiceName)	O	This is the list of service names supported by producer NF for which delegated discovery is being made. The allowed values for this field are: • * : This value denotes all the service names for that target NF type. or • a valid NF service that a NF type supports.
excludeDiscoveryQueryParams	array(ExcludeQueryInfo)	M	This is a list of ExcludeQueryInfo objects. ExcludeQueryInfo has one field called queryHeader. • The value of this query header is one of the query parameters that is forwarded along with the discovery request to NRF. • If multiple query parameters are configured, the response will be cached if any one of the query parameters is matched. • Maximum size of this list is 20. For more information, see ExcludeQueryInfo table.

Note

For more information about valid NF types and services supported by SCP, see the "Supported NF Types" chapter in the *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*.

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Table 2-415 ExcludeQueryInfo

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
queryHeader	String	M	It is the query parameters that are forwarded along with the discovery request to NRF, for which responses will not be cached. The allowed values for this field are: • None: This value denotes that caching is done for all the discovery responses. • *: This value denotes that caching will not be done for all the discovery responses. • SubscriberIds: An UE ID-related NF discovery query parameters. • Supported Query Parameters: The query parameters that is forwarded along with the discovery request to NRF. For more information, see "Supported Query Parameters" chapter in the *Oracle Communications Cloud Native Core, Service Communication Proxy User Guide*.

Default Rules for this API

Following are the default rules configured automatically after a fresh SCP deployment takes place:

- **defaultNFTypeDiscovery:** This rule is applicable to any Model D request where discovery is happening without service names (in these requests, the 3gpp-sbi-discovery-service-names header is not present) and no other custom rule match is found. For this rule, caching will not happen for the list of query headers mentioned in the ExcludeQueryInfo.
- **defaultNFServiceDiscovery**: This rule is applicable to a Model D request where the request 3gpp-sbi-discovery-service-names header is also present in the incoming request and no other custom rule match is found. For this rule, caching will not happen for the list of query headers mentioned in the ExcludeQueryInfo.
  For both of the above rules, excludeDiscoveryQueryParams has the following values:
  - In case of install: [{"excludeQueryInfo":{"queryHeader":"SubscriberIds"}}] indicates that the caching of responses will be done for all the query headers except the SubscriberIds (refer to SubscriberIds)
  - In case of upgrade: [{"excludeQueryInfo":{"queryHeader":"None"}}] indicates that the caching of responses will be done for all the query headers so as to be backward compatible with older releases.

> **Note**
>
> By default, users can configure up to 100 rules using this API.

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Table 2-416 Default Rule Names Configuration

ruleName	targetNfType	serviceNames	excludeDiscoveryQueryParams
defaultNFTypeDiscovery	*	absent	[{"excludeQueryInfo":{"queryHeader":"SubscriberIds"}}]
defaultNFServiceDiscovery	*	*	[{"excludeQueryInfo":{"queryHeader":"SubscriberIds"}}]

The following default rules are configured automatically during the upgrade:

Table 2-417 Default Rule Name Configuration

ruleName	targetNfType	serviceNames	excludeDiscoveryQueryParams
defaultNFTypeDiscovery	*	absent	[{"excludeQueryInfo":{"queryHeader":"None"}}]
defaultNFServiceDiscovery	*	*	[{"excludeQueryInfo":{"queryHeader":"None"}}]

The string SubscriberIds is a custom string, which is a group of 8 query parameters. SubscriberIds are UE ID-related NF discovery query parameters.

The following table lists the eight subscriber IDs covered by the keyword "SubscriberIds":

Table 2-418 SubscriberIds

SubscriberIds	Description
supi	If included, this Information Element (IE) shall contain the SUPI of the requester UE to search for an appropriate NF. SUPI may be included if the target NF type is "PCF," "CHF," "AUSF," "UDM," or "UDR.".
ue-ipv4-address	The IPv4 address of the UE for which a BSF or P-CSCF needs to be discovered.
ip-domain	The IPv4 address domain of the UE for which a BSF needs to be discovered.
ue-ipv6-prefix	The IPv6 prefix of the UE for which a BSF or P-CSCF needs to be discovered.
gpsi	If included, this IE shall contain the GPSI of the requester UE to search for an appropriate NF. GPSI may be included if the target NF type is "CHF," "PCF," "UDM," or "UDR.".
external-group-identity	If included, this IE shall contain the external group identifier of the requester UE to search for an appropriate NF. This may be included if the target NF type is "UDM" or "UDR".
routing-indicator	Routing indicator information that allows to route network signaling with SUCI (see 3GPP 23.003 [12]) to an AUSF and UDM instance capable of serving the subscriber. May be included if the target NF type is "AUSF" or "UDM.". Pattern: "^[0-9]{1,4}$"
msisdn	If included, this IE shall contain the external group identifier of the requester UE to search for an appropriate NF. This may be included if the target NF type is "UDM" or "UDR".

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Resource Definition

GET REST API:

The resource fetches the discovery response cache configuration (discoveryCacheCfgWrapper) based on the query parameters. If no query parameter is given, all the data is returned.

Resource URI for GET All: `ocscp/scpc-configuration/v1/nfdiscovery-response-cache-cfg`

Resource URI for GET: `ocscp/scpc-configuration/v1/nfdiscovery-response-cache-cfg/{ruleName}`

The following table describes the URI query parameters supported by the GET method on this resource.

Table 2-419 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	• If this query parameter is present, then it will fetch the record for that rule name. • If this query parameter is not present, then it will fetch all the records present in the database.

The following table describes the data structures supported by the GET Response Body on this resource.

Table 2-420 Data Structures Supported by the GET Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response Codes	Description
array(discoveryCacheCfgWrapper)	M	1	200 OK	List of discovery response cache configurations (discoveryCacheCfgWrapper) matching criteria.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or query parameter is provided.
ProblemDetails	M	1	404 Not Found	Returns when no record is found for the given query.
ProblemDetails	M	1	405 Method Not Allowed	Returns when an incorrect method or the server is configured to disallow the said method.

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Examples

Successful response


```
[
{
    "ruleName": "defaultNFServiceDiscovery",
    "data": {
      "targetNfType": "*",
      "serviceNames": [
        "*"
      ],
      "excludeDiscoveryQueryParams": [
        {
          "excludeQueryInfo": {
            "queryHeader": "SubscriberIds"
          }
        }
      ]
    },
    "createdTimestamp": "2024-01-24 14:50:56.0",
    "updatedTimestamp": "2024-01-24 14:50:56.0"
  },
  {
    "ruleName": "defaultNFTypeDiscovery",
    "data": {
      "targetNfType": "*",
      "excludeDiscoveryQueryParams": [
        {
          "excludeQueryInfo": {
            "queryHeader": "SubscriberIds"
          }
        }
      ]
    },
    "createdTimestamp": "2024-01-24 14:50:56.0",
    "updatedTimestamp": "2024-01-24 14:50:56.0"
  }
]
```


Failure Case 1: 400 Bad Request

```
Request(Input given as v5 wrong version):
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v5/
nfdiscovery-response-cache-cfg/rule1' -H 'accept: application/json'

Response:
connection: keep-alive
 content-length: 0
 date: Fri,02 Feb 2024 09:43:00 GMT

400 Error: Bad Request
```


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Failure Case 2: 404 Not Found

```
Request:
curl -X 'GET' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
nfdiscovery-response-cache-cfg/pqr' -H 'accept: application/json'

Response:
{
  "title": "Not Found",
  "status": "404",
  "detail": "Discovery Cache Configuration data not found against given query
parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfdiscovery-response-cache-cfg/
pqr",
  "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Failure Case 3: 405 Method Not Allowed

```
HttpStatus : 405 - This can be seen through curl command when instead of GET
we are requesting for any other method in this example POST.

Request:
curl -X 'POST' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
nfdiscovery-response-cache-cfg/rule1' -H 'accept: application/json'

Response:
{"timestamp":"2024-02-02T11:08:01.059+00:00","status":405,"error":"Method Not
Allowed","path":"/ocscp/scpc-configuration/v5/nfdiscovery-response-cache-cfg/
rule1"}
```

PUT REST API:

This resource adds one discovery response cache configuration (discoveryCacheCfgWrapper) using the Request Body.

Resource URI: `ocscp/scpc-configuration/{version}/nfdiscovery-response-cache-cfg/{ruleName}`

Table 2-421 URI query parameters

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	M	The unique string that works as an ID.
data	DiscoveryCacheCfgData	M	The specific data for the discovery response configuration type.

The following table describes the data structures supported by the PUT Response Body on this resource.

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Table 2-422 Data Structures Supported by the PUT Response Body

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
array(discoveryCacheCfgWrapper)	M	1	201 OK	If a new record in the table is created.
array(discoveryCacheCfgWrapper)	M	1	200 OK	If an existing record in the table is updated.
ProblemDetails	M	1	400 BAD REQUEST	Returns problem details.
ProblemDetails	M	1	405 Method Not Allowed	Returns when an incorrect method or the server is configured to disallow the said method.

Examples

Successful response

```
HttpStatus : 400
Request:
curl -X 'PUT' \
  'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nfdiscovery-response-
cache-cfg/Rule1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d ' {
    "ruleName": "Rule1",
    "data": {
      "targetNfType": "UDRR",
      "excludeDiscoveryQueryParams": [
        {
          "excludeQueryInfo": {
            "queryHeader": "SubscriberIds"
          }
        }
      ]
    }
}'

Response:
{
  "title": "Bad Request",
  "status": "400",
  "detail": "TargetNfType is invalid, Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfdiscovery-response-cache-cfg/
RULE5",
  "cause": "INVALID_REQUEST_BODY"
}


Reuest:
curl -X 'PUT' \
  'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nfdiscovery-response-
cache-cfg/newRule' \
```


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```
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d ' {
    "ruleName": "newRule",
    "data": {
      "targetNfType": "AMF",
      "excludeDiscoveryQueryParams": [
        {
          "excludeQueryInfo": {
            "queryHeader": "SubscriberIds"
          }
        }
      ]
    }
}'

Response:
HttpStatus : 201
{
  "ruleName": "newRule",
  "data": {
    "targetNfType": "AMF",
    "excludeDiscoveryQueryParams": [
      {
        "excludeQueryInfo": {
          "queryHeader": "SubscriberIds"
        }
      }
    ]
  }
}

Request:
curl -X 'PUT' \
  'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nfdiscovery-response-
cache-cfg/newRule' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d ' {
    "ruleName": "newRule",
    "data": {
      "targetNfType": "AMF",
      "excludeDiscoveryQueryParams": [
        {
          "excludeQueryInfo": {
            "queryHeader": "supi"
          }
        }
      ]
    }
}'

Response:
HttpStatus : 200
{
  "ruleName": "newRule",
```


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```
  "data": {
    "targetNfType": "AMF",
    "excludeDiscoveryQueryParams": [
      {
        "excludeQueryInfo": {
          "queryHeader": "supi"
        }
      }
    ]
  }
}

HttpStatus : 405 - This can be seen through curl command when instead of PUT
we are requesting for any other method in this example POST.

Request:
curl -X 'POST' \
>   'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/nfdiscovery-
response-cache-cfg/Rule1' \
>   -H 'accept: application/json' \
>   -H 'Content-Type: application/json' \
>   -d ' {
>     "ruleName": "Rule1",
>     "data": {
>       "targetNfType": "UDR",
>       "excludeDiscoveryQueryParams": [
>         {
>           "excludeQueryInfo": {
>             "queryHeader": "SubscriberIds"
>           }
>         }
>       ]
>     }
> }'

Response:
{"timestamp":"2024-02-02T10:10:19.204+00:00","status":405,"error":"Method Not
Allowed","path":"/ocscp/scpc-configuration/v1/nfdiscovery-response-cache-cfg/
Rule1"}
```

DELETE REST API:

This resource deletes one Discovery Response Cache configuration (discoveryCacheCfgWrapper) based on query parameters.

Resource URI: `ocscp/scpc-configuration/{version}/nfdiscovery-response-cache-cfg/{ruleName}`

Table 2-423 URI query parameters supported by the DELETE method on this resource

Field Name	Data Type	Mandatory (M) or Optional(O)	Description
ruleName	String	O	The name of the rule name configuration which needs to be deleted.

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Table 2-424 Data structures supported by the Delete Response Body on this resource

Data Type	Mandatory (M) or Optional(O)	Cardinality	Response codes	Description
None	M	1	200 OK	Returns the successful response. Only response code is returned.
ProblemDetails	M	1	404 NOT FOUND	Returns when no matching entry is found.
ProblemDetails	M	1	400 BAD REQUEST	Returns when an invalid combination or query parameter is provided.
ProblemDetails	M	1	405 Method Not Allowed	Returns when an incorrect method or the server is configured to disallow the said method.

Examples

Successful response:

```
Request : curl -X 'DELETE' 'http://10.75.213.61:32586/ocscp/scpc-
configuration/v1/nfdiscovery-response-cache-cfg/Rule1' -H 'accept:
application/json'

Response: 204 OK
```

Failure response: 404 NOT FOUND

```
Request:
curl -X 'DELETE' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
nfdiscovery-response-cache-cfg/pqr' -H 'accept: application/json'

Response:
{
  "title": "Not Found",
  "status": "404",
  "detail": "Discovery Cache Configuration data not found against given query
parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfdiscovery-response-cache-cfg/
pqr",
  "cause": "DATA_NOT_FOUND"
}

404 Error: Not Found
```

Failure response: 400 Bad Request

```
Request(Input given as wrong version v5):
curl -X 'DELETE' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v5/
nfdiscovery-response-cache-cfg/pqr' -H 'accept: application/json'

Response:
connection: keep-alive
 content-length: 0
 date: Fri,02 Feb 2024 09:43:00 GMT
```


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```
400 Error: Bad Request
```

Failure response: 405 Method Not Allowed

```
HttpStatus : 405 - This can be seen through curl command when instead of
DELETE we are requesting for any other method in this example POST.

Request:
curl -X 'POST' 'http://10.75.213.61:32586/ocscp/scpc-configuration/v1/
nfdiscovery-response-cache-cfg/Rule4' -H 'accept: application/json'

Response:
{"timestamp":"2024-02-02T11:13:13.951+00:00","status":405,"error":"Method Not
Allowed","path":"/ocscp/scpc-configuration/v5/nfdiscovery-response-cache-cfg/
Rule4"}
```

2.42 Configuring TLS Version and Ciphers

This section provides the following TLS Version and Ciphers configuration Rest API:

- Resource URIs for the tls-config resource type.
- Types of data model.
- URI query parameters supported by GET, PUT, and DELETE methods.

Resources

The following table describes the resource URIs and corresponding HTTP methods for the tls-config resource type.

Table 2-425 tls-config Resource Type

Resource name	Resource URI	HTTP Method	Description
tls-config	/ocscp/scpc-configuration/{version}/tls-config	GET	Retrieves the TLS ciphers and versions for all interfaces.
tls-config	/ocscp/scpc-configuration/{version}/tls-config/{interfaceName}	GET	Retrieves the TLS ciphers and version for a given interface.
tls-config	/ocscp/scpc-configuration/{version}/tls-config/{interfaceName}	PUT	• Create new TLS cipher configurations for the given interface if the records do not already exist. • Update existing TLS cipher configurations if a record for the interface is found.

Resource Definition

This section describes GET, PUT, and DELETE resource types supported by TLS Ciphers configuration.

GET ALL API

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This resource fetches all the TLS Ciphers configuration.

Resource URI: /ocscp/scpc-configuration/{version}/tls-config

Table 2-426 Data Structures Supported by the GET Request Body

Data Type	Mandatory(M)/ Optional(O)	Cardinality	Response Codes	Description
TLSConfigurationWrapper	M	1	200 OK	Indicates that all TLSConfigurationWrapper objects were successfully fetched.

The following example is of TLS Configuration REST API for GET method.

Request:

```
curl -X 'GET' 'http://10.75.225.77:32000/ocscp/scpc-configuration/v1/tls-config' -H 'accept: application/json'
```

Response:

```
[
  {
    "interfaceName": "sbiIngressCiphers",
    "tlsCiphersConfigData": {
      "tlsVersion": "TLSv1.3",
      "terminateExistingConn": false,
      "tls13Ciphers": [
        "TLS_CHACHA20_POLY1305_SHA256",
        "TLS_AES_256_GCM_SHA384",
        "TLS_AES_128_GCM_SHA256"
      ]
    }
  }
]
```

GET ALL API

This resource fetches the TLS Ciphers and version configuration.

Resource URI: /ocscp/scpc-configuration/{version}/tls-config/{interfaceName}

Table 2-427 Data Structures Supported by the GET Request Body

Data Type	Mandatory(M)/ Optional(O)	Cardinality	Response Codes	Description
TLSConfigurationWrapper	M	1	200 OK	Indicates the successful fetch of TLSConfigurationWrapper configurations.
ProblemDetails	M	1	400	Indicates that the request failed because the given interface name is not present.

The following example is of TLS Configuration REST API for GET method.

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Successful sample of GET API

```
curl -X 'GET' 'http://10.75.225.77:32000/ocscp/scpc-configuration/v1/tls-
config/sbiEgress' -H 'accept: application/json'
{
  "interfaceName": "sbiEgress",
  "tlsConfigData": {
    "tlsVersion": "TLSv1.2",
    "terminateExistingConn": false,
    "tls12Ciphers": [
      "TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384",
      "TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384",
      "TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256",
      "TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256",
      "TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256",
      "TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305_SHA256"
    ]
  }
}
```

Failure sample of GET API

```
curl -X 'GET' 'http://10.75.225.77:32000/ocscp/scpc-configuration/v1/tls-
config/sbiEgress1' -H 'accept: application/json'
{
  "title": "Bad Request",
  "status": 400,
  "detail": "Invalid Tls Interface Name, Allowed interfaceName names are
sbiIngress, sbiEgress, sbiTrafficFeed",
  "instance": "/ocscp/scpc-configuration/v1/tls-config/sbiEgress1",
  "cause": "INVALID_QUERY_PARAM"
}
```

PUT API

This resource creates new TLS cipher configurations for the specified interface.

Resource URI: /ocscp/scpc-configuration/{version}/tls-config/{interfaceName}

Table 2-428 Data Structures Supported by the PUT Request Body

Path Params	Data Type	Mandatory(M)/Optional(O)	Description
interfaceName	String	M	Retrieves configurations for the specified interfaceName.

Table 2-429 Data Structures Supported by the PUT Request Body

Data Type	Mandatory(M)/ Optional(O)	Cardinality	Description
TLSConfigurationWrapper	M	1	Indicates that a TLSConfigurationWrapper is to be added or updated.

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Table 2-430 Data Structures Supported by the PUT Request Body

Data Type	Mandatory(M)/ Optional(O)	Cardinality	Response Codes	Description
TLSConfigurationWrapper	M	1	200	Indicates that the nfServiceConfig configurations were successfully updated.
TLSConfigurationWrapper	M	1	201	Indicates that the nfServiceConfig configurations were successfully created.
Problem Details	M	1	400	Indicates that the request failed due to one of the following reasons: • An invalid TLS version is configured. • Invalid ciphers are configured. • An invalid interface name is configured.

The following example is of TLS Configuration REST API for PUT method.

Successful sample of GET API

```
curl -X 'PUT' \
'http://10.75.225.77:32000/ocscp/scpc-configuration/v1/tls-config/
sbiIngressCiphers' \
-H 'accept: */*' \
-H 'Content-Type: application/json' \
-d '{
"interfaceName": "sbiIngressCiphers",
"tlsCiphersConfigData": {
"tlsVersion": "TLSv1.3",
"terminateExistingConn": false,
"tls13Ciphers": [
"TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_256_GCM_SHA384",
"TLS_AES_128_GCM_SHA256"
]
}
}'
{
  "interfaceName": "sbiIngressCiphers",
  "tlsCiphersConfigData": {
    "tlsVersion": "TLSv1.3",
    "terminateExistingConn": false,
    "tls13Ciphers": [
      "TLS_CHACHA20_POLY1305_SHA256",
      "TLS_AES_256_GCM_SHA384",
      "TLS_AES_128_GCM_SHA256"
    ]
  }
}
```

Failure sample of PUT API

Request

```
curl -X 'PUT' \
  'http://10.75.225.77:30250/ocscp/scpc-configuration/v1/tls-config/
sbiIngress' \
```


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```
-H 'accept: */*' \
-H 'Content-Type: application/json' \
-d '{
  "interfaceName": "sbiIngress",
  "tlsConfigData": {
    "tlsVersion": "TLSv1.3,TLSv1.4",
    "terminateExistingConn": true,
    "tls12Ciphers": [
      "TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384",
      "TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384",
      "TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256",
      "TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256",
      "TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256",
      "TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305_SHA256"
    ],
    "tls13Ciphers": [
      "TLS_AES_128_GCM_SHA256",
      "TLS_AES_256_GCM_SHA384",
      "TLS_CHACHA20_POLY1305_SHA256"
    ]
  }
}
```

Response

```
{
  "title": "Bad Request",
  "status": 400,
  "detail": "Invalid TLS version configured, please refer user guide.",
  "instance": "/ocscp/scpc-configuration/v1/tls-config/sbiIngress",
  "cause": "INVALID_REQUEST_BODY"
}
```

Data Model

The following table lists the data model for request or response.

Table 2-431 TLSConfigurationWrapper Details

Parameter Name	Data Type	Mandatory (M) / Optional (O)	Default Values	Value Range	Description and Validation
interfaceName	String	M	NA	Only the configured interfaces with non-null values are allowed. These interfaces are: • sbiIngress • sbiEgress • sbiTrafficFeed	Indicates the interface that requires updating with the TLS version and ciphers. **Validation** • Non null values. • Only configured TLS versions are allowed

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Table 2-431 (Cont.) TLSConfigurationWrapper Details

Parameter Name	Data Type	Mandatory (M) / Optional (O)	Default Values	Value Range	Description and Validation
tlsVersion	String	M	NA	The following are the allowed values: • TLS 1.3 • TLS 1.2 • TLS 1.3,TLS 1.2 **Note**: When providing both versions, ensure they are separated by "," with no space following the ",".	Specifies the TLS version that should be configured.
terminateExistingConn	Boolean	M	• sbiIngress: false • sbiEgress: true • sbiTrafficFeed: true	true or false • Allowed Values: – **sbiIngress**: false – **sbiEgress**: true – **sbiTrafficFeed**: true or false	Specifies whether to keep the existing connections or not. **true**: Indicates that the existing connection will be terminated, and new requests will be handled on the new connection. **false**: Indicates that the existing connection will remain unchanged, and only new connections will use the updated TLS configuration.
tls12Ciphers	List<String>	C	NA	• TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 • TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 • TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256 • TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 • TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 • TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305_SHA256	Specifies the TLS 1.2 ciphers to be configured. **Validation** • Non null values based on TLS version. • Only configured Ciphers are allowed.
tls13Ciphers	List<String>	C	NA	• TLS_AES_128_GCM_SHA256 • TLS_AES_256_GCM_SHA384 • TLS_CHACHA20_POLY1305_SHA256	Specifies the TLS 1.3 ciphers to be configured. **Validation** • Non null values based on TLS version. • Only configured Ciphers are allowed

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The following sample request illustrates how to configure TLS settings for secure communication:

```
{
  "interfaceName": "sbiIngressCiphers",
  "tlsCiphersConfigData": {
    "tlsVersion": "TLSv1.3, TLSv1.2",
    "terminateExistingConn": false,
    "tls12Ciphers": [
      "TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384",
      "TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384",
      "TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256"
    ],
    "tls13Ciphers": [
      "TLS_AES_128_GCM_SHA256",
      "TLS_AES_256_GCM_SHA384",
      "TLS_CHACHA20_POLY1305_SHA256"
    ]
  }
}
```

2.43 Configuring NF Profile Level Attribute

This section describes the `nfProfile-level-attribute-config` REST API parameters required to configure NF profile level attributes that may be unavailable in a registered NF profile. You can configure NF profile level attributes based on NF types or combinations of NF types and NF instances. This API refers to a configured instance of NF profile level attribute configuration data REST API to obtain specific NF profile level attributes.

Resources

The following table describes the resource name to retrieve, add, or update nfProfile-level-attribute-config configuration data:

Table 2-432 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
nfProfile-level-attribute-config	ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config	GET	Retrieves all existing NF profile level attribute configuration.
nfProfile-level-attribute-config	ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config/{configName}	GET	Retrieves NF profile level attribute configuration for a config name.
nfProfile-level-attribute-config	/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config/{configName}	PUT	• Creates a new NF profile level attribute configuration. • Updates an existing NF profile level attribute configuration record.
nfProfile-level-attribute-config	/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config/{configName}	DELETE	Removes an existing NF profile level attribute configuration.

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Resource Definition

GET ALL

This resource fetches all the NF profile level attribute configuration.

Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config`

The following table describes data structures supported by the GET response body on this resource:

Table 2-433 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigWrapper objects are fetched.

The following table describes data structures supported by the GET response body on these resources:

Table 2-434 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigWrapper configurations are fetched.

Sample GET API

```
Request:
curl -X 'GET' \
  'http://10.75.225.77:31811/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config' \
  -H 'accept: application/json'



Response:
[
  {
    "configName": "defaultNfProfileLevelAttrConfig",
    "nfProfileLevelAttrConfig": {
      "nfType": "*",
      "nfInstanceIdsList": [
        "*"
      ],
      "nfProfileLevelAttrConfigDataName":
```


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```
"defaultNfProfileLevelAttrConfigData"
    },
    "createdTimestamp": "2025-01-09 05:24:11.0",
    "updatedTimestamp": "2025-01-09 05:24:11.0"
  }
]
```

GET

This resource fetches NF profile level attribute configuration.

Resource URI: `ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config/{configName}`

The following table describes data structures supported by the GET response body on this resource:

Table 2-435 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigWrapper objects are fetched.

The following table describes data structures supported by the GET response body on these resources:

Table 2-436 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigWrapper configurations are fetched.
`ProblemDetails`	M	1	404	Retrieves records based on non-existing configName.

Sample of a Successful GET API

```
Request:
curl -X 'GET' \
  'http://10.75.225.211:32001/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config/defaultNfProfileLevelAttrConfig' \
  -H 'accept: application/json'



Response:
{
```


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```
  "configName": "defaultNfProfileLevelAttrConfig",
  "nfProfileLevelAttrConfig": {
    "nfType": "*",
    "nfInstanceIdsList": [
      "*"
    ],
    "nfProfileLevelAttrConfigDataName": "defaultNfProfileLevelAttrConfigData"
  },
  "createdTimestamp": "2025-04-11 14:41:21",
  "updatedTimestamp": "2025-04-14 14:48:12"
}
```


Sample of an Error GET API

```
Request:
curl -X 'GET' \
  'http://10.75.225.77:31811/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config/test123' \
  -H 'accept: application/json'



Response:
{
  "title": "Not Found",
  "status": 404,
  "detail": "Nf Profile Level Attribute Configuration not found against given
query parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config/
test123",
  "cause": "DATA_NOT_FOUND"
}
```

PUT

This resource configures NF profile level attribute configuration.

Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config/{configName}`

The following table describes data structures supported by the PUT request body on this resource:

Table 2-437 Path Parameters

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configurations of configName.

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Table 2-438 NfProfileLevelAttrConfigWrapper

Data Type	Mandatory (M) or Optional (O)	Cardinality	Description
NfProfileLevelAttrConfigWrapper	M	1	Adds or updates NfProfileLevelAttrConfigWrapper.

The following table describes data structures supported by the PUT response body on this resource:

Table 2-439 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfProfileLevelAttrConfigWrapper	M	1	200	Indicates successful update of NF profile level attribute configurations.
NfProfileLevelAttrConfigWrapper	M	1	201	Indicates successful creation of NF profile level attribute configurations.
ProblemDetails	M	1	400	Scenarios: • Attempts to insert or update records when configName does not match in the query parameter and request body. • Attempts to insert or update records with special characters in nfInstanceIdList. • Attempts to insert or update records with special characters in configName. • Attempts to insert a new record when DB tables reach their maximum limit. • Attempts to insert or update records when the nfInstanceId list reaches its maximum limit. • Attempts to insert or update records with exact existing (nfType and instanceidList) configuration. • Attempts to insert or update records with an invalid nfType. • Attempts to insert or update records with a non-existing nfProfileLevelAttrConfigDataName value.

Sample of a Successful PUT API

```
Request:
curl -X 'PUT' \
  'http://10.75.225.77:32094/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config/test-config2' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
```


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```
  "configName": "test-config2",
  "nfProfileLevelAttrConfig": {
    "nfType": "PCF",
    "nfInstanceIdsList": [
      "231-sfds-2e234"
    ],
    "nfProfileLevelAttrConfigDataName": "test"
  }
}'
```

```
Response:
{
  "configName": "test-config2",
  "nfProfileLevelAttrConfig": {
    "nfType": "PCF",
    "nfInstanceIdsList": [
      "231-sfds-2e234"
    ],
    "nfProfileLevelAttrConfigDataName": "test"
  },
  "createdTimestamp": "Mon Jan 13 14:26:59 UTC 2025",
  "updatedTimestamp": "Mon Jan 13 14:26:59 UTC 2025"
}
```

Sample of an Error PUT API

```
Request:
curl -X 'PUT' \
  'http://10.75.225.77:32094/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config/test-config2' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "configName": "test-config21",
  "nfProfileLevelAttrConfig": {
    "nfType": "PCF",
    "nfInstanceIdsList": [
      "231-sfds-2e234"
    ],
    "nfProfileLevelAttrConfigDataName": "test"
  }
}'
```

```
Response:
{
  "title": "Bad Request",
  "status": 400,
  "detail": "Config Name mismatch in Query params and Request body params,
Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config/
```


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```
test-config2",
  "cause": "MANDATORY_QUERY_PARAM_INCORRECT"
}
```

DELETE

This resource removes NF profile level attribute configuration for a given configName.

Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config/{configName}`

The following table describes data structures supported by the PUT request body on this resource:

Table 2-440 Path Parameters

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Fetches configurations of configName.

The following table describes data structures supported by the DELETE response body on this resource:

Table 2-441 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
None	-	-	204	Indicates successful removal of NF profile level attribute configuration.
ProblemDetails	M	1	400	Scenarios: • Attempts to remove the default configuration. • Attempts to remove a non-existing configuration.

Sample of a Successful DELETE API

```
Request:
curl -X 'DELETE' \
  'http://10.75.225.211:32449/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config/testData' \
  -H 'accept: application/json'


Response:
{}

Successfully deleted Nf Profile Config Set Data
```


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Sample for an Error DELETE API

```
Request:
curl -X 'DELETE' \
  'http://10.75.225.211:32449/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config/testDataaa' \
  -H 'accept: application/json'



Response:
{
  "title": "Not Found",
  "status": 404,
  "detail": "Nf Profile Level Attribute Configuration not found against given
query parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfProfile-config-set-data/
testDataaa",
  "cause": "DATA_NOT_FOUND"
}
```

Data Model

The following table describes data model for request or response:

Table 2-442 NfProfileConfigSetDataWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Description
configName	String	M	defaultNfProfileLevelAttrConfig	Indicates unique configuration name to configure the NF profile level attribute configuration. The allowed values must be alphanumeric with hyphen and underscore special characters.
nfType	String	M	*	Describes NfType to which this configuration is applicable. * indicates all valid NF types.
nfinstanceidList	Array<String>	O	*	Indicates configuration list of nfInstance IDs separated by comma. When nfInstaceId is provided, it is used with nfType to extract the missing profile level data to be used while processing NF profiles for creating rules. When nfInstanceId is not provided, it is automatically set to '*'. Then, this configuration is applicable for any NF instance of a given NfType. The allowed values must be alphanumeric with hyphen and underscore special characters. * indicates all valid NF instance IDs.

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Table 2-442 (Cont.) NfProfileConfigSetDataWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Description
nfProfileLevelAttrConfigDataName	String	O	defaultNfProfileLevelAttrConfigData	Indicates an NF profile level attribute configuration data item that is already configured. When SCP processes NF profiles, relevant NF profile level attribute configuration data items are selected based on nfType or nfInstanceID combinations, and they are used for creating default rules. Then, those default rules will be used for routing and alternate routing of notification requests when the service name is unknown.

2.44 Configuring NF Profile Level Attribute Configuration Data

This section describes the `nfProfile-level-attribute-config-data` REST API parameters required to configure NF profile level attribute configurations data. This includes notification attributes that are used for alternate routing of notification requests and DNS SRV attributes for the DNS SRV feature. The data configured in this API is referred by NF profile level attribute configuration REST API.

Resources

The following table describes the resource name to retrieve, add, or update nfProfile-level-attribute-config-data configuration data:

Table 2-443 Resources

Resource Name	Resource URI	HTTP Method or Custom Operation	Description
nfProfile-level-attribute-config-data	ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data	GET	Retrieves all the existing NF profile level attribute configuration data items.
nfProfile-level-attribute-config-data	ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data/{configName}	GET	Retrieves NF profile level attribute configuration data for a config name.
nfProfile-level-attribute-config-data	/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data/{configName}	PUT	• Creates a new NF profile level attribute configuration data item. • Updates an existing NF profile level attribute configuration data record.
nfProfile-level-attribute-config-data	/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data{configName}	DELETE	Removes an existing NF profile level attribute configuration data item.

Resource Definition

GET ALL

This resource fetches all the NF profile level attribute configuration data.

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Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data`

The following table describes data structures supported by the GET response body on this resource:

Table 2-444 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigDataWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigDataWrapper objects are fetched.

The following table describes data structures supported by the GET response body on these resources:

Table 2-445 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigDataWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigDataWrapper configurations are fetched.

Sample GET API

```
Request:
curl -X 'GET' \
  'http://10.75.225.77:32094/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config-data' \
  -H 'accept: application/json'
```

```
Response:
[
  {
    "configName": "defaultNfProfileLevelAttrConfigData",
    "dnsSrv": {
      "scheme": "https",
      "portPreference": "SRV_RECORD"
    },
    "notificationAttributes": {
      "scheme": "http",
      "port": 80,
      "capacity": 65535,
      "priority": 1
    },
    "createdTimestamp": "2025-03-21 06:15:36",
    "updatedTimestamp": "2025-03-21 06:15:36"
```


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```
  }
]
```

GET

This resource fetches NF profile level attribute configuration data.

Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data/{configName}`

The following table describes data structures supported by the GET response body on this resource:

Table 2-446 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigDataWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigDataWrapper objects are fetched.

The following table describes data structures supported by the GET response body on these resources:

Table 2-447 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
`NfProfileLevelAttrConfigDataWrapper`	M	1	200	Indicates that all the NfProfileLevelAttrConfigDataWrapper configurations are fetched.
`ProblemDetails`	M	1	400	Retrieves records based on the 'configName', which does not exist.

Sample of a Successful GET API

```
Request:
curl -X 'GET' \
  'http://10.75.225.211:32052/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config-data/defaultNfProfileLevelAttrConfigData' \
  -H 'accept: application/json'



Response:
{
  "configName": "defaultNfProfileLevelAttrConfigData",
  "dnsSrv": {
    "scheme": "https",
    "portPreference": "SRV_RECORD"
  },
```


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```
  "notificationAttributes": {
    "scheme": "http",
    "port": 80,
    "capacity": 65535,
    "priority": 1
  },
  "createdTimestamp": "2025-03-21 06:15:36",
  "updatedTimestamp": "2025-03-21 06:15:36"
}
```

Sample of an Error GET API

```
Request:
curl -X 'GET' \
  'http://10.75.225.77:32094/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config-data/test12' \
  -H 'accept: application/json'



Response:
{
  "title": "Not Found",
  "status": 404,
  "detail": "Nf Profile Level Attribute Config data not found against given
query parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config-
data/test12",
  "cause": "DATA_NOT_FOUND"
}
```

PUT

This resource adds or updates NF profile level attribute configuration data.

Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data/{configName}`

The following table describes data structures supported by the PUT request body on this resource:

Table 2-448 Path Parameters

Name	Data Type	Mandatory (M) or Optional (O)	Description
`configName`	String	M	Indicates the name of the configurations to be added or updated.

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Table 2-449 NfProfileLevelAttrConfigWrapper

Data Type	Mandatory (M) or Optional (O)	Cardinality	Description
NfProfileLevelAttrConfigDataWrapper	M	1	Adds or updates NfProfileLevelAttrConfigDataWrapper.

The following table describes data structures supported by the PUT response body on this resource:

Table 2-450 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
NfProfileLevelAttrConfigDataWrapper	M	1	200	Indicates successful update of NF profile level attribute configuration data item.
NfProfileLevelAttrConfigDataWrapper	M	1	201	Indicates successful creation of NF profile level attribute configuration data item.
ProblemDetails	M	1	400	Scenarios: • Attempts to insert or update a record when configName in the query parameter does not match with the configName in the request body. • Attempts to insert or update records with an invalid notification attribute scheme. • Attempts to insert or update records with an invalid notification attribute port value. • Attempts to insert or update records with an invalid notification attribute capacity value. • Attempts to insert or update records with special characters in configName. • Attempts to insert a new record when the DB table reaches its maximum limit. • Attempts to insert or update records with an invalid DnsSrv scheme value.

Sample of a Successful PUT API

```
Request:
curl -X 'PUT' \
  'http://10.75.225.155:31554/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config-data/chk-config-data' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "configName": "chk-config-data",
  "dnsSrv": {
    "scheme": "https",
    "portPreference": "SRV_RECORD"
```


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```
  },
  "notificationAttributes": {
    "scheme": "http",
    "port": 10,
    "capacity": 9877,
    "priority": 10
  }
}'



Response:
{
  "configName": "chk-config-data",
  "dnsSrv": {
    "scheme": "https",
    "portPreference": "SRV_RECORD"
  },
  "notificationAttributes": {
    "scheme": "http",
    "port": 10,
    "capacity": 9877,
    "priority": 10
  },
  "createdTimestamp": "2025-04-04 05:52:03",
  "updatedTimestamp": "2025-04-04 05:52:03"
}
```

Sample of an Error PUT API

```
Request:
curl -X 'PUT' \
  'http://10.75.225.155:31554/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config-data/chk-config-data1' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "configName": "chk-config-data",
  "dnsSrv": {
    "scheme": "https",
    "portPreference": "SRV_RECORD"
  },
  "notificationAttributes": {
    "scheme": "http",
    "port": 10,
    "capacity": 9877,
    "priority": 10
  }
}'



Response:
{
  "title": "Bad Request",
```


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```
  "status": 400,
  "detail": "Config Name mismatch in Query params and Request body params,
Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config-
data/chk-config-data1",
  "cause": "MANDATORY_QUERY_PARAM_INCORRECT"
}
```

DELETE

This resource removes NF profile level attribute configuration data for a given configName.

Resource URI: `/ocscp/scpc-configuration/{version}/nfProfile-level-attribute-config-data/{configName}`

The following table describes data structures supported by the PUT request body on this resource:

Table 2-451 Path Parameters

Name	Data Type	Mandatory (M) or Optional (O)	Description
configName	String	M	Indicates the name of the configuration to be removed.

The following table describes data structures supported by the DELETE response body on this resource:

Table 2-452 Response Body Parameters

Data Type	Mandatory (M) or Optional (O)	Cardinality	Response Codes	Description
None	-	-	204	Indicates successful removal of the NF profile level attribute configuration data item.
ProblemDetails	M	1	400	Scenarios: • Attempts to remove the default configuration. • Attempts remove a configuration by config name, which is absent.

Sample of a Successful DELETE API

```
Request:
curl -X 'DELETE' \
  'http://10.75.225.77:32094/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config-data/chk-config-data' \
  -H 'accept: application/json'



Response:
{}
```


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```
Successfully deleted NF Profile Level Attribute Configuration Data
```

Sample for an Error DELETE API

```
Request:
curl -X 'DELETE' \
  'http://10.75.225.77:32094/ocscp/scpc-configuration/v1/nfProfile-level-
attribute-config-data/chk-config-data12' \
  -H 'accept: application/json'



Response:
{
  "title": "Not Found",
  "status": 404,
  "detail": "Nf Profile Level Attribute Config data not found against given
query parameter(s), Please refer to the User Guide.",
  "instance": "/ocscp/scpc-configuration/v1/nfProfile-level-attribute-config-
data/chk-config-data12",
  "cause": "DATA_NOT_FOUND"
}
```

Data Model

The following table describes data model for request or response:

Table 2-453 NfProfileLevelAttrConfigDataWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Description
configName	String	M	defaultNfProfileLevelAttrConfigData	Indicates unique configuration name to configure the NF profile level attribute configuration data. The default value cannot be deleted, but it can be modified. The allowed values must be alphanumeric with hyphen and underscore special characters.
dnsSrv.scheme	String	O	https	Defines the default scheme to form the query for DNS SRV profile level FQDN. Range: http or https
dnsSrv.portPreference	String	O	SRV_RECORD	Defines the path to retrieve the port values either from the DNS SRV record or from the configured notification attributes. Range: SRV_RECORD or STATIC_CONFIG • STATIC_CONFIG: Uses static configuration defined in notificationAttributes.port • SRV_RECORD: Uses port from the DNS SRV record.

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Table 2-453 (Cont.) NfProfileLevelAttrConfigDataWrapper

Field Name	Data Type	Mandatory (M) or Optional (O)	Default Value	Description
notificationAttributes.scheme	String	M	http	Defines the scheme to be used while creating default routing rules for notification requests when the scheme is not provided in the NF profile at profile level. Range: http or https
notificationAttributes.port	Integer	O	80	Defines the port to be used while creating default routing rules for notification request when the port is not provided in the NF profile at profile level. Range: 1-65535
notificationAttributes.capacity	Integer	O	65535	Defines the capacity to be used while creating default routing rules for notification requests when the capacity is not provided in the NF profile at profile level. Range: 0-65535
notificationAttributes.priority	Integer	O	1	Defines the priority to be used while creating default routing rules for notification requests when the priority is not provided in the NF profile at profile level. Range: 0-65535

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