

Oracle Communications Binding Support Function (BSF) datasheet

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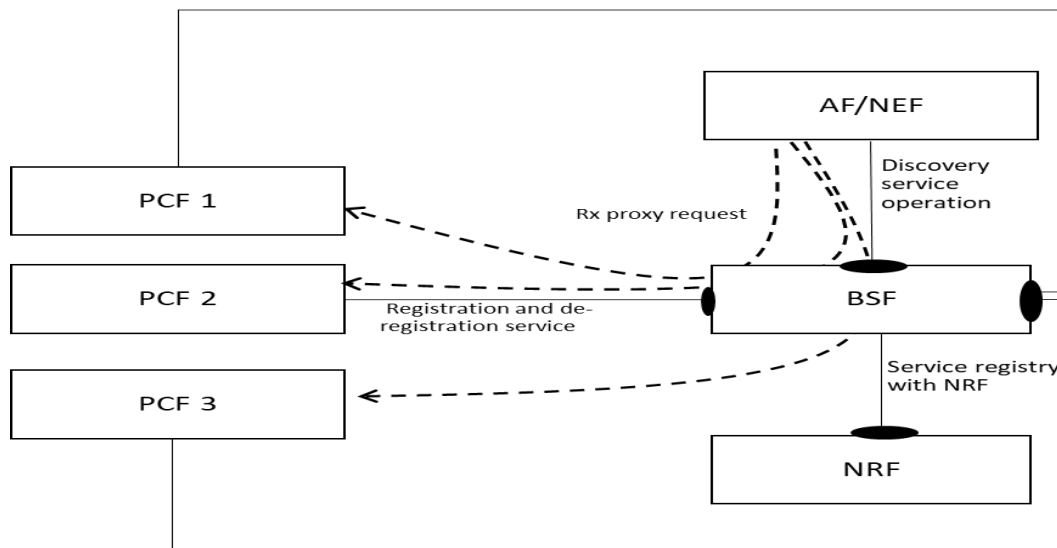
BSF in 5G core network

Operators around the world will have to put extra effort in making their 5G network more flexible, agile, scalable, secure, and the network core is where it all starts. The core is the brain of a telecom network with all the important decisions related to signaling, policy, charging, routing, and more. The fifth generation of mobile networks has radically changed the way elements in the core communicate with each other. The 5G core follows a Service Based Architecture (SBA) where network elements advertise and provide services which can be consumed by other elements in the core via application programming interfaces (APIs). SBA combined with cloud native technologies increases the flexibility, agility, and scalability of the 5G core in support of new use cases. Communications Service Providers (CSPs) looking to monetize customized and differentiated services with more flexibility and less cost will need to implement a robust 5G policy framework. More importantly, if they have more than two Policy Control Functions (PCFs) in their network, they will require to scale their 5G network accordingly and this can only be done by the Binding Support Function (BSF) which provides secure interaction of user/application functions with the policy framework.

Oracle Communications BSF in the 5G network

Oracle Communications Cloud Native Core, BSF provides Protocol Data Unit (PDU) session binding functionality, by binding an application function request to the right PCF instance out of many PCF deployed in 5G network. Different Network Functions (NFs) in a 5G network coordinate with Policy Control Function (PCF) to provide call, messaging, data, and other support services to users. To support all subscribers and user equipment (UEs), multiple and separately addressable instances of the PCF are deployed in the network. Therefore, different NFs need binding support to identify the right PCF instance for session correlation and policy revalidation. The BSF provides this binding support in the 5G core network.

Figure 1. BSF maps to the right PCF

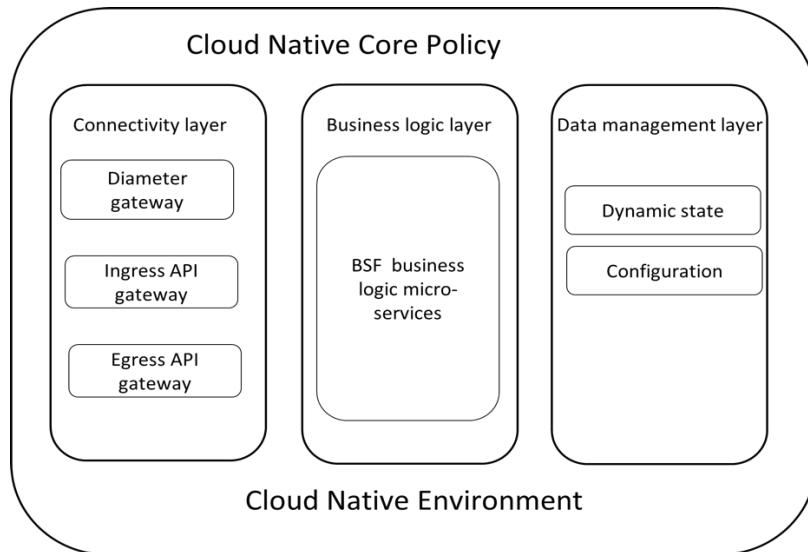


Oracle Communications BSF can be deployed for specific IP ranges, one or more slices. BSF Supports Binding support management service and consumes NRF management service. BSF enables Rx proxying for seamless interworking with Proxy-Call Session Control Function (P-CSCF) /Policy-Diameter Routing Agent(P-DRA). BSF allows Policy Control Function (PCF) to register/deregister/update subscriber session binding information to be discoverable by any consumer like Network Exposure Function (NEF)/ Application Function (AF) /Network Data Analytics Function (NWDAF). They can use the discovery service to identify the right PCF instance for session correlation and trigger for policy re-validation. To enable operators to continue using existing IMS deployment until IMS transition to SBA is made, BSF also supports Rx proxy function towards PCF.

Functional diagram of Oracle Communications BSF

Oracle Communications BSF has a three-tier architecture, connectivity tier (Diameter and HTTP2), business tier (business logic micro-services) and data tier.

Figure 2. Oracle Communications BSF's Functional diagram



Features and benefits

Oracle Communications BSF is based on Cloud Native Computing Foundation (CNCF) principles. The prominent features are listed below:

Ease of operation

- Provide statistics-based report with clearly defined criteria backed by metrics and KPIs to identify problematic site without impact on operations, helping operators to determine health of a site and take appropriate action.
- Enables customers to identify problematic subscribers in production without having to enable logs/traces for all subscribers.
- Support a system audit, identify, and remove the stale bindings

Enhanced resiliency

- Support for local and geo-redundancy which ensures 99.999% availability.
- Support for NF Sets preventing scenarios such as failure, load balancing, load re-balancing
- Scale your application up and down automatically based on usage.
- Support standard Kubernetes based features.
- Built-in overload control measures in the NFs to handle and protect signaling storm

Experience and Expertise

- Oracle DRA of 4G is a proven, reliable, and highly scalable solution which is deployed and trusted in tier-1 and tier-2 operators worldwide.

Based on CNCF principle

- Has a microservices based architecture and supports cloud native deployment with CI/CD

Summary

Oracle BSF has been deployed in many networks across the globe for tier 1 operators like [DISH](#), [BT](#), and [Orange](#). Oracle Communications combines 40+ years of heritage in network experience with cloud innovation to deliver highly secure, robust, and flexible cloud native 4G/5G core network solutions. For the best solutions and support, Oracle is a preferred partner that has a dual understanding of 5G core network challenges and the IT challenges that come with a cloud native infrastructure.

Oracle is helping us reduce complexity with solutions that ease the migration to 5G and introduce innovative new services

Howard Watson
Chief Technology Officer,
BT

Key features

- Eases the operation through clearly defined criteria backed by metrics and KPIs
- Enhances resiliency through high availability and preventing failure and ensuring load balancing
- Bring-in experience and expertise to make BSF a robust solution.

Related products

- Oracle Communications Cloud Native Core, Security Edge Protection Proxy (SEPP)
- Oracle Communications Cloud Native Core, Service Communication Proxy (SCP)
- Oracle Communications Cloud Native Core, Policy Control Function (PCF)
- Oracle Communications Cloud Native Core, Policy and Charging Rules Function (cnPCRF)
- Oracle Communications Cloud Native Core, Cloud Native Environment (CNE)
- Oracle Communications Cloud Native Core, Network Exposure Function (NEF)
- Oracle Communications Cloud Native Core, Network Slice and Selection Function (NSSF)
- Oracle Communications Cloud Native Core, Network Data Analytics Function (NWDAF)
- Oracle Communications Cloud Native Core, Data Director (DD)

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