



CDL with Separate Namespace for AMF Instance

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Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	AMF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled - Always-on
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2021.04.0

Feature Description

Common Data Layer (CDL) can be deployed separately as a common datastore for AMF.

The following are the two different deployment possibilities for CDL pods:

- CDL created locally in the same namespace as that of AMF namespace

- CDL created in a different namespace

Architecture

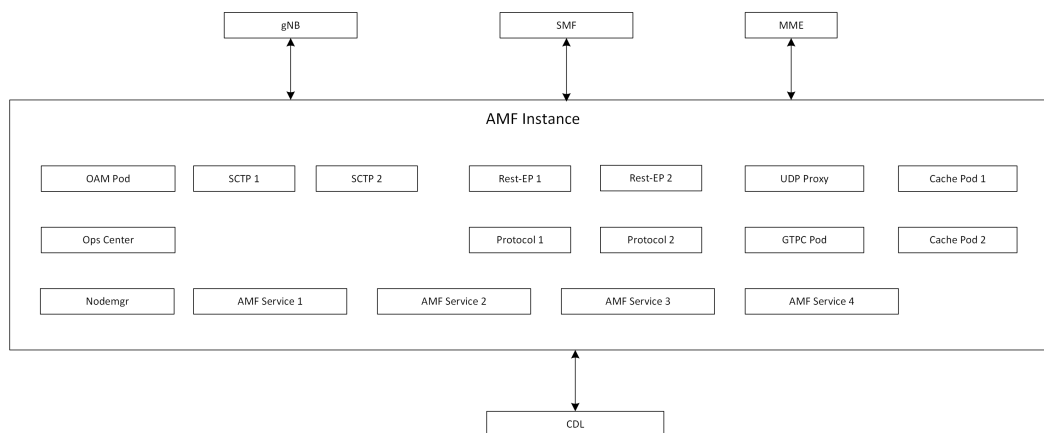
AMF consists of the following layers as part of the cloud native architecture:

- Protocol Layer—NGAP/NAS over SCTP transport and SBA over REST/HTTP transport
Example: AMF-protocol and AMF REST-EP
- Service Layer—Business logic of AMF functionality
Example: AMF-service pod
- Datastore Layer—Supports session storage
Example: CDL

The management entities Etc, Cache pod, and NodeMgr provide services to the Protocol Layer, Service Layer, and Datastore Layer functionalities.

The following figure explains the architecture of AMF instance with separate namespace of CDL.

Figure 1: AMF Instance Architecture



The CDL is deployed as an independent entity which acts as a session store for AMF. The AMF instance performs the following:

The CDL can be configured with slice name as AMF to store the AMF sessions. The AMF instance performs the following:

- Provides instance ID by enhancing the existing session gRPC APIs of CDL or using session-related CDL gRPC APIs.
- Uses the slice name as AMF for session store with CDL.

The CDL exposes the gRPC API to register or deregister notification URI. The AMF instance uses gRPC API to provide the notification URI details to CDL.

The CDL searches for the notification URI in session lookup with instance ID. If the notification URI fails, the CDL picks another URI from the list in round robin.

Feature Configuration

Configuring this feature involves the following steps:

- CDL configuration in same namespace as AMF—This configuration provides the commands to configure CDL locally per AMF in the same namespace. For more information, refer to [Configuring the CDL in same namespace as AMF, on page 3](#).
- CDL configuration in different namespace as AMF—To deploy CDL in different namespace, install CDL Ops Center in a separate namespace. This configuration provides the commands to configure CDL in separate namespace. For more information, refer to [Configuring the CDL in different namespace as AMF, on page 4](#).

Configuring the CDL in same namespace as AMF

The CDL in same namespace as AMF configuration must be done in AMF Ops Center.

To configure CDL in same namespace as AMF, use the following configuration:

```
config
  cdl datastore datastore_name
    endpoint replica no_of_replicas
      slot map no_of_slot_maps
      slot replica no_of_replicas_per_map
      index map no_of_index_maps
      index replica no_of_replicas_per_map
    end
end
```

NOTES:

- **cdl datastore** *datastore_name*—Specify the name of the datastore to be deployed.
- **endpoint replica** *no_of_replicas*—Specify the number of high availability (HA) instances to be created. Must be an integer in the range of 1–16.
- **slot map** *no_of_slot_maps*—Specify the number of partitions to be created for slot. Must be an integer in the range of 1–1024.
- **slot replica** *no_of_replicas_per_map*—Specify the number of HA instances to be created. Must be an integer in the range of 1–4.
- **index map** *no_of_index_maps*—Specify the number of partitions to be created for index. Must be in the range of 1–1024.
- **index replica** *no_of_replicas_per_map*—Specify the number of HA instances to be created. Must be an integer either 1 or 2.

Configuration Example

The following is an example configuration in CDL Ops Center.

```
config
  cdl datastore session
    endpoint replica 2
      slot map 2
      slot replica 2
      index map 1
      index replica 2
    end
```

Configuring the CDL in different namespace as AMF

To configure CDL in a different namespace as AMF, use the following configuration:

```
config
  cdl datastore datastore_name
    endpoint replica no_of_replicas
      slot map no_of_slot_maps
      slot replica no_of_replicas_per_map
      slot notification dynamic-provisioning { true | false }
      index map no_of_index_maps
      index replica no_of_replicas_per_map
    end
```

NOTES:

- **cdl datastore** *datastore_name*—Specify the name of the datastore to be deployed.
- **endpoint replica** *no_of_replicas*—Specify the number of high availability (HA) instances to be created. Must be an integer in the range of 1–16.
- **slot map** *no_of_slot_maps*—Specify the number of partitions to be created for slot. Must be an integer in the range of 1–1024.
- **slot replica** *no_of_replicas_per_map*—Specify the number of HA instances to be created. Must be an integer in the range of 1–4.
- **slot notification dynamic-provisioning true**—Enable application to provide notification endpoint dynamically through API.
- **index map** *no_of_index_maps*—Specify the number of partitions to be created for slot. Must be an integer in the range of 1–1024.
- **index replica** *no_of_replicas_per_map*—Specify the number of HA instances to be created. Must be an integer either 1 or 2.



Note In AMF Ops Center:

- CDL configuration must not be available.
 - **show running-config** cdl command must not return the configuration.
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Configuration Example

The following is an example configuration in CDL Ops Center.

```
config
  cdl datastore session
    endpoint replica 2
    slot map 2
    slot replica 2
    slot notification dynamic-provisioning true
    index map 1
    index replica 2
  end
```

