Oracle® Communications

Cloud Native Binding Support Function User's Guide

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Oracle Communications Cloud Native Binding Support Function User's Guide, Release 1.6.0

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Contents

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What's New in This Guide

This section introduces the new/updated features for Release 1.6.0 in Oracle Communications Cloud Native Binding Support Function (BSF) User's Guide.

New/Updated Features

For BSF Release 1.6.0, this guide has been updated to include the following feature:

- Added a Configuring Cloud Native Core Binding Support Function Using Cloud Native Core Console section to support integration of BSF with CNC Console.
- Added a Diameter Configurations section to configure Diameter configurations in BSF.

1 Introduction

Binding Support Function (BSF) provides a PDU session binding functionality, which ensures that an AF request for a certain PDU Session reaches the relevant PCF holding the PDU Session information. This service:

- Allows Policy Control Function users to register, update, and remove the binding information
- Allows NF consumers to retrieve the binding information

References

This section provides the details of the references for Binding Support Function.

- Binding Support Function Cloud Native Installation and Upgrade Guide

Acronyms

This section provides the details of the acronyms used in the document.

Table 1-1 Acronyms

Field	Description
AF	Application Function
BSF	Binding Support Function
DNN	Domain Network Name
FQDN	Fully Qualified Domain Names
GPSI	Generic Public Subscription Identifier
HTTP	Hypertext Transfer Protocol
NEF	Network Exposure Function
NF	Network Function
NRF	NF Repository Function
PCF	Policy Control Function
OCPM	Oracle Communications Policy Management
PDU	Protocol Data Unit
RDBMS	Relational Database Management System
S-NSSAI	Single Network Slice Selection Assistance Information. An S-NSSAI is comprised of: - A Slice/Service type (SST), which refers to the expected Network Slice behaviour in terms of features and services; - A Slice Differentiator (SD), which is an optional information that complements the Slice/Service type(s) to differentiate amongst multiple Network Slices of the same Slice/Service type.
SMF	Session Management Function
SUPI	Subscription Permanent Identifier

Table 1-1 (Cont.) Acronyms

Field	Description
UDSF	Unstructured Data Storage network function
UE	User Equipment

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Binding Support Function Architecture

This section provides information about Binding Support Function Architecture.

The BSF Management Service is an internal service used for the OCPM BSF/PCF to provide a PDU session binding functionality, which ensures that an AF request for a certain PDU Session reaches the relevant PCF holding the PDU Session information.

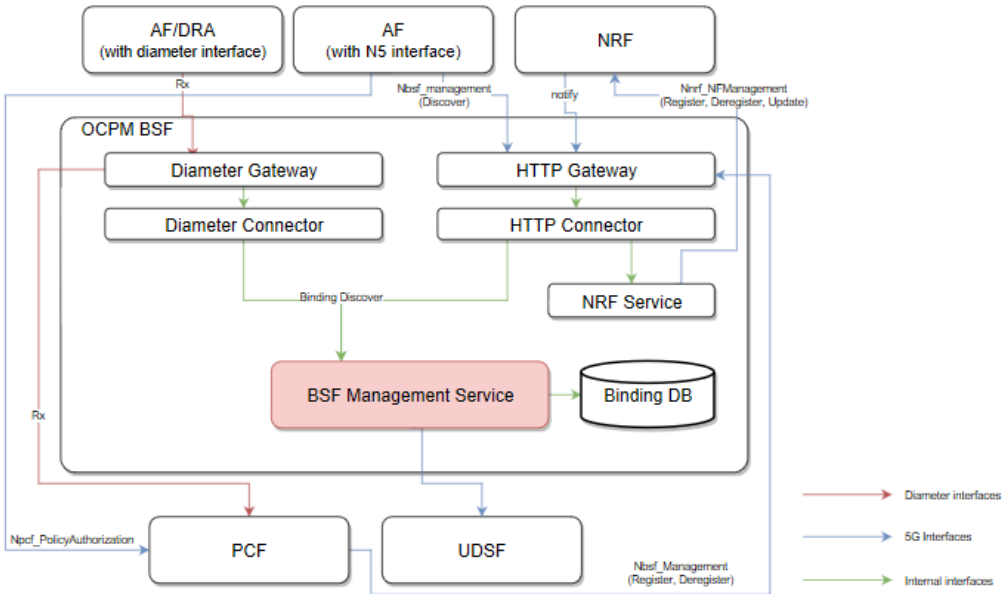
The service implements the Binding Support Management Service as defined in 3GPP TS 29.521 [4].

The service allows consumers to register, deregister, and discover the binding information.

Binding Support Function Management Service Architecture

BSF Management Service is designed as a micro service that can be deployed in a standalone BSF.

Figure 2-1 Service Management Architecture



> **Note:**
>
> BSF Management Service only supports storing, removing, and querying binding information from RDBMS, and additional storage options. For example, In-memory DB, and UDSF.

3

Configuring Cloud Native Core Binding Support Function Using Cloud Native Core Console

This chapter describes how to configure different global and service parameters in Oracle Communications Cloud Native Core BSF using Oracle Communications Cloud Native Core Console.

Cloud Native Core Console Interface

This section provides an overview of the Oracle Communications Cloud Native Core (CNC) Console, which includes an interface to aid in creating global and service parameters in BSF.

You can use BSF integrated with CNC Console only after logging successfully into the CNC Console application. To login successfully into the CNC Console, you need to make the following updates to the hosts file available at the **C:\Windows\System32\drivers\etc** location.

In the Windows system, user needs to open the **hosts** file in the notepad as an Administrator and append the following set of lines at the end:

Example:

```
10.75.225.189 cncc-iam-ingress-gateway.cncc.svc.cluster.local

10.75.225.189 cncc-core-ingress-gateway.cncc.svc.cluster.local
```

> **Note:**
>
> The IP Address in the above lines may change when deployment cluster changes.

Save and close the notepad.

> **Note:**
>
> Before logging into CNC Console, it is important to create a CNC user and password. Using this user details, you can login to the CNC Console application. For information on creating a CNC Console user and password, see *Oracle Communications Cloud Native Core Console Installation Guide*.

To login to CNC Console :

1. Open a web browser and enter the URL: http://cncc-core-ingress-gateway.cncc.svc.cluster.local:*port number*/ and press Enter.

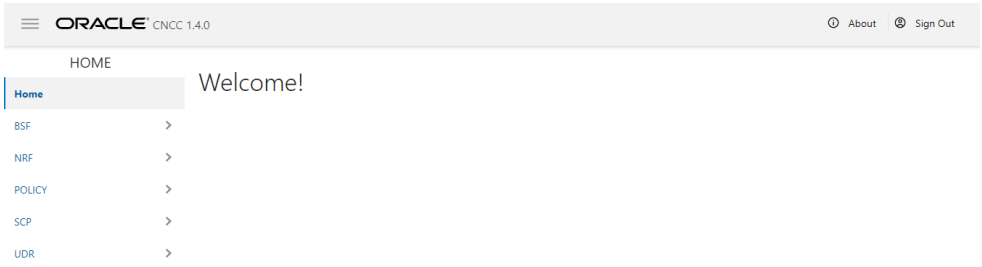
The login page opens.

where, *port number* is cncc-iam-ingress-port number

.

2. Enter the **Username** and **Password**.
3. Click **Login**. Following screen appears:

Figure 3-1 CNC Console Interface



This is the CNC Console Home Page from where you can navigate to different NF services. To use BSF services integrated with CNC Console, click **BSF** in the left navigation pane.

General Configurations

You can manage and view the General Configurations from this page.

To edit the General Configurations:

1. From the navigation menu, under **BSF**, click **General Configurations**.
   The General Configurations screen appears.
2. Click **Edit** to edit the general configurations.
3. Enter the following information:
   - **Enable Tracing**- Specifies whether to enable/disable tracing. By default, this configuration is enabled.
   - **Enable Metrics**- Specifies whether to enable/disable system metrics. By default, this configuration is enabled.
4. Click **Save**.

Configuring BSF Management Service

Perform the following steps to configure the BSF Management Service:

1. From the navigation menu, under **BSF**, click **Service Configurations**, and then click **Management Service**.
   The Management Service screen appears.
2. Click **Edit** to configure the BSF Management Service.
3. Check the default configuration for the fields available in respective groups and edit as necessary.

The following table describes the fields along with their valid input values under each group:

Field Name	Description
Root Log Level	Indicates the log level of BSF Management Service. **Default Value**: Warn **Allowed Values**: Debug, Information, Warn, Error, Trace, Always
Server Root URL	Specifies the URL of the server root.
Log Levels	
Logger Name	**Default Value**:
Level	Indicates the log level of BSF Management Service. **Default Value**: Warn **Allowed Values**: Debug, Information, Warn, Error, Trace, Always

4. Click **Save**.

Diameter Configurations

You can manage and view the Diameter Configurations from this page.

Settings

To edit the Settings:

1. From the navigation menu, click **BSF**, and then **Diameter Configurations**, and then **Settings**.
   The Settings screen appears.
2. Click **Edit** to edit the settings.
3. Enter the following information:
   Timer
   - **Reconnect Delay (sec)**- Enter the time frame to delay before attempting to reconnect after a connection failure in seconds. The default is 3 seconds.
   - **Response Timeout (sec)**- Enter the response timeout interval in seconds. The default is 5 seconds.
   - **Connection Timeout (sec)**- Enter the connection timeout interval in seconds. The default is 3 seconds.
   - **WatchDog Interval (sec)**- Enter the watchdog interval in seconds. The default is 6 seconds.

   Transport
   - **Protocol** - TCP/SCTP
4. Click **Save**.

Peer Nodes

To edit the Peer Nodes Configurations:

1. From the navigation menu, click **BSF**, and then **Diameter Configurations**, and then **Peer Nodes**.
   The Peer Nodes screen appears.
2. Click **Add** to create peer node. The Create Peer Node screen appears.
3. Enter the following information:
   - **Name**- Unique Name of the peer node.
   - **Type**- Defines which type of diameter service it should take up. The value can be Application function (af), backend, diameter routing agent(dra), ocs, tdf, or udr.
   - **Reconnect Limit (sec)** -
   - **Initiate Connection**- Set it to true to initiate a connection for this peer node.
   - **Port**- Enter the port number. Enter a number from 0 to 65535.
   - **Host**- Enter the host name. Enter a FQDN, ipv4 or ipv6 address available for establishing diameter transport connections to the peer node .
   - **Realm**- Enter the realm name, that is, FQDNs to all of that computers that transact diameter traffic.
   - **Identity**- Enter a identity to define a node in a realm.
4. Click **Save**.

> **Note:**
>
> You can import and export the Peer Node configurations by clicking on **Import** and **Export** on Peer Nodes Configurations screen.

Session Viewer

The Session Viewer displays detailed session information for a specific subscriber. Within the session viewer, you can enter query parameters to render session data for a specific subscriber. This section provides information about viewing the sessions.

To view the sessions:

1. From the navigation menu, under **BSF**, click **Session Viewer**. The Session Viewer page appears.
2. a. Enter the value of the following fields in the **Address** group:
   - **IPV4 Address**- The list consists of IP addresses in IPv4 format.
   - **IPV6 Prefix**- The IPv6 Address Prefix
   - **IP Domain**- The IPv4 address domain identifier.

- **MAC Address**- MAC address is formatted as six groups of two hexadecimal digits separated by colons (:) or hyphens (-). For example, in the format hh:hh:hh:hh:hh:hh.

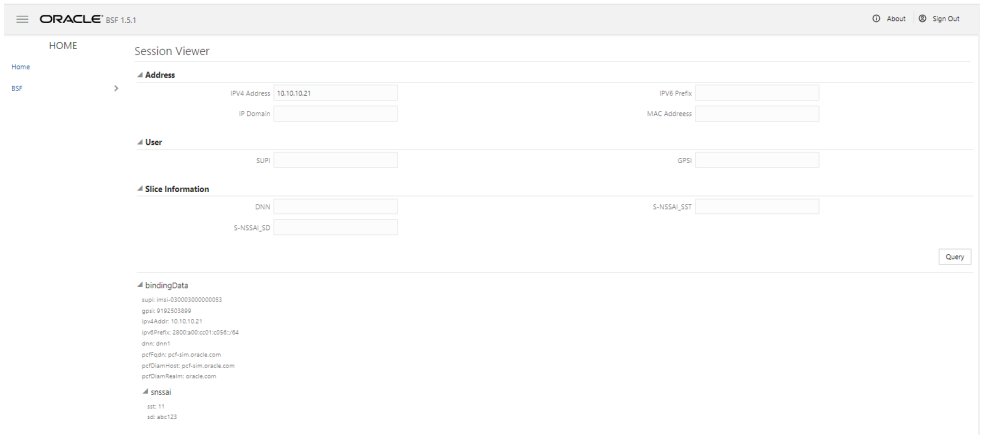
b. Enter the value of the following fields in the **User** group:

- **SUPI**- Subscription Permanent Identifier
- **GPSI**- Generic Public Subscription Identifier

c. Enter the value of the following fields in the **Slice Information** group:

- **DNN**-
- **S-NSSAI_SST**-
- **S-NSSAI_SD**-

3. Click **Query**. Information about the subscriber session(s) is displayed. Following screen capture is an example of Query result:



If session data is not available, the error is displayed along with No session found.