

Oracle® Communications
Diameter Signaling Router
Release Notice
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ORACLE®

Oracle Communications, DSR Release Notice, Release 8.4.x

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Chapter 1: Introduction

Topics:

DSR Release 8.4 Introduction
5G Cloud Native Release 1.0
 Introduction
 Revision History

This Release Notice includes feature descriptions, supported hardware baseline, and media and documentation pack contents, and identifies the supported upgrade paths. This document includes listings for both the resolved and known bugs for this release. Directions for accessing key Oracle sites and services are also identified in the Oracle References and Services chapter.

Release Notices are included in the documentation pack made available with every software release.

DSR Release 8.4 Introduction

Oracle Communications Diameter Signaling Router (DSR) helps communications service providers monetize their network more efficiently to remain competitive in the market. It creates a centralized and secure signaling architecture that enables core networks to grow incrementally, and to support increasing service and traffic demands. The distinctive advantages provided by the Oracle Communications Diameter Signaling Router are network scalability, resiliency, interoperability, and security, as well as network visibility. The cloud deployable Oracle Communications Diameter Signaling Router enables service providers to manage Diameter signaling while optimizing network resources, therefore maximizing the return on network and technology investments.

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5G Cloud Native Release 1.0 Introduction

Oracle Communications Cloud Native network functions debut with this release. Each of the new network functions are described in Chapter 2 under their respective Cloud Native headings. These functions allow you to access the database for storing application, subscription, authentication, service authorization, policy data, session binding, and application state information.

Revision History

Table 1: Revision History

Date	Revision	Description
04/05/2019	01	Initial release for DSR Release 8.4 and Cloud Native Release 1.0 GA
04/26/2019	02	Added CNE 1.0.1 release information
07/23/2019	03	Added DSR 8.4.0.1.0 (Cloud Native 1.1) information
09/20/2019	04	Added DSR 8.4.0.2.0 (Cloud Native 1.2) information
10/07/2019	05	Added CNE 1.2 Resolved and Known Bugs to Tables 16 and 21
12/06/2019	06	Added DSR Release 8.4.0.3.0 feature list and Bug details Added VNFM and SCEF Bug
08/01/2020	07	Added Increased Number of PRT Entries feature to Release 8.4.0.3.0 feature list Added IDIH 8.2.2 release information
06/03/2020	08	Added DSR Release 8.4.0.4.0 features and Bug Details. Updated the load line-up list.
18/03/2020	09	Updated VNFM version (DSRVNFM_4.3.0.0.0_43.6.0.qcow2) and bug details.
23/03/2020	10	Updated VNFM version (DSRVNFM_4.3.0.0.0_43.7.0.qcow2) and bug details.
13/04/2020	11	Updated VNFM version (DSRVNFM_4.3.0.0.0_43.8.0.qcow2) and bug details.
20/05/2020	12	Added DSR Release 8.4.0.5.0 features and Bug Details. Updated the load line-up list.
15/06/2020	13	Updated Media Pack details for DSR Release 8.4.0.5.0.
01/07/2020	14	Updated the document for Bug 28224086
07/17/2020	15	Updated the document for VNFM Release 4.5
07/27/2020	16	Updated for DSR 8.4.0.6.0 Release

Chapter 2: Feature Descriptions

Topics:

DSR Release 8.4 Introduction
5G Cloud Native Release 1.0
 Introduction
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 Release 8.4.0.5.0
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DSR Deprecated/Obsolete Software
 (Bug 28224086)
Cloud Native Applications, Release 1.2
Cloud Native Applications, Release 1.1
Cloud Native Applications, Release 1.0
 (Bug 29028610)
Media Pack
Load Line Up
Documentation Pack
Supported Hardware Baseline
Oracle Hardware
HP Hardware
Oracle Firmware Upgrade Pack
Supported Upgrade Paths
Severity Definitions
Resolved Bug List
Customer Known Bug List
My Oracle Support (MOS)
Emergency Response

This chapter provides a summary of each feature released in DSR release 8.4 and Cloud Native features releases 1.0, 1.1, and 1.2.

Release 8.4.0.6.0

vSTP

The following vSTP features are implemented in release 8.4.0.6.0:

vSTP AINPQ Feature

vSTP has been enhanced with the support for AIN and ANSI-41 Number portability request messages.

vSTP MP Capacity Improvement

The vSTP MPs capacity is enhanced to 18,000 MPS per vSTP MP for GTT messages.

GUI Enhancements

The following configuration options are added to DSR Graphical User Interface (GUI):

- Multiple vSTP configuration options
- Common Security option

Release 8.4.0.5.0

DSR

The following DSR features are implemented in release 8.4.0.5.0:

1. Diameter Security Application (DSA) with UDR

Note: The “Diameter Security Application (DSA) with UDR” is the part of the common security (diameter and ss7) solution provided in this DSR 8.4.0.5.0 release.

2. DSR support on KVM with OL7.x

vSTP

The following vSTP features are implemented in release 8.4.0.5.0:

1. vSTP IR21 Bulk Upload
2. vSTP ITU Duplicate Point code support
3. vSTP SFAPP Dynamic Learning
4. vSTP SLS Feature
5. vSTP Support of Segmented XUDT
6. vSTP TIF Support

VNFM

The following VNFM features are implemented in release 4.5:

- Support for Target set Address
- Support for Geo Redundancy
- VNFM to support NTP on IPv6 network and multiple NTP resources
- Support for OpenStack Rocky version

The following VNFM features are implemented in release 4.4:

- Mixed Mode Dual IP stack support on DSR, SDS Components

- VNFM to support multiple SSL certificate for communication with Multiple Openstack controllers
- Soft-anti-affinity as a configurable option
- VNFM to support dual SNMP Managers on IPv4 or IPv6
- VNF Identifier Delete

DSR Deprecated/Obsolete Software

The “Diameter Security Application (DSA) with Universal-SBR (USBR)” is an obsolete application. Alternatively, the “Diameter Security Application (DSA) with UDR is introduced in DSR 8.4.0.5.0. Refer to NIR document and Diameter Security Application with UDR User’s Guide for details.

Customers using this application must not upgrade DSR software to DSR 8.4.0.5.0 release and should migrate to “DSA with UDR” based application.

Release 8.4.0.4.0

DSR

The DSR and SDS hostname length is increased. DSR/SDS supports 30 characters hostname length.

VNFM

VNFM supports the following features:

1. Dual IP stack support on DSR/SDS VNFs for XMI, IMI and XSI networks.
2. Enhanced configuration to allow editing of standard parameters.
3. Secure Northbound REST interface with OAuth 2.0.
4. Health Monitor Alerts via SNMP traps.
5. Oracle Linux 7.6 (OL7.6) version as the base VNFM OS.
6. VNF Hostname Enhanced Support (more characters and customization).
7. Subnet name as input in VNF request for the interfaces being created.
8. Virtual Provisioning Gateway (vProGW) VNF Deployment.

Release 8.4.0.3.0

vSTP

This release is specific to vSTP related features in DSR. It is applicable only to the new installations:

MTP Routed GTT Support with Screening Action (Bug 29115539)

The GTT support has been enhanced as follows:

GTT actions are performed on MTP routed MSUs in a way, similar to the existing global title translation GTT handling for GT routed MSUs.

Two configurable parameters are added to determine how MTP routed MSUs are handled:

- The first parameter specifies whether global title translation is performed on an MTP routed MSU and the routing that is performed on the MSU after global title translation is performed.
- The second parameter specifies whether an MTP routed MSU is MTP routed or discarded (with UDTs) after the failure of the global title translation process.

M3UA Client Mode Support in vSTP (Bug 29113802)

Starting with this release, the vSTP M3UA client support is available for ASP client mode.

Configuration Table Capacity (Bug 29152346)

The capacity of below vSTP configurations has been enhanced as follows:

- Capacity of GTT rules is enhanced to 1,000,000.
- 10,000 different DPC
- 10,000 signaling route

GTT Throttle and SCPVAL (Bug 29152322)

vSTP has been enhanced with the support for following two GTT actions:

- GTT Throttle action

The GTT Throttle action is part of SS7 security firewall. It provides support for Egress throttling of GTT messages in vSTP.

- SCPVAL action

The SCPVAL GTT action along with relevant parameters performs the validation on MAP parameters by comparing the SCCP and MAP digits.

Stateful Firewall Support in vSTP (Bug 30087663)

vSTP is enhanced with the following Stateful Firewall use cases:

- VLR Validation
- Velocity Check

IDP Relay and MOSMS Support in vSTP (Bug 29265575)

vSTP is enhanced with IDP Relay and MOSMS support as follows:

- Support for Prepaid IDP Query Relay (IDPR) feature with the following call flows:

- Mobile Originated Prepaid Call to a Ported Out Subscriber
- Mobile Originated Prepaid Call to Imported or Own Non-Ported Subscriber
- Mobile Originated Prepaid Call to Foreign (Non-Ported) Subscriber
- Support for Mobile Originated Short Message Service (MOSMS) feature with the following:
 - Mobile Originated Based GSM SMS Number Portability (MO-Based GSM SMS NP)
 - Portability Check for Mobile Originated SMS (MNP SMS)
 - Prepaid Short Message Service Intercept (PPSMS)
 - Mobile Originated SMS Additional Subscriber Data (MO SMS ASD)
 - Mobile Originated SMS Generic Routing Number (MO SMS GRN)

vSTP EIR IMSI Whitelist Expansion (Bug 29651069)

The vEIR has been enhanced to support 100000 IMSI records of white listing special subscribers.

vSTP EIR Logging Enhancements (Bug 29651081)

The logging functionality of EIR has been enhanced to provide information about the origin of checkIMEI message by logging the following parameters:

- OPC for SS7 message
- Origin-Host and Origin-Realm for diameter EIR messages

Increased Number of PRT Entries beyond 1000 (Bug 29866333)

The PRT has been enhanced to support 2000 entries.

VNFM

The DSR Virtual Network Functions Manager (DSR VNFM) is an automatic deployment process application that helps with quick deployment of virtual DSRs.

SCEF

The DSR Service Capability Exposure Function (SCEF) is a network element that securely exposes the servers and capabilities provided by 3GPP network interfaces.

Release 8.4.0.0.0

DSR

Alarm Changes

Changes to the alarm function resulted in changes to the following:

- New GUI screen for the Peer Node Alarm Group and associated column addition to the Peer Node Status screen
- New GUI screen for Connection Alarm Group and associated column addition to the Connection Status screen
- New Alarm Aggregation, Peer node Alarm Group, and Connection Alarm Group features.
- New Alarm Group Feature Enable option under System Options, General tab.

Automated Test Suite

The automated test suite for DSR is used to test virtual DSR (vDSR) deployed in lab environment.

DSA Changes

Time Distance Check Enhancements (Bugs 28108321 and 27737377)

Added capability in the DCA Framework to create and send a Diameter message to another node.

Time Distance Check to Support Transit Time between Continents (Bugs 27737337 and 28899149)

Added capability under the Time Distance Check feature in DSA to configure the minimum transit time for a Time Distance Check security countermeasure for all MCC/VPLMN IDs.

MMI (Bug 27093415)

MMIs have been enabled for the following:

- SBR Configuration
 - SBR Databases
 - SBR Database Resizing Plans
 - SCB Data Migration Plans
 - Database Options

- Dynamic Peer Discovery Configuration
 - Realms
 - DNS Sets
 - Discovery Attributes
- Diameter Common MPs
 - DA-MP
 - SS7-MP
- Topology Hiding Configuration
 - Trusted Network Lists
 - Path Topology Hiding Configuration Sets
 - S6a/S6d HSS Topology Hiding Configuration Sets
 - MME/SGSN Topology Hiding Configuration Sets
 - S9 PCRF Topology Hiding Configuration Sets
 - S9 AF/pCSCF Topology Hiding Configuration Sets
 - Protected Networks
- User Configuration AppWorks
 - Software Management Versions
 - Access Control for Users, Groups, Sessions, and Authorized IPs
 - Remote Server LFAP Authentication and Data Export
 - Alarm History and Trap Logs
 - Administration General Options
- vSTP Configuration
 - Local Signaling Point
 - Remote Signaling Point
 - Link Sets
 - Route
 - GTT Action Sets
 - GTT Selectors
 - GTAs
 - GTT Sets
 - MAP Set
 - MRN Set
 - M3RL Options

- SCCP Options
- GT Mod
- SCCP Applications
- VSTPMTPScreenSet
- VSTPMTPScrRule
- MNP Service Selector Table
- MNP Options
- Digit Screening Table Home RN

SDS

Large Profile Support

Enables a large profile support on SDS to support 1 billion routing entities.

SCEF Changes

Additional Monitoring Events (Bug 28812275)

The Monitoring Events feature monitors specific events in the 3GPP system and makes monitoring event information available using SCEF. It identifies the 3GPP network element suitable for configuring specific events, event detection, and event reporting to the authorized users, for example, for use by applications or logging. If such an event is detected, the network can be configured to perform special actions, for example, limit UE access.

API-Based Charging MTC Procedures (Bug 28124801)

SCEF supports API-based charging for NIDD Events, Monitoring Events, Device Triggering Events, and Enhanced Coverage Restriction Events that operate across the T8 reference point.

Charging has been implemented based on an offline event-based charging mechanism.

MQTT Gateways at SCEF (Bug 28111851)

- The MQTT Broker acts a cross proxy to convert the MQTT message to HTTP messages (and vice versa) to enable IP device communication between IoT devices and SCS/AS.
- The MQTT Broker enables IoT device communication for MO messages.
- The MQTT Broker enables SCEF to be used for the TCP and TLS transport bindings.
- The MQTT Broker provides a unified T8 interface for IP device communication enabling monitoring event call flows.

QoS Control

QoS Control capability has been added to SCEF. SCEF supports setting up an AS session with the required QoS and priority handling. When SCEF receives the request from the SCS/AS to provide QoS for an AS session, the SCEF acts as an AF and transfers the request to provide QoS for an AS session to the PCRF via the Rx interface.

T8 Compliance with V15 (Bug 28113780)

Makes SCEF compliant with 3GPP 1.0 specifications for T8 specifications.

vSTP Changes (Bug 29028610)

ANSI ITU Conversion (Bug 25973034)

The ANSI/ITU SCCP Conversion feature has been added to vSTP. This feature provides the vSTP with the ability to format and decode/encode inter-network SCCP traffic and is supported for UDT, UDTS, XUDT, and XUDTS messages.

SCCP CGPA conversion is optional for ITU-X<->ITU-Y domain crossings. X and Y are referred as different variants of ITU domains which are ITU-I, ITU-N, ITU-I Spare, and ITU-N Spare.

Flow Control (Bug 28609300)

A flow control mechanism was added to control the data flow between network nodes. This provides smooth handling of data at the recipient's end; allows the sender to not send data in bursts; and prevents data retransmission at the sender's end.

GTT Modification Feature (Bug 25972692)

This feature allows users to modify the Calling Party Address information in an SCCP message as part of the Global Title Translation in vSTP.

ITUI-Spare, ITUN-Spare (Bugs 28219409 and 28126332)

Enables operators to expand the ITU domain nodes by providing support for the spare network indicator bit.

MNP with Hex Digit Support (Bugs 27355487 and 28829325)

The MNP feature on vSTP extradites the process to check if a dialed number is part of the present network or a number that has been ported to another network.

MTP Screen Feature (Bug 25973064)

This feature allows route message to and from other networks to be screened depending on how the vSTP screening tables are defined.

Multiple PC (Bug 28126356)

This feature enables vSTP to host Secondary Point Codes in addition to true point codes used by vSTP in the ANSI, ITU-N, and ITU-I domains.

IDP Query and Response

This feature enables an IN number portability query response for IN IDP messages.

Loop Detection (Bug 29112769)

This feature detects SCCP circular message routing and discards messages stuck in a loop.

MAP-Based Routing (Bug 29059924)

This feature helps the user implement an SS7 security firewall using map component parameters verification.

DSR Deprecated/Obsolete Software (Bug 28224086)

The following software elements are not compatible with DSR 8.4:

- DAMP Active-Standby Configuration
- GLA
- MAP Diameter Interworking
- RADIUS

Virtualized Engineered DSR (VEDSR) deployment also known as TVOE based Fully Virtualized Rack Mount Server (FV RMS) Signaling node is not supported from DSR Release 8.3 onwards.

Following are the non-supported network elements of Virtualized Engineered DSR (VEDSR):

- DSR NOAM,
- DSR SOAM,
- DSR Message Processors (MP),
- SS7 MP,
- DSR IPFE,
- DSR SBR (Session/Binding/Universal),
- SDS NOAM,
- SDS SOAM,
- SDS QS,
- SDS DP

Note: DSR and SDS Baremetal Installations with TVOE based NOAM/SOAM will continue to be supported.

Virtualized Engineered DSR (VEDSR) networks and associated elements needs to be migrated to virtual DSR implementation based on KVM with/without Openstack or VMWARE prior to DSR 8.3 or 8.4.x upgrade or install.

Cloud Native Applications, Release 1.2

This is released under the DSR 8.4.0.2.0 product release:

Cloud Native Applications, Release 1.1

This is released under the DSR 8.4.0.1.0 product release:

Cloud Native Environment (CNE) Version 1.1.0.1

CNE has been updated with the following enhancements:

- Deploy OCCNE in Openstack environment, complete deployment, configuration automatically

Network Repository Function (NRF) Version 1.1

NRF has been updated with the following enhancements:

- NRF Compliance with Release 15.3

Service Communication Proxy (SCP) Version 1.1

SCP has been updated with the following enhancements:

- UDM-UECM and UDM-SDM services in reverse proxy mode. All other UDM services are in transparent proxy mode only.
- SCP to be Compliant with Rel 15.2 (UDM-UECM, UDM-SDM, NRF-Management and discovery service)
- SCP support for AUSF UE-Authentication services in Reverse Proxy and Transparent Proxy Mode
- SCP support for CHF SpendingLimitControl Service and ConvergedCharging services in Reverse Proxy and Transparent Proxy Mode
- SCP Audit to support Discovery service in Audit
- SCP Reverse Proxy Support for PCF SM Policy services with Rel 15.2 compatibility

Security Edge Proxy Protection (SEPP) Version 1.1

SEPP has been updated with the following enhancements:

- Support for Certificate Manager
- Support for Multiple Remote SEPPs
- SCP NF is needed for dynamic routing
- Umbrella helm chart to deploy SCP along with SEPP
- Support for GUI based configuration
- Support for Kibana dashboard

Cloud Native Environment (CNE) Version 1.2.0

CNE has been updated with the following enhancements:

- DB Tier Monitoring Service – Phase 1. Import of metrics from MySQL nodes into cluster.
- Automation of DB Tier Deployment. Ansible and kickstart files for constructing necessary interfaces, bridges, and VM deployment.
- Interim Egress Gateway
 - NAT worker nodes at ToR
 - Service pod connects with private source IP instead of with External Loadbalancer IP
- OS Logging and Alerts
 - CPU metric data and alerts
 - Filesystem utilization and alerts

Network Repository Function (NRF) Version 1.2

NRF has been updated with the following enhancements:

- Network Function Screening – will screen the incoming service operations from Network Functions on the basis of rules configured within NRF
- Configuration Microservice – application configuration data that can be changed dynamically by the user. Supports the Swagger UI.

Service Communication Proxy (SCP) Version 1.2.1

SCP has been updated with the following enhancements:

- 3GPP 15.2.0 release compliant for SMF
- Reverse Proxy Mode Routing Support for SMF PDU Session Service
- Transparent Proxy Mode Routing Support for SMF (PDU Session and Event Exposure service)
- PATCH support enabled for Routing Options

Unified Data Repository (UDR) Version 1.2

UDR has been updated with the following enhancements:

- Schema versioning
- Cross-reference validation of Sm data
- External service mapping to MySQL database
- Subscription/Notification feature
- Compliance with Release 15.3.0

Cloud Native Applications, Release 1.0 (Bug 29028610)

The cloud native environment is brand new to Oracle. Its debut includes each of the following network functions:

OC-CNE Version 1.0

OC-CNE 1.0 is an on-premises cloud native environment comprised of a collection of services sponsored by the CNCF¹ that delivers a common mechanism for the operation and maintenance of applications. This includes the following categories:

- Runtime services (container management and networking)
- Orchestration and management services
- Storage services
- Security services
- Observability services (logging, tracing, and metrics)
- DevOps services (continuous integration and continuous deployment automation) - not in release 1.0

Here is a list of OC-CNE 1.0 services:

- Support CNE on top of bare metal infrastructure
- Support CGBU 5G NF deployments, scaling, and un-deployment use cases
- Provide common services for all 5G NFs (metrics, logging and tracing)
- Installation of DB tier for configuration storage
- Basic security for OL, Kubernetes, IP layer, and DB storage

Network segregation for OAM and Signaling traffic

¹ CNCF is an open source software foundation dedicated to making cloud native computing universal and sustainable.

Unified Data Repository

Oracle 5G Unified Data Repository (UDR), implemented as cloud native function, offers a unified database for storing application, subscription, authentication, service authorization, policy data, session binding, and application state information. The 5G UDR is a key component of the 5G service-based architecture and provides an HTTP/2 RESTful interface for other network functions (NFs) and provisioning clients to access the data. Other advantages of Oracle's 5G UDR include:

- A common Oracle Communications cloud native framework.
- Compliant with 3GPP release 15 specifications.
- Tiered architecture providing separation between the connectivity, business logic and data layers.
- MySQL NDB cluster as the backend database in the data tier.
- Registers with NRF in the 5G network, so the other NFs in the network can discover UDR through Network Repository Function.

Note: UDR supports only PCF data in this initial release.

UDSF (Unstructured Data Storage Function) is the functionality that supports storage and retrieval of unstructured data by any 5G NF. 3GPP does not define UDSF specifications. This functionality is part of Oracle's 5G UDR solution.

For more information, refer to *Unified Data Repository User's Guide* under DSR Cloud Native documents on OHC.

Network Repository Function

The Network Repository Function (NRF) is a key component of the 5G service-based architecture. The NRF maintains an updated repository of all the 5G elements available in the operator's network along with the services provided by each of the elements in the 5G core that are expected to be instantiated, scaled, and terminated without, or have minimal, manual intervention. In addition to serving as a repository of the services, the NRF also supports discovery mechanisms that allow 5G elements to discover each other and get an updated status of the desired elements.

The NRF supports the following functions:

- Maintains the profiles of the available NF instances and their supported services in the 5G core network.
- Allows consumer NF instances to discover other provider's NF instances in the 5G core network.
- Allows NF instances to track the status of other NF instances.

For more information, refer to *Network Repository Function User's Guide* under DSR Cloud Native documents on OHC.

Inter-Working Function (Bug 28374407)

The Oracle 5G Inter-Working Function (IWF) is deployed as an independent network function in the 5G core network or as part of the Oracle 5G core NF including the NRF, Security Edge Protection Proxy (SEPP), and Service Communication Proxy (SCP) as an independent micro service

The key capabilities of the IWF include:

Protocol Translation:

- Allows the 5GC NF to interwork with the EPC network elements
- Supports Diameter to HTTP/2 protocol conversion capabilities

Message Mediation:

- Allows API transformation to resolve inter-NF inter-operational issues
- Allows users to create policy rules to execute mediation transformation

For more information, refer to *Inter-Working Function User's Guide* under DSR Cloud Native documents on OHC.

Binding Support Function

The Binding Support Function allows Policy Control Function (PCF) to register, update, and remove the binding information from it; and allows NF consumers to discover the selected Policy Control Function.

The Binding Support Function stores the binding information for a certain Protocol Data Unit (PDU) sessions and discovers the selected PCF according to the binding information. It also acts as Diameter proxy agent or Diameter redirect agent to Rx requests targeting an IP address of the User Equipment (UE) to the selected PCF.

For any application function using Rx, such as P-CSCF, the Binding Support Function determines the selected PCF address according to the information carried by the incoming Rx requests.

For more information, refer to *Binding Support Function User's Guide* under DSR Cloud Native documents on OHC.

Service Communication Proxy

The core network in 5G follows a Service Based Architecture where network elements advertise and provide services that can be consumed using REST APIs by other elements in the core. This allows for the adoption of web-scale technologies and software that are used by different organizations in telecom networks. Web-scale technologies rely primarily on open source software and bring in a significant amount of automation, prominently in the deployment and operational aspects. To resolve issues such as Congestion Control, Traffic Prioritization, Overload Control, Optimized Routing, several software solutions, referred to as service mesh, are being developed as

part of web-scale technologies. However, these solutions are based on information elements present in messages below the telecom layer and hence not telecom aware.

The Oracle Communications Service Communication Proxy brings telecom awareness to the service mesh and helps resolve the above-mentioned issues in the 5G core network.

For more information, refer to *Service Communication Proxy User's Guide* under DSR Cloud Native documents on OHC.

Network Exposure Function

The Network Exposure Function (NEF) is a functional element that supports the following functionalities:

- Securely exposes network capabilities and events provided by 3GPP NFs to application function (AF).
- Provides a means for the AF to securely provide information to 3GPP network and may authenticate, authorize, and assist in throttling the AF.
- Translates the information between the AF and internal 3GPP NFs.
- Exposes information collected from other 3GPP NFs to the AF.
- Supports a Packet Flow Description (PFD) Function, which allows the AF to provision PFDs and may store and retrieve PFDs in the UDR. The NEF further provisions PFDs to the Session Management Function.

A specific NEF instance may support one or more of the functionalities described and, consequently, an individual NEF may support a subset of the APIs specified for capability exposure.

For more information, refer to *Network Exposure Function User's Guide* under DSR Cloud Native documents on OHC.

Security Edge Proxy Protection

Security Edge Protection Proxy (SEPP) is a proxy network functional element used for secured communication between inter-PLMN network messages.

For more information, refer to *Security Edge Protection Proxy User's Guide* under DSR Cloud Native documents on OHC.

Network Slice Selection Function

The Network Slice Selection Function (NSSF) is a functional element that supports these functionalities:

- The Access and Mobility Management Function (AMF) performs initial registration and protocol data unit (PDU) session establishment.

- Using the Network Slicing Instance (NSI), NSSF determines the authorized Network Slice Selection Assistance Information (NSSAI) and AMF to serve the UE AMF, which can retrieve the NRF, NSI ID, and target AMFs as part of UE initial registration and PDU establishment procedure.
- Interaction with NRF to retrieve specific NF services to use for registration requests.

For more information, refer to *Network Slice Selection Function User's Guide* under DSR Cloud Native documents on OHC.

Cloud Native DRA

The Cloud Native Diameter Routing Agent (CnDRA) is a Diameter Routing solution for the Cloud Native Environment.

CNDRA supports the following functionalities:

- Initial topology deployment using Helm Job.
- Monitoring, Auditing and Configuration of overseer and dra pod through Keeper Service.
- MMI support for Diameter configuration.
- Observing capability through CNE infrastructure component, such as EFK.
- Support Initiator, Responder connection over TCP.
- Support for responder connection to be established on any dra pod in the topology.
- Application metrics presentation using Prometheus.
- Visualization of time series data for infrastructure and application analytics using Grafana.
- Incoming connection requests from peer's gets distributed using MetalLB (Cluster level) and subsequently by Kube-proxy (Node level) to a dra pod in the topology.
- Initiator connection distribution support using round-robin mechanism to one of the dra pods available in the topology.
- Initiator connections from same peer is distributed among different dra pods.
- Inter dra pod communication over TCP connection for signaling message.

Chapter 3:

Media and Documentation

Topics:

Media Pack

DSR Release 8.4.0.6.0
DSR Release 8.4.0.5.0
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Documentation Pack

Oracle Communications software is available for electronic download on the Oracle Software Delivery Cloud (OSDC). Documentation is delivered electronically on the Oracle Help Center (OHC). Both the software Media Pack and Documentation Pack are listed in this chapter.

Media Pack

All components available for download from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com/>) are in Table 7: Media Pack Contents.

Note: This list is accurate at the time of release but is subject to change. See the Oracle software delivery website for the latest information.

DSR Release 8.4.0.6.0

Table 2: Media Pack Contents for DSR Release 8.4.0.6.0

Part Number	Description
V997933-01	Oracle Communications Diameter Signaling Router 8.4.0.6.0_89.8.0
V997934-01	Oracle Communications Diameter Signaling Router 8.4.0.6.0_89.8.0 OVA
V997939-01	Oracle Communications Diameter Signaling Router Virtual Network Function Manager 4.4.0.0.0_44.5.0 QCOW2
V997942-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.6.0_89.8.0
V997943-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.6.0_89.8.0 OVA
V997940-01	Oracle Communications Diameter Signaling Router Diameter Security Application 8.4.0.6.0_89.8.0
V997935-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.6.0_89.8.0
V997936-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.6.0_89.8.0 OVA
V997944-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway Database 7.6.8 QCOW2

DSR Release 8.4.0.5.0

Table 3: Media Pack Contents for DSR Release 8.4.0.5.0

Part Number	Description
V997933-01	Oracle Communications Diameter Signaling Router 8.4.0.5.0_88.9.1
V997934-01	Oracle Communications Diameter Signaling Router 8.4.0.5.0_88.9.1 OVA
V997941-01	Oracle Communications Diameter Signaling Router Automated Test Suite ATS-8.4.0.5.0-84.15.0

Part Number	Description
V997939-01	Oracle Communications Diameter Signaling Router Virtual Network Function Manager 4.4.0.0.0_44.5.0 QCOW2
V997942-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.5.0_88.9.1
V997943-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.5.0_88.9 OVA
V997938-01	Oracle Communications User Data Repository 12.6.0.0.0_18.4.0 OVA
V997945-01	Oracle Communications User Data Repository Provisioning Gateway 12.6.0.0.0_1.0.0
V997937-01	Oracle Communications User Data Repository 12.6.0.0.0_18.4.0
V997940-01	Oracle Communications Diameter Signaling Router Diameter Security Application 8.4.0.5.0_88.9.0
V997935-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.5.0_88.9.0
V997936-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.5.0_88.9.0 OVA
V997944-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway Database 7.6.8 QCOW2

DSR Release 8.4.0.4.0

Note: The DSR Release 8.4.0.4.0 media package is released on MOS. Contact My Oracle Support (MOS) to raise a service ticket to download the package.

Table 4: Media Pack Contents for DSR Release 8.4.0.4.0

Part Number	Description
Posted on MOS	Oracle Communications Diameter Signaling Router 8.4.0.4.0_87.1.0
Posted on MOS	Oracle Communications Diameter Signaling Router 8.4.0.4.0_87.1.0 OVA
Posted on MOS	Oracle Communications Diameter Signaling Router Automated Test Suite 8.4.0.4.0-84.12.0
Posted on MOS	Oracle Communications Diameter Signaling Router Virtual Network Function Manager 4.3.0.0.0_43.8.0 QCOW2
Posted on MOS	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.4.0_87.1.0
Posted on MOS	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.4.0_87.1.0 OVA

DSR Release 8.4.0.3.0

Table 5: Media Pack Contents for DSR Release 8.4.0.3.0

Part Number	Description
V984533-01	Oracle Communications Diameter Signaling Router 8.4.0.3.0-85.17.0 MIBS
V984526-01	Oracle Communications Diameter Signaling Router 8.4.0.3.0-85.17.0
V984528-01	Oracle Communications Diameter Signaling Router 8.4.0.3.0-85.17.0 OVA
V984531-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.3.0-85.17.0
V984532-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.3.0-85.17.0 OVA
V984517-01	Oracle Communications Diameter Signaling Router Virtual Network Function Manager 4.1.2.0.0-41.6.1 QCOW2
V984529-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.3.0-85.17.0
V984530-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.3.0-85.17.0 OVA
V984444-01	Oracle Communications User Data Repository 12.5.2.0.0-17.14.0
V984447-01	Oracle Communications User Data Repository 12.5.2.0.0-17.14.0 OVA
V984451-01	Oracle Communications 5G Unified Data Repository (UDR) 1.3.0.0.0
V984332-01	Oracle Communications Tekelec Platform Distribution 7.6.2.0.0-88.58.0
V984443-01	Oracle Communications Tekelec Virtual Operating Environment 3.6.2.0.0-88.58.0
V981810-01	Tekelec Platform Management and Configuration 6.6.1.0.0-66.9.0

DSR Release 8.4.0.2.0

Note: The DSR Release 8.4.0.2.0 media package is released on MOS. Contact My Oracle Support (MOS) to raise a service ticket to download the package.

Table 6: Media Pack Contents for DSR Release 8.4.0.2.0

Part Number	Description
Posted on MOS	Oracle Communications Diameter Signaling Router 8.4.0.2.0_84.28.0 MIBS
Posted on MOS	Oracle Communications Diameter Signaling Router 8.4.0.2.0_84.28.0
Posted on MOS	Oracle Communications Diameter Signaling Router 8.4.0.2.0_84.28.0OVA

Part Number	Description
Posted on MOS	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.2.0_84.28.0
Posted on MOS	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.2.0_84.28.0
Posted on MOS	Oracle Communications Diameter Signaling Router Virtual Network Function Manager 8.4.0.2.0_84.28.0 QCOW2
Posted on MOS	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.2.0_84.28.0
Posted on MOS	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.2.0_84.28.0 OVA
Posted on MOS	Oracle Communications Tekelec Platform Distribution 7.6.2.0.0-88.55.0
Posted on MOS	Oracle Communications Tekelec Virtual Operating Environment 3.6.2.0.0-88.55.0
Posted on MOS	Tekelec Platform Management and Configuration 6.6.1.0.0-66.9.0

DSR Release 8.4.0.0.0

Table 7: Media Pack Contents for DSR Release 8.4.0.0.0

Part Number	Description
V981899-01	<p>Oracle Communications Diameter Signaling Router 8.4.0.0.0.0_84.15.0 MIBS</p> <p>The Media Pack covers the following MIB information:</p> <ul style="list-style-type: none"> DSRmib-8.4.0.0.0_84.15.0.zip includes EAGLEXGDSR-MIB.mib and EAGLEXGDSR-TC.mib. PMACmib-6.6.1.0.0_66.9.0.zip includes pmacAppAlarms.mib. SDSmib-8.4.0.0.0_84.15.0.zip includes SDS-MIB.mib and SDS-TC.mib. TPDmib-7.6.1.0.0_88.55.0.zip includes batm_switch.mib, batm_sys_mon.mib, cpqhost.mib, cpqida.mib, priv_vend_def.mib, tklc_toplevel.mib, tklc_tpdAlarms.mib, tklc_tpdCardCfg.mib, tklc_tpdCommonObjects.mib, tklc_tpdDiskAlias.mib, and tklc_tpdDiskStats.mib. TVOEmib-3.6.1.0.0_88.55.0.zip includes tklc_TVOEalarms.mib. TVOE: 3.6.2.0.0_88.58.0 IDIHmib-8.2.1.0.0_82.23.0.zip includes NSP-FORWARDING_IDIH_8.2.1.0.0_82.23.0-MIB.mib IDIHmib-8.2.2.0.0_82.32.0.zip includes NSP-FORWARDING_IDIH_8.2.2.0.0_82.32.0-MIB.mib

Part Number	Description
V981873-01	Oracle Communications Diameter Signaling Router 8.4.0.0.0_84.15.0
V981874-01	Oracle Communications Diameter Signaling Router 8.4.0.0.0_84.15.0 OVA
V981897-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.0.0-84.16.0
V981898-01	Oracle Communications Diameter Signaling Router Application Programming Interface Gateway 8.4.0.0.0-84.16.0 OVA
V981935-01	Oracle Communications Diameter Signaling Router Automated Test Suite (ATS) 8.4.0.0.0_84.2.0
V981877-01	Oracle Communications Diameter Signaling Router Diameter Security Application 8.4.0.0.0-84.15.0
V981876-01	Oracle Communications Diameter Signaling Router Steering Of Roaming Application 8.4.0.0.0_84.15.0
V981936-01	Oracle Communications Diameter Signaling Router Virtual Network Function Manager 3.0.0.0-30.11.0
V981875-01	Oracle Communications Diameter Signaling Router Zero Balance Application 8.4.0.0.0_84.15.0
V981878-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.0.0_84.14.0
V981879-01	Oracle Communications Diameter Signaling Router, Full Address Resolution 8.4.0.0.0_84.14.0 OVA
V981896-01	Oracle Communications User Data Repository 12.5.1.0.0-17.8.0
V981895-01	Oracle Communications User Data Repository 12.5.1.0.0-17.8.0 OVA
V979981-01	Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.1.0.0-82.23.0
V979985-01	Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.1.0.0-82.23.0 OVA
V979983-01	Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.1.0.0-82.23.0
V979987-01	Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.1.0.0-82.23.0 OVA
V979984-01	Oracle Communications Integrated Diameter Intelligence Hub Database TVOEGuest 8.2.1.0.0-82.23.0
V979982-01	Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.1.0.0-82.23.0
V979986-01	Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.1.0.0-82.23.0 OVA
V981809-01	Oracle Communications Tekelec Platform Distribution 7.6.1.0.0_88.55.0

Part Number	Description
V981810-01	Oracle Communications Tekelec Platform Management and Configuration 6.6.1.0.0_66.9.0
V981808-01	Oracle Communications Tekelec Virtual Operating Environment 3.6.1.0.0_88.55.0
V984867-01	Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.2.0.0-82.32.0
V984871-01	Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.2.0.0-82.32.0 OVA
V984869-01	Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.2.0.0-82.32.0
V984873-01	Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.2.0.0-82.32.0 OVA
V984870-01	Oracle Communications Integrated Diameter Intelligence Hub Database TVOEGuest 8.2.2.0.0-82.32.0
V984868-01	Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.2.0.0-82.32.0
V984872-01	Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.2.0.0-82.32.0 OVA
V984332-01	Oracle Communications Tekelec Platform Distribution 7.6.2.0.0_88.58.0
V981810-01	Oracle Communications Tekelec Platform Management and Configuration 6.6.1.0.0_66.9.0
V984443-01	Oracle Communications Tekelec Virtual Operating Environment 3.6.2.0.0_88.58.0

Cloud Native Release 1.2

Table 8: Media Pack Contents for Cloud Native Release 1.2

Part Number	Description
V983621-01	Oracle Communications Cloud Native Environment 1.2.0.0.0
V983622-01	Oracle Communications 5G Network Repository Function (NRF) 1.2.0.0.0
V983623-01	Oracle Communications 5G Service Communication Proxy (SCP) 1.2.1.0.0
V983624-01	Oracle Communications 5G Service Communication Proxy (SCP) 1.2.1.0.0 MIBs
V983625-01	Oracle Communications 5G Unified Data Repository (UDR) 1.2.0.0.0

Cloud Native Release 1.1

Table 9: Media Pack Contents for Cloud Native Release 1.1

Part Number	Description
V982797-01	Oracle Communications Cloud Native Environment 1.1.0.1.0
V982794-01	Oracle Communications 5G Network Repository Function (NRF) 1.1.0.0.0
V982796-01	Oracle Communications 5G Service Communication Proxy (SCP) 1.1.0.0.0
V982795-01	Oracle Communications 5G Security Edge Protection Proxy (SEPP) 1.1.0.0.0

Cloud Native Release 1.0

Table 10: Media Pack Contents for Cloud Native Release 1.0

Part Number	Description
V981963-01	Oracle Communications 5G Binding Support Function (BSF) 1.0.0.0.0
V981934-01	Oracle Communications 5G Inter-Working Function (IWF) 1.0.0.0.0
V981933-01	Oracle Communications 5G Network Exposure Function (NEF) 1.0.0.0.0
V981881-01	Oracle Communications 5G Network Repository Function (NRF) 1.0.0.0.0
V981880-01	Oracle Communications 5G Network Slice Selection Function (NSSF) 1.0.0.0.0
V981941-01	Oracle Communications 5G Security Edge Protection Proxy (SEPP) 1.0.0.0.0
V981890-01	Oracle Communications 5G Service Communication Proxy (SCP) 1.0.0.0.0
V981900-01	Oracle Communications 5G Unified Data Repository (UDR) 1.0.0.0.0
V981937-01	Oracle Communications Cloud Native Diameter Routing Agent 1.0.0.0.0
V982382-01	Oracle Communications Cloud Native Environment 1.0.1.0.0

Load Line Up

DSR Release 8.4.0.6.0

DSR Release 8.4.0.6.0 contains the following components:

- Application Line Up
 - DSR: 8.4.0.6.0_89.8.0
 - SDS: 8.4.0.6.0_89.8.0
 - DSRAPIGW: 8.4.0.6.0_89.8.0

- VNFM: 4.5.0.0.0_45.5.0
- Platform Line Up
 - TPD: 7.6.2.0.0-88.58.0
 - TVOE: 3.6.2.0.0-88.58.0
 - PMAC: 6.6.1.0.0-66.9.0
 - Comcol: 7.5.0.15.0-14027
 - Appw: 8.7.0-87.6.0
 - Exgs: 8.7.0-87.6.0

DSR Release 8.4.0.5.0

DSR Release 8.4.0.5.0 contains the following components:

- Application Line Up
 - DSR: 8.4.0.5.0_88.9.1
 - SDS: 8.4.0.5.0_88.9.1
 - DSRAPIGW: 8.4.0.5.0_88.9.1
 - VNFM: 4.5.0.0.0_45.5.0
 - ATS 8.4.0.5.0-84.15.0
 - UDR: 12.6.0.0.0-18.4.0
- Platform Line Up
 - TPD: 7.6.2.0.0-88.58.0
 - TVOE: 3.6.2.0.0-88.58.0
 - PMAC: 6.6.1.0.0-66.9.0
 - Comcol: 7.5.0.15.0-14027
 - Appw: 8.7.0-87.6.0
 - Exgs: 8.7.0-87.6.0

DSR Release 8.4.0.4.0

DSR Release 8.4.0.4.0 contains the following components:

- Application Line Up
 - DSR 8.4.0.4.0-87.1.0
 - SDS 8.4.0.4.0-87.1.0
 - VNFM 4.3.0.0.0_43.8.0
 - ATS 8.4.0.4.0-84.12.0
- Platform Line Up
 - TPD: 7.6.2.0.0-88.58.0
 - TVOE: 3.6.2.0.0-88.58.0
 - PMAC: 6.6.1.0.0-66.9.0
 - Comcol:7.5.0.15.0-14027
 - Appw: 8.6.0-86.3.0
 - Exgs: 8.6.0-86.2.0

DSR Release 8.4.0.3.0

DSR Release 8.4.0.3.0 contains the following components:

- Application Line Up
 - DSR 8.4.0.0.0-84.15.0
 - SDS 8.4.0.0.0-84.15.0
 - API 8.4.0.0.0-84.16.0
 - DSRVNFM_4.1.2.0.0_41.6.1
 - UDR 12.5.1.0.0-17.8.0
- Platform Line Up
 - TPD: 7.6.1.0.0-88.55.0 (DSR/SDS/IDIH/PMAC Baseline; Oracle Linux 6.9)
 - TPD: 7.6.2.0.0_88.58.0-OracleLinux6.10-x86_64.iso (DSR/SDS/IDIH/PMAC Baseline; Oracle Linux 6.10)
 - TVOE: 3.6.1.0.0-88.55.0 (Based on qemu-kvm-0.12.1.2-2.491.el6)
 - TVOE: 3.6.2.0.0_88.58.0
 - PMAC: 6.6.1.0.0-66.9.0
 - COMCOL 7.5.0.14.0-14027
 - AppWorks Build 8.4.0-84.10.0
 - EXGSTACK Build 8.4.0-84.11.0
 - Oracle FW 3.1.7 (minimum)
 - HP FUP 2.2.12 (minimum)

- Other Items Lineup
 - WebLogic: 12c, version 12.2.1.0.0
 - Oracle Database: 12c Enterprise Edition, version 12.1.0.2.0 – 64bit Production
 - iDIH 8.2.1.0.0-82.23.0 (separate download from OSDC is required)
 - iDIH 8.2.2.0.0-82.32.0 (separate download from OSDC is required)

DSR Release 8.4.0.2.0

DSR Release 8.4.0.2.0 contains the following components:

- Application Line Up
 - DSR-8.4.0.2.0_84.28.0
 - SDS-8.4.0.2.0_84.28.0
 - DSRAPIGW-8.4.0.2.0_84.28.0
- Platform Line Up
 - TPD: 7.6.1.0.0-88.55.0
 - TVOE: 3.6.1.0.0-88.55.0
 - PMAC: 6.6.1.0.0-66.9.0
 - Comcol:7.5.0.14.0-14027
 - Appw: 8.4.0-84.14.0
 - Exgs: 8.4.0-84.14.0

DSR Release 8.4.0.0.0

DSR Release 8.4.0.0.0 contains the following components:

- Application Line Up
 - DSR 8.4.0.0.0-84.15.0
 - SDS 8.4.0.0.0-84.15.0
 - API 8.4.0.0.0-84.16.0
 - VNFM 3.0.0.0-30.11.0
 - UDR 12.5.1.0.0-17.8.0
- Platform Line Up
 - TPD: 7.6.1.0.0-88.55.0 (DSR/SDS/IDIH/PMAC Baseline; Oracle Linux 6.9)
 - TVOE: 3.6.1.0.0-88.55.0 (Based on qemu-kvm-0.12.1.2-2.491.el6)
 - PMAC: 6.6.1.0.0-66.9.0
 - COMCOL 7.5.0.14.0-14027

- AppWorks Build 8.4.0-84.10.0
- EXGSTACK Build 8.4.0-84.11.0
- Oracle FW 3.1.7 (minimum)
- HP FUP 2.2.12 (minimum)
- Other Items Lineup
 - WebLogic: 12c, version 12.2.1.0.0
 - Oracle Database: 12c Enterprise Edition, version 12.1.0.2.0 – 64bit Production
 - iDIH 8.2.1.0.0-82.23.0 (separate download from OSDC is required)
 - iDIH 8.2.2.0.0-82.32.0 (separate download from OSDC is required)

Cloud Native Release 1.2

The Load Line Up for Cloud Native Release 1.2.0.0.0 is:

- Cloud Native Environment (CNE), version 1.2
- Cloud Native Diameter Routing Agent (cnDRA), version 1.0
- Binding Support Function (BSF), version 1.0
- Inter-Working Function (IWF), version 1.0
- Network Exposure Function (NEF), version 1.0
- Network Repository Function (NRF), version 1.2
- Network Slice Selection Function (NSSP), version 1.0
- Service Communication Proxy (SCP), version 1.2.1
- Security Edge Proxy Protection (SEPP), version 1.1
- Unified Data Repository (UDR), version 1.2

Cloud Native Release 1.1

The Load Line Up for Cloud Native Release 1.1.0.0.0 is:

- Cloud Native Environment (CNE), version 1.1.0.1
- Cloud Native Diameter Routing Agent (cnDRA), version 1.0
- Binding Support Function (BSF), version 1.0
- Inter-Working Function (IWF), version 1.0
- Network Exposure Function (NEF), version 1.0
- Network Repository Function (NRF), version 1.1
- Network Slice Selection Function (NSSP), version 1.0

- Service Communication Proxy (SCP), version 1.1
- Security Edge Proxy Protection (SEPP), version 1.1
- Unified Data Repository (UDR), version 1.0

Cloud Native Release 1.0

Cloud Native Release 1.0.0.0.0 contains the following components:

- Binding Support Function
- Inter-Working Function
- Network Exposure Function
- Network Repository Function
- Network Slice Selection Function
- Security Edge Proxy Protection
- Service Communication Proxy
- Unified Data Repository
- Native Diameter Routing Agent
- Cloud Native Environment

Documentation Pack

All documents available for download from the [Oracle Help Center \(OHC\)](#) site (.

Table 11: Documentation Pack Contents

Release Notices and Licensing Information User Manuals Document Set
DSR 8.4 Release Notice
DSR 8.4 Licensing Information User Manual
DSR Planning, Installation, Upgrade, and Disaster Recovery Document Set
DSR Feature Guide
DSR Planning Guide
DSR C-Class Hardware and Software Installation Procedure 1/2
DSR C-Class Software Installation and Configuration Procedure 2/2
DSR Software Upgrade Guide
Rack Mount Server Installation Guide
Rack Mount Server Disaster Recovery Guide

Rack Mount Server Network Interconnect	
DSR C-Class Disaster Recovery User's Guide	
DSR/SDS Failover User's Guide	
DCA Feature Activation Procedure	
DTLS Feature Activation Procedure	
FABR Feature Activation Procedure	
Mediation Feature Activation Procedure	
PCA Feature Activation Procedure	
RBAR Feature Activation Procedure	
SCEF Feature Activation Procedure	
DSR Security App Using Mediation Example Procedure	
DSR Network Impact Report	
DSR Compliance Matrix	
Zero Balance Application User's Guide	
DSR VM Placement and CPU Socket Pinning Tool	
DSR VNF HEAT Templates	
DSR Security Guide	
Diameter Security Application with USBR User's Guide (added in 8.4.0.5.0)	
DSR Automated Test Suite (ATS) Installation and User Guide	
Cloud Installation and Upgrade Document Set	
DSR Cloud Installation Guide	
DSR Cloud Software Upgrade Guide	
DSR Cloud Disaster Recovery Guide	
DSR API Gateway Installation Guide	
DSR API Gateway Disaster Recovery Guide	
DSR VNFM Installation and User Guide	
VNFM HEAT Templates	
DSR Cloud Benchmarking Guide	
SDS Cloud Installation Guide	
SDS Cloud Disaster Recovery Guide	
SDS Installation and Configuration Guide	
Diameter Signaling Router Core Document Set	
Glossary	

DSR Getting Started
Roadmap to Hardware Documentation Reference
Operation, Administration, and Maintenance (OAM) User's Guide
Diameter User's Guide
Mediation User's Guide
Policy Charging Application User's Guide
Subscriber Binding Repository (SBR) User's Guide
Measurements Reference
Alarms and KPIs Reference
Communication Agent User's Guide
Range Based Address Resolution (RBAR) User's Guide
Full Address Based Resolution (FABR) User's Guide
MMI API Specification
IP Front End (IPFE) User's Guide
SCEF User's Guide
SCEF - YAML Files
DSR SCEF Partner's User's Guide
Virtual Equipment Identity Register (vEIR) User's Guide
Mobile Number Portability (MNP) User's Guide
Diameter Common User's Guide
Diameter Custom Application (DCA) User's Guide
Diameter Custom Application (DCA) Programmer's Guide
Roaming Steering Application User's Guide
Related Publications Reference
vSTP User's Manual
vSTP TDM Installation Manual
Subscriber Data Server Document Set
Getting Started
User's Guide
SDS Provisioning Interface Guide
UDR Installation, Upgrade, and Disaster Recovery Document Set
UDR Cloud Installation and Configuration Guide
UDR Heat Templates
Provisioning Gateway Heat Templates
UDR Cloud Disaster Recovery Guide

UDR Software Upgrade Procedure
UDR Bulk Import/Export File Specification
UDR SOAP Provisioning Interface Specification
UDR REST Provisioning Interface Specification
Provisioning Gateway Installation Guide
Cloud Native Installation Document Set
CNE Installation Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Cloud Native DRA (cnDRA) Installation Guide
Binding Support Function (BSF) Installation and Upgrade Guide
Inter-Working Function (IWF) Installation Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Network Exposure Function (NEF) Installation and Upgrade Guide
Network Repository Function (NRF) Installation and Upgrade Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Network Slice Selection Function (NSSF) Installation Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Service Communication Proxy (SCP) Installation Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Security Edge Proxy Protection (SEPP) Installation Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Unified Data Repository (UDR) Installation and Upgrade Guide and ZIP file containing Grafana dashboard JSON file and Alert configuration file
Cloud Native Core Document Set
Binding Support Function (BSF) User's Guide
Inter-Working Function (IWF) User's Guide
Network Repository Function (NRF) User's Guide
Network Slice Selection Function (NSSF) User's Guide
Service Communication Proxy (SCP) User's Guide
Security Edge Proxy Protection (SEPP) User's Guide
Unified Data Repository (UDR) User's Guide
Integrated Diameter Intelligence Hub (IDIH) Document Set for 8.2.1 and 8.2.2*
IDIH 8.2.2 Release Notice
IDIH User's Guide
IDIH Alarm Forwarding Administrator's Guide
IDIH Audit Viewer Administrator's Guide

IDIH Operations, Administration and Maintenance Administrator's Guide
IDIH ProTrace User's Guide
IDIH Log Viewer Administrator's Guide

*Previous versions of iDIH do not work with DSR Release 8.4. Release of iDIH versions 8.2.1 and 8.2.2 can be downloaded from the Oracle Software Delivery Cloud (<https://edelivery.oracle.com/>).

Chapter 4:

Supported Hardware Baseline

Topics:

Supported Hardware Baseline
Oracle Hardware
HP Hardware

The Hardware identified in Table 12: Supported Hardware Baseline comprises the hardware and server versions that have been verified with this release.

Supported Hardware Baseline

Table 12: Supported Hardware Baseline

Hardware	Description
HP Gen8	Intel Sandy Bridge CPU-based dual-socket blades and rack mount servers manufactured by HP
HP Gen9	Intel Haswell CPU-based dual-socket blades and rack mount servers manufactured by HP
HP Gen9 v2	Intel Haswell CPU-based dual-socket blades and rack mount servers manufactured by HP
Netra X5-2	Intel Haswell CPU-based dual-socket rack mount servers manufactured by Oracle
Oracle X5-2	Intel Haswell CPU-based dual-socket rack mount servers manufactured by Oracle
Oracle X6-2	Intel Haswell CPU-based dual-socket rack mount servers manufactured by Oracle
Oracle X7-2	Intel Haswell CPU-based dual-socket rack mount servers manufactured by Oracle

The following section lists the Oracle and HP hardware Bill of Material (BOM) information.

Oracle Hardware

Oracle X7-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
X7-2 AC Copper for Production				
7117671		ORACLE X7-2 AC Copper for Production		1
7115194	Oracle	7115194	Oracle Server X7-2: 1 RU base chassis with motherboard, eight 2.5-inch drive slots disk cage, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	1 Intel® Xeon® Platinum 8160 24-core 2.1 GHz processor (for factory installation)	2
7115198	Oracle	7115198	One 16 GB DDR4-2666 registered DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4

Oracle X7-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7117125	Oracle	7117125	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 16 port and 2 GB memory (for factory installation)	1
7111182	Oracle	7111182	Oracle Quad Port 10GBase-T Adapter (for factory installation)	1
333W-10-13-C14RA	Oracle	333W-10-13-C14RA	Power cord: Sun Rack jumper, 1 meter, C14RA plug, C13 connector, 13 A (for factory installation)	2
7115197	Oracle	7115197	Short heat sink (for factory installation)	2
6331A-N	Oracle	6331A-N	2.5-inch HDD filler panel (for factory installation)	6
7102748	Oracle	7102748	PCIe filler panel (for factory installation)	2
7116456	Oracle	7116456	Processor clip (for factory installation)	2
7117386	Oracle	7117386	SAS cables for 1U (for factory installation)	1
X7-2 AC Copper for Lab (Non-High Available)				
7117671		ORACLE X7-2 AC Copper for Production		1
7115194	Oracle	7115194	Oracle Server X7-2: 1 RU base chassis with motherboard, eight 2.5-inch drive slots disk cage, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	1 Intel® Xeon® Platinum 8160 24-core 2.1 GHz processor (for factory installation)	2
7115198	Oracle	7115198	One 16 GB DDR4-2666 registered DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
7117125	Oracle	7117125	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 16 port and 2 GB memory (for factory installation)	1
7111182	Oracle	7111182	Oracle Quad Port 10GBase-T Adapter (for factory installation)	1
333W-10-13-C14RA	Oracle	333W-10-13-C14RA	Power cord: Sun Rack jumper, 1 meter, C14RA plug, C13 connector, 13 A (for factory installation)	2
7115197	Oracle	7115197	Short heat sink (for factory installation)	2
6331A-N	Oracle	6331A-N	2.5-inch HDD filler panel (for factory installation)	6
7102748	Oracle	7102748	PCIe filler panel (for factory installation)	2

Oracle X7-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7116456	Oracle	7116456	Processor clip (for factory installation)	2
7117386	Oracle	7117386	SAS cables for 1U (for factory installation)	1
X7-2 AC Fiber for Production				
7117671		ORACLE X7-2 AC Copper for Production		1
7115194	Oracle	7115194	Oracle Server X7-2: 1 RU base chassis with motherboard, eight 2.5-inch drive slots disk cage, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	1 Intel® Xeon® Platinum 8160 24-core 2.1 GHz processor (for factory installation)	2
7115198	Oracle	7115198	One 16 GB DDR4-2666 registered DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
7117125	Oracle	7117125	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 16 port and 2 GB memory (for factory installation)	1
7111182	Oracle	7111182	Oracle Quad Port 10GBase-T Adapter (for factory installation)	1
333W-10-13-C14RA	Oracle	333W-10-13-C14RA	Power cord: Sun Rack jumper, 1 meter, C14RA plug, C13 connector, 13 A (for factory installation)	2
7115197	Oracle	7115197	Short heat sink (for factory installation)	2
6331A-N	Oracle	6331A-N	2.5-inch HDD filler panel (for factory installation)	6
7102748	Oracle	7102748	PCIe filler panel (for factory installation)	2
7116456	Oracle	7116456	Processor clip (for factory installation)	2
7117386	Oracle	7117386	SAS cables for 1U (for factory installation)	1
2124A	Oracle	2124A	QSFP Optical SR (for factory installation)	4
X7-2 AC Fiber for Lab (Non-High Available)				
7117671		ORACLE X7-2 AC Copper for Production		1
7115194	Oracle	7115194	Oracle Server X7-2: 1 RU base chassis with motherboard, eight 2.5-inch drive slots disk cage, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1

Oracle X7-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7113235	Oracle	7113235	1 Intel® Xeon® Platinum 8160 24-core 2.1 GHz processor (for factory installation)	2
7115198	Oracle	7115198	One 16 GB DDR4-2666 registered DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
7117125	Oracle	7117125	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 16 port and 2 GB memory (for factory installation)	1
7111182	Oracle	7111182	Oracle Quad Port 10GBase-T Adapter (for factory installation)	1
333W-10-13-C14RA	Oracle	333W-10-13-C14RA	Power cord: Sun Rack jumper, 1 meter, C14RA plug, C13 connector, 13 A (for factory installation)	2
7115197	Oracle	7115197	Short heat sink (for factory installation)	2
6331A-N	Oracle	6331A-N	2.5-inch HDD filler panel (for factory installation)	6
7102748	Oracle	7102748	PCIe filler panel (for factory installation)	2
7116456	Oracle	7116456	Processor clip (for factory installation)	2
7117386	Oracle	7117386	SAS cables for 1U (for factory installation)	1
2124A	Oracle	2124A	QSFP Optical SR (for factory installation)	4

Oracle X6-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
X6-2 AC Copper for Production				
7115324		ORACLE X6-2 AC Copper for Production		1
7113252	Oracle	7113252	Oracle Server X6-2: 1 RU base chassis with motherboard, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	One Intel® Xeon® E5-2699 v4 22 core 2.2 GHz processor (for factory installation)	2
7110350	Oracle	7110350	Heat sink for 1U (for factory installation)	2
7100563	Oracle	7100563	Sun Dual Port 10GBase-T Adapter (for factory installation)	2

Oracle X6-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7113240	Oracle	7113240	One 16 GB DDR4-2400 RDIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
X6-2 AC Copper for Lab (Non-High Available)				
7115324		ORACLE X6-2 AC Copper for Lab (Non High Available)		1
7113252	Oracle	7113252	Oracle Server X6-2: 1 RU base chassis with motherboard, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	One Intel® Xeon® E5-2699 v4 22 core 2.2 GHz processor (for factory installation)	2
7110350	Oracle	7110350	Heat sink for 1U (for factory installation)	2
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7113240	Oracle	7113240	One 16 GB DDR4-2400 RDIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
X6-2 AC Fiber for Production				
7115324		ORACLE X6-2 AC Fiber for Production		1
7113252	Oracle	7113252	Oracle Server X6-2: 1 RU base chassis with motherboard, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	One Intel® Xeon® E5-2699 v4 22 core 2.2 GHz processor (for factory installation)	2
7100563	Oracle	7100563	Sun Dual Port 10GBase-T Adapter (for factory installation)	2
7110350	Oracle	7110350	Heat sink for 1U (for factory installation)	2
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7113240	Oracle	7113240	One 16 GB DDR4-2400 RDIMM (for factory installation)	16

Oracle X6-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
1109A-Z	Oracle	1109A-Z	ASSY,2X10GbE SFP+,X8PCIe 2.0,LP,Lead Free (Niantic)	2
2129A-N	Oracle	2129A-N	SR Transceiver	4

X6-2 AC Fiber for Lab (non High Available)

7115324		ORACLE X6-2 AC Fiber for Lab (Non-High Available)		1
7113252	Oracle	7113252	Oracle Server X6-2: 1 RU base chassis with motherboard, 2 PSUs, slide rail kit, and cable management arm	1
7110339	Oracle	7110339	Eight 2.5-inch drive slots, DVD-RW and disk cage for 1U	1
7113235	Oracle	7113235	One Intel® Xeon® E5-2699 v4 22 core 2.2 GHz processor (for factory installation)	2
7110350	Oracle	7110350	Heat sink for 1U (for factory installation)	2
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7113240	Oracle	7113240	One 16 GB DDR4-2400 RDIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
1109A-Z	Oracle	1109A-Z	ASSY,2X10GbE SFP+,X8PCIe 2.0,LP,Lead Free (Niantic)	2
2129A-N	Oracle	2129A-N	SR Transceiver	4

Netra X5-2 AC Power for DSR

Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
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Netra X5-2 AC Copper for Production

7112846		NETRA X5-2 AC Copper for Production		1
7111082	Oracle	7111082	Netra Server X5-2: 2 RU AC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16

Netra X5-2 AC Power for DSR				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
7100563	Oracle	7100563	Sun Dual Port 10GBase-T Adapter (for factory installation)	2
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 8 port and 1 GB memory (for factory installation)	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1
Netra X5-2 AC Copper for Lab (non HA)				
7112846		NETRA X5-2 AC Copper for Lab (Non-High Available)		1
7111082	Oracle	7111082	Netra Server X5-2: 2 RU AC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 8 port and 1 GB memory (for factory installation)	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1
Netra X5-2 AC Fiber for Production				
7112846		NETRA X5-2 AC Fiber for Production		1
7111082	Oracle	7111082	Netra Server X5-2: 2 RU AC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2

Netra X5-2 AC Power for DSR				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
1109A-Z	Oracle	1109A-Z	Sun Dual 10GbE SFP+ PCIe Low Profile Adapter	2
2129A	Oracle	2129A	Dual rate transceiver: SFP+ SR. Support 1 Gb/sec and 10 Gb/sec dual rate (for factory installation)	4
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, inter...	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1

Netra X5-2 AC Fiber for Lab (non HA)				
7112846		NETRA X5-2 AC Fiber for Lab (Non-High Available)		1
7111082	Oracle	7111082	Netra Server X5-2: 2 RU AC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
1109A-Z	Oracle	1109A-Z	Sun Dual 10GbE SFP+ PCIe Low Profile Adapter	2
2129A	Oracle	2129A	Dual rate transceiver: SFP+ SR. Support 1 Gb/sec and 10 Gb/sec dual rate (for factory installation)	4
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, inter...	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1

Netra X5-2 DC Power for DSR				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Netra X5-2 DC Copper for Production				
7112846		NETRA X5-2 DC Copper for Production		1
7111083	Oracle	7111083	Netra Server X5-2: 2 RU DC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2

Netra X5-2 DC Power for DSR				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16
7100563	Oracle	7100563	Sun Dual Port 10GBase-T Adapter (for factory installation)	2
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 8 port and 1 GB memory (for factory installation)	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1
Netra X5-2 DC Copper for Lab (non HA)				
7112846		NETRA X5-2 DC Copper for Lab (non High Available)		1
7111083	Oracle	7111083	Netra Server X5-2: 2 RU DC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 8 port and 1 GB memory (for factory installation)	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1
Netra X5-2 DC Fiber for Production				
7112846		NETRA X5-2 DC Fiber for Production		1
7111083	Oracle	7111083	Netra Server X5-2: 2 RU DC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16

Netra X5-2 DC Power for DSR				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
1109A-Z	Oracle	1109A-Z	Sun Dual 10GbE SFP+ PCIe Low Profile Adapter	2
2129A	Oracle	2129A	Dual rate transceiver: SFP+ SR. Support 1 Gb/sec and 10 Gb/sec dual rate (for factory installation)	4
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 8 port and 1 GB memory (for factory installation)	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1
Netra X5-2 DC Fiber for Lab (non HA)				
7112846		NETRA X5-2 DC Fiber for Lab (Non-High Available)		1
7111083	Oracle	7111083	Netra Server X5-2: 2 RU DC base chassis with motherboard and 8 HDDs	1
7110346	Oracle	7110346	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor (for factory installation)	2
7111036	Oracle	7111036	One 16 GB DDR4-2133 DIMM (for factory installation)	16
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
1109A-Z	Oracle	1109A-Z	Sun Dual 10GbE SFP+ PCIe Low Profile Adapter	2
2129A	Oracle	2129A	Dual rate transceiver: SFP+ SR. Support 1 Gb/sec and 10 Gb/sec dual rate (for factory installation)	4
7110116	Oracle	7110116	Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 8 port and 1 GB memory (for factory installation)	1
7111052	Oracle	7111052	OSA 8 GB USB stick (for factory installation)	1
7111049	Oracle	7111049	19-inch 4-post slide mount kit and cable management arm	1
Oracle X5-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
X5-2 AC Copper for Production				

Oracle X5-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7112829		ORACLE X5-2 AC Copper for Production		
7112843	Oracle	7112843	Oracle Server X5-2 for Communications: 1 RU base chassis with motherboard, 12 Gb SAS HBA, 2 PSUs, slide rail kit, and cable management arm	1
7110346	Oracle	7110346	ATO,E5-2699 V3,2.3G,145W,18 CORE,C-1 (SR1XD),CPU	2
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
7110353	Oracle	7110353	XATO,DIMM,16GB,DDR4,2133	16
7100563	Oracle	7100563	Sun Dual Port 10GBase-T Adapter (for factory installation)	2
7110360	Oracle	7110360	XATO,OSA 8 GB MLC USB FLASH DRIVE	1
7102748	Oracle	7102748	ATO PCIe FILLER,VENTED,LOW PROFILE	3
6331A-N	Oracle	6331A-N	ASSY,HDD,MARLIN-FILLER PANEL	6
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7110350	Oracle	7110350	XATO,HEATSINK,CPU,1U	2
7110339	Oracle	7110339	XATO,DISK_CAGE,2.5" X 8HDD	1
X5-2 AC Copper for Lab (Non-HA)				
7112829		ORACLE X5-2 AC Copper for Lab (Non-High Available)		
7112843	Oracle	7112843	Oracle Server X5-2 for Communications: 1 RU base chassis with motherboard, 12 Gb SAS HBA, 2 PSUs, slide rail kit, and cable management arm	1
7110346	Oracle	7110346	ATO,E5-2699 V3,2.3G,145W,18 CORE,C-1 (SR1XD),CPU	2
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
7110353	Oracle	7110353	XATO,DIMM,16GB,DDR4,2133	16
7110360	Oracle	7110360	XATO,OSA 8 GB MLC USB FLASH DRIVE	1
7102748	Oracle	7102748	ATO PCIe FILLER,VENTED,LOW PROFILE	3
6331A-N	Oracle	6331A-N	ASSY,HDD,MARLIN-FILLER PANEL	6
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7110350	Oracle	7110350	XATO,HEATSINK,CPU,1U	2
7110339	Oracle	7110339	XATO,DISK_CAGE,2.5" X 8HDD	1
X5-2 AC Fiber for Production				

Oracle X5-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7112829		ORACLE X5-2 AC Fiber for Production		
7112843	Oracle	7112843	Oracle Server X5-2 for Communications: 1 RU base chassis with motherboard, 12 Gb SAS HBA, 2 PSUs, slide rail kit, and cable management arm	1
7110346	Oracle	7110346	ATO,E5-2699 V3,2.3G,145W,18 CORE,C-1 (SR1XD),CPU	2
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	2
1109A-Z	Oracle	1109A-Z	ASSY,2X10GbE SFP+,X8PCIe 2.0,LP,Lead Free (Niantic)	2
2129A	Oracle	2129A	Sun 10Gbps Dual Rate SFP+ SR	4
7110353	Oracle	7110353	XATO,DIMM,16GB,DDR4,2133	16
7110360	Oracle	7110360	XATO,OSA 8 GB MLC USB FLASH DRIVE	1
7102748	Oracle	7102748	ATO PCIe FILLER,VENTED,LOW PROFILE	1
6331A-N	Oracle	6331A-N	ASSY,HDD,MARLIN-FILLER PANEL	6
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7110350	Oracle	7110350	XATO,HEATSINK,CPU,1U	2
7110339	Oracle	7110339	XATO,DISK_CAGE,2.5" X 8HDD	1
X5-2 AC Fiber for Lab (non HA)				
7112829		ORACLE X5-2 AC Fiber for Lab (Non-High Available)		
7112843	Oracle	7112843	Oracle Server X5-2 for Communications: 1 RU base chassis with motherboard, 12 Gb SAS HBA, 2 PSUs, slide rail kit, and cable management arm	1
7110346	Oracle	7110346	ATO,E5-2699 V3,2.3G,145W,18 CORE,C-1 (SR1XD),CPU	2
7111107	Oracle	7111107	One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation)	4
1109A-Z	Oracle	1109A-Z	ASSY,2X10GbE SFP+,X8PCIe 2.0,LP,Lead Free (Niantic)	2
2129A	Oracle	2129A	Sun 10Gbps Dual Rate SFP+ SR	4
7110353	Oracle	7110353	XATO,DIMM,16GB,DDR4,2133	16
7110360	Oracle	7110360	XATO,OSA 8 GB MLC USB FLASH DRIVE	1
7102748	Oracle	7102748	ATO PCIe FILLER,VENTED, LOW PROFILE	1
6331A-N	Oracle	6331A-N	ASSY,HDD,MARLIN-FILLER PANEL	6

Oracle X5-2 for DSR (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7110359	Oracle	7110359	ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U	1
7110350	Oracle	7110350	XATO,HEATSINK,CPU,1U	2
7110339	Oracle	7110339	XATO,DISK_CAGE,2.5" X 8HDD	1

HP Hardware

Gen 9 v2 Blades				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen 9 Blade v2				
		HPE BL460 Gen9 Config 1	HPE BL460 Gen9 Configuration 1	1
	Hewlett-Packard	813198-B21	HPE ProLiant BL460c Gen9 E5-v4 10Gb/20Gb FlexibleLOM Configure-to-order Blade Server	1
	Hewlett-Packard	819853-L21	HPE BL460c Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) FIO Proc Kit	1
	Hewlett-Packard	819853-B21	HPE BL460c Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) Proc Kit	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with the V4 processor only)	8
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	2
	Hewlett-Packard	684214-B21	HPE Ethernet 10Gb 2-port 560FLB Adapter (Flex LOM)	1
	Hewlett-Packard	665246-B21	HPE Ethernet 10Gb 2-port 560M Adapter	2
	Hewlett-Packard	761871-B21	HPE Smart Array P244br/1GB FBWC 12Gb 2-ports Int FIO SAS Controller	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1

Gen 9 v2 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen 9 RMS v2 Prod Server (DC)				
		HPE DL380 Gen9 v2 DC	OCDSR Configuration 1	1
	Hewlett-Packard	719064-B21	HPE ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	817951-L21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	817951-B21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with V4 processor only)	16
	Hewlett-Packard	749974-B21	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HPE Ethernet 10Gb Dual Port 560SFP+ Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	2
	Hewlett-Packard	720480-B21	HPE 800 W Flex Slot-48VDC Hot Plug Power Supply Kit	2
	Hewlett-Packard	512485-B21	HPE iLO Advanced including 1yr 24x7 Technical Support	1
	Hewlett-Packard	720863-B21	HPE 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HPE DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HPE DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HPE DL380 Gen9 High Performance Fan Kit	1

Gen 9 v2 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	J6X43A	HPE 12AWG PWR-48V DC 3.0m Crd (DC Power Cable two required)	2
Gen 9 v2 RMS non High Available (for Lab) Server (DC)				
		HPE DL380 Gen9 v2 DC	OCDSR Configuration 2 Non HA for Lab	1
	Hewlett-Packard	719064-B21	HPE ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	817951-L21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	817951-B21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with V4 processor only)	16
	Hewlett-Packard	749974-B21	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HPE Ethernet 10Gb Dual Port 560SFP+ Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	4
	Hewlett-Packard	720480-B21	HPE 800 W Flex Slot-48VDC Hot Plug Power Supply Kit	2
	Hewlett-Packard	512485-B21	HPE iLO Advanced including 1yr 24x7 Technical Support	1
	Hewlett-Packard	720863-B21	HPE 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HPE DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HPE DL380 G9 Chassis NEBS Conversion Kit	1

Gen 9 v2 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	719079-B21	HPE DL380 Gen9 High Performance Fan Kit	1
	Hewlett-Packard	J6X43A	HPE 12AWG PWR-48V DC 3.0m Crd (DC Power Cable two required)	2
Gen 9 v2 RMS IDIH Server (DC)				
		HPE DL380 Gen9 v2 DC	OCDSR Configuration 5	1
	Hewlett-Packard	719064-B21	HPE ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	817951-L21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	817951-B21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with V4 processor only)	16
	Hewlett-Packard	749974-B21	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HPE Ethernet 10Gb Dual Port 560SFP+ Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	6
	Hewlett-Packard	720480-B21	HPE 800 W Flex Slot-48VDC Hot Plug Power Supply Kit	2
	Hewlett-Packard	512485-B21	HPE iLO Advanced including 1yr 24x7 Technical Support	1
	Hewlett-Packard	720863-B21	HPE 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HPE DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1

Gen 9 v2 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	719070-B21	HPE DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HPE DL380 Gen9 High Performance Fan Kit	1
	Hewlett-Packard	J6X43A	HPE 12AWG PWR-48V DC 3.0m Crd (DC Power Cable two required)	2

Gen 9 v2 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen 9 RMS v2 Prod Server (AC)				
		HPE DL380 Gen9 v2 AC	OCDSR Configuration 1	0
	Hewlett-Packard	719064-B21	HPE ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	817951-L21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	817951-B21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with V4 processor only)	16
	Hewlett-Packard	749974-B21	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HPE Ethernet 10Gb Dual Port 560SFP+ Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	2
	Hewlett-Packard	720479-B21	HPE 800 W Flex Slot Platinum Hot Plug Power Supply Kit (AC Power Supply)	2
	Hewlett-Packard	512485-B21	HPE iLO Advanced including 1yr 24x7 Technical Support	1

Gen 9 v2 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	720863-B21	HPE 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HPE DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HPE DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HPE DL380 Gen9 High Performance Fan Kit	1
Gen 9 v2 RMS non High Available (for Lab) Server (AC)				
		HPE DL380 Gen9 v2 AC	OCDSR Configuration 2 Non HA for Lab	1
	Hewlett-Packard	719064-B21	HPE ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	817951-L21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	817951-B21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with V4 processor only)	16
	Hewlett-Packard	749974-B21	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HPE Ethernet 10Gb Dual Port 560SFP+ Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	4
	Hewlett-Packard	720479-B21	HPE 800 W Flex Slot Platinum Hot Plug Power Supply Kit (AC Power Supply)	2
	Hewlett-Packard	512485-B21	HPE iLO Advanced including 1yr 24x7 Technical Support	1

Gen 9 v2 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	720863-B21	HPE 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HPE DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HPE DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HPE DL380 Gen9 High Performance Fan Kit	1
Gen 9 v2 RMS IDIH Server (AC)				
		HPE DL380 Gen9 v2 AC	OCDSR Configuration 5	1
	Hewlett-Packard	719064-B21	HPE ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	817951-L21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	817951-B21	HPE DL380 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	805349-B21	HPE 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit (Use with V4 processor only)	16
	Hewlett-Packard	749974-B21	HPE Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HPE Ethernet 10Gb Dual Port 560SFP+ Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	6
	Hewlett-Packard	720479-B21	HPE 800 W Flex Slot Platinum Hot Plug Power Supply Kit (AC Power Supply)	2
	Hewlett-Packard	512485-B21	HPE iLO Advanced including 1yr 24x7 Technical Support	1

Gen 9 v2 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	720863-B21	HPE 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HPE DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HPE LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HPE DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HPE DL380 Gen9 High Performance Fan Kit	1

Gen 9 v1 Blades				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen 9 Blade v1				
		HP BL460 Gen9 Config 1	HP BL460 Gen9 Configuration 1	1
	Hewlett-Packard	727021-B21	HP ProLiant BL460c Gen9 E5-v3 10Gb/20Gb FlexibleLOM Configure-to-order Blade Server	1
	Hewlett-Packard	727003-L21	HP BL460c Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) FIO Processor Kit	1
	Hewlett-Packard	727003-B21	HP BL460c Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) Processor Kit	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 PC4-2133P-R (DDR4-2133) Registered	8
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	2
	Hewlett-Packard	655639-B21	HP Ethernet 10Gb 2-port 560FLB Adapter (Flex LOM)	1
	Hewlett-Packard	665246-B21	HP Ethernet 10Gb 2-port 560M Adapter	2
	Hewlett-Packard	761871-B21	HP Smart Array P244br/1GB FBWC 12Gb 2-ports Int FIO SAS Controller	1

Gen 9 v1 Blades				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1

Gen 9 v1 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen 9 RMS v1 Prod Server (DC)				
		HP DL380 Gen9 DC	OCDSR Configuration 1	1
	Hewlett-Packard	719064-B21	HP ProLiant DL380 Gen9 8SFF Configure-to-order Server	1
	Hewlett-Packard	762766-L21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	762766-B21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Reg Memory Kit	16
	Hewlett-Packard	749974-B21	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller	1
	Hewlett-Packard	665249-B21	HP Ethernet 10-Gb 2-port 560SFP+Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	2
	Hewlett-Packard	720480-B21	HP 800 W Flex Slot-48VDC Hot Plug Power Supply Kit	2
	Hewlett-Packard	512485-B21	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	1
	Hewlett-Packard	720863-B21	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HP DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1

Gen 9 v1 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	719070-B21	HP DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HP DL380 Gen9 High Performance Fan Kit	1
	Hewlett-Packard	J6X43A	HP 12AWG PWR-48V DC 3.0m Crd (DC Power Cable two required)	2
Gen 9 v1 RMS non High Available (for Lab) Server (DC)				
		HP DL380 Gen9 DC	OCDSR Configuration 2 Non HA for Lab	1
	Hewlett-Packard	719064-B21	HP ProLiant DL380 Gen9 8SFF Configure-to-order Server	1
	Hewlett-Packard	762766-L21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	762766-B21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Reg Memory Kit	16
	Hewlett-Packard	749974-B21	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller	1
	Hewlett-Packard	665249-B21	HP Ethernet 10-Gb 2-port 560SFP+Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	4
	Hewlett-Packard	720480-B21	HP 800 W Flex Slot-48VDC Hot Plug Power Supply Kit	2
	Hewlett-Packard	512485-B21	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	1
	Hewlett-Packard	720863-B21	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HP DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1

Gen 9 v1 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	719070-B21	HP DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HP DL380 Gen9 High Performance Fan Kit	1
	Hewlett-Packard	J6X43A	HP 12AWG PWR-48V DC 3.0m Crd (DC Power Cable two required)	2
Gen 9 v1 RMS IDIH Server (DC)				
		HP DL380 Gen9 DC	OCDSR Configuration 5	1
	Hewlett-Packard	719064-B21	HP ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	762766-L21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	762766-B21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Reg Memory Kit (Pick memory dims modules in groups of 4, 8,12,16 with a minimum requirement of 8x16GB=128GB and a maximum requirement of 16x16GB=256GB)	16
	Hewlett-Packard	749974-B21	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HP Ethernet 10-Gb 2-port 560SFP+Adapter	2
	Hewlett-Packard	720480-B21	HP 800 W Flex Slot-48VDC Hot Plug Power Supply Kit	2
	Hewlett-Packard	512485-B21	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	1
	Hewlett-Packard	720863-B21	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HP DL380 Gen9 Systems Insight Display Kit	1

Gen 9 v1 RMS Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HP DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HP DL380 Gen9 High Performance Fan Kit	1
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	6
	Hewlett-Packard	J6X43A	HP 12AWG PWR-48V DC 3.0m Crd (DC Power Cable two required)	2

Gen 9 v1 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen 9 RMS v1 Prod Server (AC)				
		HP DL380 Gen9 AC	OCDSR Configuration 1	1
	Hewlett-Packard	719064-B21	HP ProLiant DL380 Gen9 8SFF Configure-to-order Server	1
	Hewlett-Packard	762766-L21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	762766-B21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Reg Memory Kit	16
	Hewlett-Packard	749974-B21	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller	1
	Hewlett-Packard	665249-B21	HP Ethernet 10-Gb 2-port 560SFP+Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	2
	Hewlett-Packard	720479-B21	HP 800 W Flex Slot Platinum Hot Plug Power Supply Kit (AC Power Supply)	2
	Hewlett-Packard	512485-B21	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	1

Gen 9 v1 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	720863-B21	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1
	Hewlett-Packard	768900-B21	HP DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HP DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HP DL380 Gen9 High Performance Fan Kit	1
Gen 9 v1 RMS non High Available (for Lab) Server (AC)				
		HP DL380 Gen9 AC	OCDSR Configuration 2 Non HA for Lab	1
	Hewlett-Packard	719064-B21	HP ProLiant DL380 Gen9 8SFF Configure-to-order Server	1
	Hewlett-Packard	762766-L21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	762766-B21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Reg Memory Kit	16
	Hewlett-Packard	749974-B21	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller	1
	Hewlett-Packard	665249-B21	HP Ethernet 10-Gb 2-port 560SFP+Adapter	2
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	4
	Hewlett-Packard	720479-B21	HP 800 W Flex Slot Platinum Hot Plug Power Supply Kit (AC Power Supply)	2
	Hewlett-Packard	512485-B21	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	1
	Hewlett-Packard	720863-B21	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1

Gen 9 v1 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	768900-B21	HP DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HP DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HP DL380 Gen9 High Performance Fan Kit	1
Gen 9 v1 RMS IDIH Server (AC)				
		HP DL380 Gen9 AC	OCDSR Configuration 5	1
	Hewlett-Packard	719064-B21	HP ProLiant DL380 Gen9 8SFF	1
	Hewlett-Packard	762766-L21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	762766-B21	HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit (Processor Kit Ships with a High Performance Heatsink)	1
	Hewlett-Packard	726719-B21	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Reg Memory Kit (Pick memory dims modules in groups of 4, 8,12,16 with a minimum requirement of 8x16GB=128GB and a maximum requirement of 16x16GB=256GB)	16
	Hewlett-Packard	749974-B21	HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller (Includes the HP Smart Storage Battery)	1
	Hewlett-Packard	665249-B21	HP Ethernet 10-Gb 2-port 560SFP+Adapter	2
	Hewlett-Packard	720479-B21	HP 800 W Flex Slot Platinum Hot Plug Power Supply Kit (AC Power Supply)	2
	Hewlett-Packard	512485-B21	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	1
	Hewlett-Packard	720863-B21	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA (Required for Zone 4 installations)	1

Gen 9 v1 RMS Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
	Hewlett-Packard	768900-B21	HP DL380 Gen9 Systems Insight Display Kit	1
	Hewlett-Packard	758959-B22	HP LEGACY FIO MODE SETTING	1
	Hewlett-Packard	719070-B21	HP DL380 G9 Chassis NEBS Conversion Kit	1
	Hewlett-Packard	719079-B21	HP DL380 Gen9 High Performance Fan Kit	1
	Hewlett-Packard	872479-B21	HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive	6

Gen 8 Blades				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Gen8 Blade DA-MP				
7108039			HP D9N37A_BL460C GEN8_BLADE SERVER_009_ROHS	1
7108039	Hewlett-Packard	735151-B21	HP ProLiant BL460c Gen8 E5-v2 10Gb FlexibleLOM Server	1
7108039	Hewlett-Packard	690164-B21	HP Smart Array P220i Controller FIO Kit	1
7108039	Hewlett-Packard	718056-L21	HP BL460c Gen8 E5-2680v2 FIO Kit	1
7108039	Hewlett-Packard	718056-B21	HP BL460c Gen8 E5-2680v2 Kit	1
7108039	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	4
7108039	Hewlett-Packard	652583-B21	HP 652583-B21_600GB 6G SAS_HDD_10K_SFF_ROHS	2
7108039	Hewlett-Packard	631884-B21	HP 631884-B21_HP FLEX-10_10GB_2 PORT_530M ADAPTER_ROHS	2
7108039	Hewlett-Packard	684211-B21	HP 684211-B21_HP FLEX-10_10GB_2 PORT_530FLB FIO ADAPTER_ROHS	1
Gen8 Blade SOAM				
7108027			HP D9N30A_BL460C GEN8_BLADE SERVER_001_ROHS	1

Gen 8 Blades				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108027	Hewlett-Packard	735151-B21	HP ProLiant BL460c Gen8 E5-v2 10Gb FlexibleLOM Server	1
7108027	Hewlett-Packard	690164-B21	HP Smart Array P220i Controller FIO Kit	1
7108027	Hewlett-Packard	718056-L21	HP BL460c Gen8 E5-2680v2 FIO Kit	1
7108027	Hewlett-Packard	718056-B21	HP BL460c Gen8 E5-2680v2 Kit	1
7108027	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108027	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108027	Hewlett-Packard	631884-B21	HP 631884-B21_HP FLEX-10_10GB_2 PORT_530M ADAPTER_ROHS	2
7108027	Hewlett-Packard	684211-B21	HP 684211-B21_HP FLEX-10_10GB_2 PORT_530FLB FIO ADAPTER_ROHS	1
Gen8 Blade DIH				
7108104	Hewlett-Packard	406740-B21	HP-406740-B21_1GBE_PASS THRU MODULE_001_ROHS	1
7108027			HP D9N30A_BL460C GEN8_BLADE SERVER_001_ROHS	1
7108027	Hewlett-Packard	735151-B21	HP ProLiant BL460c Gen8 E5-v2 10Gb FlexibleLOM Server	1
7108027	Hewlett-Packard	690164-B21	HP Smart Array P220i Controller FIO Kit	1
7108027	Hewlett-Packard	718056-L21	HP BL460c Gen8 E5-2680v2 FIO Kit	1
7108027	Hewlett-Packard	718056-B21	HP BL460c Gen8 E5-2680v2 Kit	1
7108027	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108027	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108027	Hewlett-Packard	631884-B21	HP 631884-B21_HP FLEX-10_10GB_2 PORT_530M ADAPTER_ROHS	2
7108027	Hewlett-Packard	684211-B21	HP 684211-B21_HP FLEX-10_10GB_2 PORT_530FLB FIO ADAPTER_ROHS	1

Gen 8 Blades				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108130			HP_STORAGE BLADE QW918A_600GB HARD DRIVES_ROHS	1
7108130	Hewlett-Packard	QW918A	HP QW918A_STORAGE BLADE FOR ASSY_ROHS	1
7108130	Hewlett-Packard	652583-B21	HP 652583-B21_600GB 6G SAS_HDD_10K_SFF_ROHS	12

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Management Server				
7109444			HP D9N07A_DL380 GEN8_DC_SERVER_001_ROHS	1
7109444	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7109444	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7109444	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7109444	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7109444	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7109444	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7109444	Hewlett-Packard	636673-B21	HP 636673-B21_HP 750W_COMMON SLOT_-48VDC_HOT PLUG POWER SUPPLY KIT	2
7109444	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7109444	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7109444	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7109444	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7109444	Hewlett-Packard	707865-B21	HP 707865-B21_DL380 GEN8_NEBS CONVERSION CAGE KIT_PCI SLOTS 1-3_ROHS	1
7109447	TELECT	009-8005-3404H	TEL 009-8005-3404H_FUSE PANEL_150A_4/4_DC_1U_ROHS 5/6	1
7108162	Anixter	814-0034-06	ASSEMBLY MATERIALS_GEN8 DC RMS_POWER UNTERMINATED_MTG HARDWARE_ROHS 5/6	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
NOAM server				
7108070			HP D9N07A_DL380 GEN8_DC_SERVER_001_ROHS	1
7108070	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7108070	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108070	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108070	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108070	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108070	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108070	Hewlett-Packard	636673-B21	HP 636673-B21_HP 750W_COMMON SLOT_-48VDC_HOT PLUG POWER SUPPLY KIT	2

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108070	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108070	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108070	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7108070	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7108070	Hewlett-Packard	707865-B21	HP 707865-B21_DL380 GEN8_NEBS CONVERSION CAGE KIT_PCI SLOTS 1-3_ROHS	1
7108146	Hewlett-Packard	A5S98A	HP A5S98A_POWER CABLE_DC GEN 8 SERVER_2.5M LONG_TERMINATED SERVER END_UNTERMINATED PDP END_ROHS	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
SDS Server				
7108070			HP D9N07A_DL380 GEN8_DC_SERVER_001_ROHS	1
7108070	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7108070	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108070	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108070	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108070	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108070	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108070	Hewlett-Packard	636673-B21	HP 636673-B21_HP 750W_COMMON SLOT_-48VDC_HOT PLUG POWER SUPPLY KIT	2
7108070	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108070	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108070	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7108070	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7108070	Hewlett-Packard	707865-B21	HP 707865-B21_DL380 GEN8_NEBS CONVERSION CAGE KIT_PCI SLOTS 1-3_ROHS	1
7108146	Hewlett-Packard	A5S98A	HP A5S98A_POWER CABLE_DC GEN 8 SERVER_2.5M LONG_TERMINATED SERVER END_UNTERMINATED PDP END_ROHS	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
Query Server				
7108070			HP D9N07A_DL380 GEN8_DC_SERVER_001_ROHS	1
7108070	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7108070	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108070	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108070	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108070	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108070	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108070	Hewlett-Packard	636673-B21	HP 636673-B21_HP 750W_COMMON SLOT_-48VDC_HOT PLUG POWER SUPPLY KIT	2
7108070	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108070	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108070	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7108070	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7108070	Hewlett-Packard	707865-B21	HP 707865-B21_DL380 GEN8_NEBS CONVERSION CAGE KIT_PCI SLOTS 1-3_ROHS	1
7108146	Hewlett-Packard	A5S98A	HP A5S98A_POWER CABLE_DC GEN 8 SERVER_2.5M LONG_TERMINATED SERVER END_UNTERMINATED PDP END_ROHS	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
Gen 8 IDIH Server				
7108081			HP D9U38A_DL380 GEN8_DC_SERVER_005_ROHS	1
7108081	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7108081	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108081	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108081	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108081	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108081	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	6
7108081	Hewlett-Packard	636673-B21	HP 636673-B21_HP 750W_COMMON SLOT_-48VDC_HOT PLUG POWER SUPPLY KIT	2
7108081	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108081	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108081	Hewlett-Packard	593722-B21	HP 593722-B21_NC365T_4 PORT ETHERNET SERVER ADAPTER_ROHS	2
7108081	Hewlett-Packard	631670-B21	HP 631670-B21_HP SMART ARRAY_P420/1GIB FBWC CONTROLLER_ROHS	1
7108081	Hewlett-Packard	662883-B21	HP 662883-B21_HP 380/385 GEN8_8-SFF CAGE/BKPLN KIT_ROHS	1
7108081	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7108081	Hewlett-Packard	662897-B21	HP 662897-B21_HP MINI SAS STRAIGHT TO STRAIGHT 37IN CABLE ASSEMBLIES_ROHS	2
7108081	Hewlett-Packard	707865-B21	HP 707865-B21_DL380 GEN8_NEBS CONVERSION CAGE KIT_PCI SLOTS 1-3_ROHS	2
7108081	Hewlett-Packard	653206-B21	HP 653206-B21_DL380P/385P GEN8 3 SLOT PCI-E RISER KIT_ROHS	1
7108146	Hewlett-Packard	A5S98A	HP A5S98A_POWER CABLE_DC GEN8 SERVER_2.5M LONG_TERMINATED SERVER END_UNTERMINATED PDP END_ROHS	1

Gen 8 Server (DC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1

Gen 8 Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Management Server				
7109443			DL380 GEN8_AC_C-CLASS_MANAGEMENT SERVER_021_ROHS	1
7109443	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7109443	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7109443	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7109443	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7109443	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7109443	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7109443	Hewlett-Packard	656363-B21	HP 656363-B21_HP 750W_COMMON SLOT_PLATINUM PLUS_HOT PLUG POWER SUPPLY KIT_ROHS	2
7109443	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7109443	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7109443	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1

Gen 8 Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7109443	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
NOAM Server				
7108054			HP D9N03A_DL380 GEN8_AC_SERVER_001_ROHS	1
7108054	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8_SFF_CTO CHASSIS_ROHS	1
7108054	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108054	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108054	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108054	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108054	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108054	Hewlett-Packard	656363-B21	HP 656363-B21_HP 750W_COMMON SLOT_PLATINUM PLUS_HOT PLUG POWER SUPPLY KIT_ROHS	2
7108054	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108054	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108054	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7108054	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1

Gen 8 Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
SDS Server				
7108054			HP D9N03A_DL380 GEN8_AC_SERVER_001_ROHS	1
7108054	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8_SFF_CTO CHASSIS_ROHS	1
7108054	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108054	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108054	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108054	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108054	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108054	Hewlett-Packard	656363-B21	HP 656363-B21_HP 750W_COMMON SLOT_PLATINUM PLUS_HOT PLUG POWER SUPPLY KIT_ROHS	2
7108054	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108054	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108054	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7108054	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1

Gen 8 Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
Query Server				
7108054			HP D9N03A_DL380 GEN8_AC_SERVER_001_ROHS	1
7108054	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7108054	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108054	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108054	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108054	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108054	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	2
7108054	Hewlett-Packard	656363-B21	HP 656363-B21_HP 750W_COMMON SLOT_PLATINUM PLUS_HOT PLUG POWER SUPPLY KIT_ROHS	2
7108054	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108054	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108054	Hewlett-Packard	647594-B21	HP 647594-B21_331T_4P_1G_PCIE ADAPTER_ROHS	1
7108054	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1
Gen 8 IDIH Server				
7108067			HP D9U37A_DL380 GEN8_AC_SERVER_005_ROHS	1

Gen 8 Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7108067	Hewlett-Packard	653200-B21	HP 653200-B21_HP DL380P GEN8 8_SFF_CTO CHASSIS_ROHS	1
7108067	Hewlett-Packard	715215-L21	HP DL380p Gen8 E5-2680v2 FIO Kit	1
7108067	Hewlett-Packard	715215-B21	HP DL380p Gen8 E5-2680v2 Kit	1
7108067	Hewlett-Packard	708641-B21	HP 16GB 2Rx4 PC3-14900R-13 Kit	8
7108067	Hewlett-Packard	631679-B21	HP 631679-B21_HP 1GB P SERIES_SMART ARRAY_FLASH BACKED WRITE CACHE UPGRADE_ROHS	1
7108067	Hewlett-Packard	652589-B21	HP 652589-B21_900GB 6G SAS_HDD_10K_SFF_ROHS	6
7108067	Hewlett-Packard	656363-B21	HP 656363-B21_HP 750W_COMMON SLOT_PLATINUM PLUS_HOT PLUG POWER SUPPLY KIT_ROHS	2
7108067	Hewlett-Packard	512485-B21	HP 512485-B21_PROLIANT ESSENTIALS_INTEGRATED LIGHTS-OUT ADVANCED PACK_1 SVR LICENSE_NO MEDIA	1
7108067	Hewlett-Packard	684208-B21	HP 684208-B21_HP FLEXLOM_1GB_4-PORT_331FLR ETHERNET ADAPTER_ROHS	1
7108067	Hewlett-Packard	593722-B21	HP 593722-B21_NC365T_4 PORT ETHERNET SERVER ADAPTER_ROHS	2
7108067	Hewlett-Packard	631670-B21	HP 631670-B21_HP SMART ARRAY_P420/1GIB FBWC CONTROLLER_ROHS	1
7108067	Hewlett-Packard	662883-B21	HP 662883-B21_HP 380/385 GEN8_8-SFF CAGE/BKPLN KIT_ROHS	1
7108067	Hewlett-Packard	663478-B21	HP 663478-B21_HP 2U_SFF_BALL BEARING GEN8 RAIL KIT_ROHS	1
7108067	Hewlett-Packard	662897-B21	HP 662897-B21_HP MINI SAS STRAIGHT TO STRAIGHT 37IN CABLE ASSEMBLIES_ROHS	2
7108067	Hewlett-Packard	653206-B21	HP 653206-B21_DL380P/385P GEN8 3 SLOT PCI-E RISER KIT_ROHS	1

Gen 8 Server (AC Power)				
Oracle Part Number	Supplier	Supplier Part Number	Description	Unit Qty
7110434	Anixter	814-0034-07	ASSEMBLY MATERIALS_RMS_EXTENTION KIT_ETH CABLES_ROHS 5/6	1

Chapter 5: Firmware Components

Topics:

Oracle Firmware Upgrade Pack

The firmware components are software that is installed on the hardware. These components are listed in this chapter and are also listed in the Firmware Release Notice. Please refer to the latest Firmware Release Notice for any updates to this list.

Oracle Firmware Upgrade Pack

The *Oracle Firmware Upgrade Pack Release Notes 3.1.8* lists the firmware versions approved for this Oracle Firmware Upgrade Pack release to assist customers with upgrading their Oracle hardware. Also, additional instructions and guidance on the firmware upgrades have been provided where possible.

The Release Notes are available on Oracle Help Center (OHC) at
https://docs.oracle.com/cd/E93250_01/index.htm.

Chapter 6: Supported Upgrade Paths

Topics:

Supported Upgrade Paths

This release has been tested for upgrade from specific prior releases. This chapter contains the exact paths for upgrade. Please verify your current installed release is listed on a valid upgrade path.

Supported Upgrade Paths

The possible upgrade paths to DSR Release 8.4 are listed in Table 13.

Table 13: DSR Release 8.4 Upgrade Paths

Component	From	To
DSR	8.0.x, 8.1, 8.1.x, 8.2.x, 8.3.x	8.4
SDS	8.0.x, 8.1, 8.1.x, 8.2.x, 8.3.x	8.4
iDIH	8.0.x, 8.1, 8.1.x, 8.2.x	8.2.1

Note:

- Any upgrade other than listed above is not recommended or supported. Version 8.4 is supported as new or fresh installation.
- DSR release 8.4.0.3.0 supports vSTP fresh installation only.
- DSR Release 8.4.0.5.0 supports vSTP upgrade from 8.4.0.3 only.
- Other upgrade paths are as mentioned in the table.
- VEDSR is not supported from DSR Release 8.3 onwards.
- “Diameter Security Application (DSA) with Universal-SBR (USBR)” application is not supported from DSR Release 8.4.0.5.0. Customers using this application must not upgrade DSR software to DSR 8.4.0.5.0 release and should migrate to “DSA with UDR” based application.

The possible upgrade paths to Cloud Native Release 1.1 are listed in Table 14.

Table 14: Cloud Native Release 1.1 Upgrade Paths

Component	From	To
NRF	1.0	1.1

Note: Any upgrade other than listed above is not recommended or supported.

The possible upgrade paths to Cloud Native Release 1.2 are listed in Table 15.

Table 15: Cloud Native Release 1.2 Upgrade Paths

Component	From	To
NRF	1.1	1.2
UDR	1.0	1.2

Note: Any upgrade other than listed above is not recommended or supported.

The possible upgrade paths to Cloud Native Release 1.2 are listed in Table 15.

Chapter 7: Resolved and Known Bugs

Topics:

Severity Definitions

Resolved Bug List

DSR Release 8.4.0.6.0

DSR Release 8.4.0.5.0

DSR Release 8.4.0.4.0

DSR Release 8.4.0.3.0

DSR Release 8.4.0.2.0

DSR Release 8.4.0.0.0

Cloud Native Release 1.2

Cloud Native Release 1.1

Cloud Native Release 1.0.1

VNFM 4.5

Customer Known Bug List

DSR Release 8.4.x

Cloud Native Release

This chapter lists the resolved and known bugs for DSR release 8.4 and Cloud Native release 1.0

These lists are distributed to customers with a new software release at the time of General Availability (GA) and are updated for each maintenance release.

Severity Definitions

The problem report sections in this document refer to bug severity levels. Definitions of these levels can be found in the publication, *TL 9000 Quality Management System Measurement Handbook*.

Problem Report: A report from a customer or on behalf of the customer concerning a product or process defect requesting an investigation of the issue and a resolution to remove the cause. The report may be issued via any medium.

Problem reports are systemic deficiencies with hardware, software, documentation, delivery, billing, invoicing, servicing, or any other process involved with the acquisition, operation, or performance of a product. An incident reported simply to request help to bring back the service or functionality to normal without the intent to investigate and provide a resolution to the cause of the incident is not a problem report.

1. **Critical:** Conditions that severely affect the primary functionality of the product and because of the business impact to the customer requires non-stop immediate corrective action regardless of time of day, or day of the week as viewed by a customer on discussion with the organization such as:

- Product inoperability (total or partial outage),
- A reduction in the capacity capability, that is, traffic/data handling capability, such that expected loads cannot be handled,
- Any loss of emergency capability (for example, emergency 911 calls), or
- Safety hazard or risk of security breach.

2. **Major:** Product is usable, but a condition exists that seriously degrades the product operation, maintenance, or administration, etc., and requires attention during pre-defined standard hours to resolve the situation.

The urgency is less than in critical situations because of a less immediate or impending effect on product performance, customers, and the customer's operation and revenue such as:

- Reduction in product's capacity (but still able to handle the expected load),
- Any loss of administrative or maintenance visibility of the product and/or diagnostic capability,
- Repeated degradation of an essential component or function, or
- Degradation of the product's ability to provide any required notification of malfunction.

3. **Minor:** Other problems of a lesser severity than “critical” or “major” such as conditions that have little or no impairment on the function of the system.

The numbered severity levels in the tables below correspond to these definitions of 1–Critical, 2–Major, or 3–Minor.

Resolved Bug List

DSR Release 8.4.0.6.0

Table 16: DSR Release 8.4.0.6.0 Resolved Bugs
 Table 17: DSR Release 8.4.0.5.0 Resolved Bugs
 lists bugs resolved in this release.

Table 16: DSR Release 8.4.0.6.0 Resolved Bugs

Bug Number	Severity	Found In	Title
31592410	3	8.4	Issue in MRN Set
31592397	3	8.4	Issues in Sccp GTT Selector
31582486	3	8.4	GUI Freeze Issue
31538019	3	8.4	Unable to enable/disable Links and Connections from GUI
31592428	3	8.4	Issue in Global Title Address
32281311	3	8.4	Secondary Route Restricted on vSTP
31449686	4	8.4	Getting error while deleting non-primary route for adjacent point code
31604565	4	8.4	Patch delivery for the issue Transtel issues on DSR 8.4.0.3_86.4.0.0

DSR Release 8.4.0.5.0

Table 17: DSR Release 8.4.0.5.0 Resolved Bugs
 lists bugs resolved in this release.

Table 17: DSR Release 8.4.0.5.0 Resolved Bugs

Bug Number	Severity	Found In	Title
30540898	2	8.4	ASPUP message decoding error for M3UA in vSTP DSR 8.4
30607147	2	8.4	DSR MMI: Delete operation is not working for RBAR IPv6 Address Range.
30732246	2	8.4	[TDM] VSTP process is getting restarted if E1T1 links are configured in the system

Bug Number	Severity	Found In	Title
29289217	3	8.4	In case of Egress traffic congestion for ITUI domain traffic, measurement (VstpPriority2MsuDiscarded) gets pegged which is incorrect.
29387129	3	8.3	IPFE is rebooting because hw_id file has GUEST_UNKNOWN
29717545	3	8.4	VSTP_8.4_INP: More than 5 CDPNNAI ->SNAI mappings for INP message are supported on vSTP
29963652	3	8.4	SSA is sent as a response when Sub System is offline/Not Available.
30066817	3	8.4	Routing Option Sets insertion fails through MMI when ErrMsg is missing
30220776	3	8.4	Getting "SKBCSM (3 bytes SK used) is not found in CSL table" even if Entry is there in CSL table.
30290588	3	8.2	Value of maxPerMsgFwdAllowed changes after upgrade
30496880	3	8.4	vSTP_8.4.0.3_ST:Incorrect behaviour with gta having ri ssn .
30654799	3	8.4	Range entries for GTA are not working IF startAddress & endAddress range difference is beyond 80.
30727934	3	8.4	SDS Routing entities POST issue
30768870	3	8.3	Unable to configure IPFE TSA via MMI if number of application server ips more 16
30793112	3	8.4	SDS Options schema pattern issue
30907066	3	8.4	DSR MMI diameter/trafficthrottlepoints/{name}/status/ giving Error
31082644	3	8.2	Wrong value of "Used / Free Reserved MPS Capacity" on GUI
31116071	3	8.1	MAJOR ALARM : 22101 not getting generated for Fixed connections
31150693	3	8.4	Data Remote Server Export cannot be added when rsyncPath/directory is left blank
29718111	4	8.4	VSTP_8.4_INP:Random parameters are getting provisioned in SCCPMNPOPTIONS, SCCPOPTIONS, M3RLOPTIONS MOs
29775226	4	8.1	CSV file not giving error for incorrect value in field topologyHidingStatus
30013838	4	8.2	PHP Warning: Creating default object from empty value in file set_dirs.php
30024723	4	8.3	IPFE alarm 5011 needs to be cleared when any successive device write is successful
30455190	4	8.4	MMI: Issue with Alarms Events TrapLog
30460066	4	8.4	MMI: eventid filtering for resource /mon/alarmseventshistory
30591294	4	8.2	Address Resolution should not show Local Identifier for External Identifier Routing Entity while editing.

Bug Number	Severity	Found In	Title
30606376	4	8.4	Data Export "Transfer Now" & "Test Transfer" buttons not working.
30659408	4	8.4	DSR MMI : failed PUT on ressource /diameter/applications/applicationName/applicationadminstate and error for GET resource /diameter/routegroups/{name}/status for item [root.data.mpServerHostName]
30659442	4	8.4	SDS MMI: GET /sdbs/subscribers/{compositeName} operation is not working as per MMI API Guide.
30678441	4	8.4	DSR_MMI: Failed resources on NOAM GET /diameter/ratelimitingconfigurations.
30697142	4	8.4	GETALL url removal for SDS routing entities & Subscribers

DSR Release 8.4.0.4.0

Table 18: DSR Release 8.4.0.4.0 Resolved Bugs lists bugs resolved in this release.

Table 18: DSR Release 8.4.0.4.0 Resolved Bugs

Bug Number	Severity	Found in Release	Title
31135411	2	VNFM 4.3.0	Configuration of NTP fails to populate ntp.conf; ntpd service not working on VNFM
29035530	3	7.0.0	Error message appear in GUI when INSERT operation done.
30639522	3	VNFM 4.1.0	VNFM processes need to be run without root login
30854799	3	8.4.0	Tomcat restart issue
30901242	3	VNFM 4.1.0	After VNFM reboots, manually restart the Alert manager
30901411	3	VNFM 4.1.0	All the VNFM Alarms to be documented as part of VNFM 4.3 UG and the SNMP Configuration Details
30988791	3	8.4.0	SDS NOAM fixed IP Json fails on VNFM 4.3.0.0.0_43.3.4
31011693	3	VNFM 4.3.0	VNFM login failure after few days of deployment
31063382	3	8.4.0	ATS instantiation failed on user defined AZ using VNFM 4.3-43.6
27272082	4	8.2	vSTP abterm has been observed at the time of two MPs was HARD Rebooted

Bug Number	Severity	Found in Release	Title
30900590	4	8.4.0	DSR 8.4: Data Export "Transfer Now" & "Test Transfer" buttons not working.

DSR Release 8.4.0.3.0

Table 19: DSR Release 8.4.0.3.0 Resolved Bugs lists bugs resolved in this release.

Table 19: DSR Release 8.4.0.3.0 Resolved Bugs

Bug Number	Severity	Found in Release	Title
29492273	2	8.4.0	changeover and changeback causing MSU loss and miss-sequencing, later run identified loss in changeback
29430889	2	8.4.0	Seeing MSU loss for ANSI domain MTP routed SCCP messages, when a MIX of SCCP and TFP traffic gets MTP routed, which is much below the configured TPS
29492348	2	8.4.0	MSU loss gets observed, when same RSP has two routes and traffic switches between the routes due to change in RC of routes
29441688	2	8.4.0	An actually down PC, which is Non-adjacent PC for system under test, its status on SUT is subjective to which side vSTP node gets restarted
29430710	2	8.4.0	Inconsistency in the route status of non-adjacent point code across MPs of a site. It is not getting fixed due to TFP received from adjacent node in response to messages getting routed
29833064	2	8.4.0	NIDD call flow not working when custom SLAs are applied
30449807	2	8.4.0	Thread watch dog failure for stack task of Deir Processes
29717110	3	8.4.0	SCEF Logging Feature for MTS
29685459	3	8.4.0	SCEF support for rate limiting based on monitoring event type
29685488	3	8.4.0	SCEF - Validation of IP address against the AF identifier in the AF traffic
30314304	3	8.4.0	SCEF MONTE is using User identifier in RIR required to use only Scef Reference Id
29959511	3	8.4.0	MP Failover Scenario not working as expected in VMWare
30048876	3	8.4.0	The cloud-init fails because of failure of MMI calls with IPv6
29946848	3	8.4.0	Monitoring Event Number of UEs not sending error HTTP response
30114132	3	8.4.0	MQTT PSK Support BCR Submission
30106532	3	8.4.0	Support for MYSQL DB at SCEF API Gateway BCR Submission

Bug Number	Severity	Found in Release	Title
30105808	3	8.4.0	SCEF sending Notifications to Appservers which are down. Does not retry sending.
30161694	3	8.4.0	OCSG - Custom SLA Bug
30105799	3	8.4.0	SCEF sending Notifications to Appservers which are down. Does not retry sending after checking timeout response.
30190315	3	8.4.0	SCEF: NIDD context can't be edited/deleted after PATCH with duration change in NIDD config
30231451	3	8.4.0	OCSG CustomSLA ME fix for SR 3-20753615101
30216902	3	8.4.0	"dsrSupportedVendorIds" is not getting add in cex configuration sets
30278137	3	8.4.0	Cloud-init log file displaying NOAM GUI credentials
30232693	3	8.4.0	Port DSCP MMI insertion protocol mapping not proper.
30483334	3	8.4.0	MMI command "mon/alarms/{id}" produces error "Forbidden".
30342479	3	8.4.0	SCEF: Error during GET NIDD
30309559	3	8.4.0	SCEF: Increase MaxAuthDuration maximum value in NIDD Configuration Set
30256240	4	8.4.0	SCEF NIDD KPI Enhancement for MTS Russia
29708522	4	8.4.0	SCEF does not have MMI support for 'supportedFeatureListId' parma in ScefOptions table
29647866	4	8.4.0	SCEF MMI documentation: Need to remove parameters which are not in use
30048895	4	8.4.0	SCEF PDN Establishment option shows 'Unknown' in the log
30048869	4	8.4.0	SCEF Nidd log the PDN establishment time is not updated

DSR Release 8.4.0.2.0

Table 20: DSR Release 8.4.0.2.0 Resolved Bugs lists bugs resolved in this release.

Table 20: DSR Release 8.4.0.2.0 Resolved Bugs

Bug Number	Severity	Found in Release	Title
30216902	3	8.4	"dsrSupportedVendorIds" is not getting add in cex configuration sets
29441688	2	8.4	An actually down PC, which is Non-adjacent PC for system under test, its status on SUT is subjective to which side vSTP node gets restarted

Bug Number	Severity	Found in Release	Title
29492273	2	8.4	changeover and changeback causing MSU loss and miss-sequencing, later run identified loss in changeback
30048876	3	8.4	DSR8.4 - The cloud-init fails because of failure of MMI calls with IPv6
30278137	3	8.4	DSR 8.4 - Cloud-init log file displaying NOAM GUI credentials
29806711	3	8.4	Generic Bug of DSR 8.2 and 8.3 fixed in DSR 8.4
29430710	2	8.4	Inconsistency in the route status of non-adjacent point code across MPs of a site. Neither, it's getting fixed due to TFP received from adjacent node in response to messages getting routed
29964801	4	8.4	Increase the number of PRT entries from 1000 to 2000
29946848	3	8.4	Monitoring Event Number of UEs not sending error HTTP response
29959511	3	8.4	MP Failover Scenario not working as expected in VMWare
30114132	3	8.4	MQTT PSK Support BCR Submission
29492348	2	8.4	MSU loss gets observed, when same RSP has two routes and traffic switches between the routes due to change in RC of routes
29833064	2	8.4	NIDD call flow not working when custom SLAs are applied
30161694	3	8.4	OCSG - Custom SLA Bug
30231451	3	8.4	OCSG CustomSLA ME fix for SR 3-20753615101
30232693	3	8.4	Port DSCP MMI insertion protocol mapping not proper.
29685488	3	8.4	SCEF - Validation of IP address against the AF identifier in the AF traffic
29752463	3	8.4	SCEF AUT Corrections
29708522	4	8.4	SCEF does not have MMI support for 'supportedFeatureListId' parma in ScefOptions table
29717110	3	8.4	SCEF Logging Feature for MTS
29647866	4	8.3	SCEF MMI documentation: Need to remove parameters which are not in use
30048869	4	8.4	SCEF Nidd log the PDN establishment time is not updated
30048895	4	8.4	SCEF PDN Establishment option shows 'Unknown' in the log
30105799	3	8.4	SCEF sending Notifications to Appservers, which are down. Does not retry sending after checking timeout response.

Bug Number	Severity	Found in Release	Title
30105808	3	8.4	SCEF sending Notifications to Appservers, which are down. Does not retry sending.
29685459	3	8.4	SCEF support for rate limiting based on monitoring event type
30190315	3	8.4	SCEF: NIDD context can't be edited/deleted after PATCH with duration change in NIDD config
29430889	2	8.4	Seeing MSU loss for ANSI domain MTP routed SCCP messages, when a MIX of SCCP and TFP traffic gets MTP routed, which is much below the configured TPS.
30106532	3	8.4	Support for MYSQL DB at SCEF API Gateway BCR Submission
30278137	3	8.4	DSR 8.4 - Cloud-init log file displaying NOAM GUI credentials
30232693	3	8.4	Port DSCP MMI insertion protocol mapping not proper.

DSR Release 8.4.0.0.0

Table 21: DSR Release 8.4.0.0.0 Resolved Bugs lists bugs resolved in this release.

Table 21: DSR Release 8.4.0.0.0 Resolved Bugs

Bug Number	Severity	Found in Release	Title
29240102	2	8.3	RP filtering flag changes from 2 to 1 on upgrade because of IPFE Responder connection and MP failure.
28601321	2	8.3	RSP status of 2 non-adj PCs got stuck in congestion level 3, when 0 traffic running.
28456272	2	8.3	Inter vSTP M2PA link stuck in proving state though no traffic.
29258626	3	8.2	Traffic is being received equally at all nodes irrespective of the weight value.
29183537	3	8.3	Deletion of a secondary record/entry (RSP+SSN) for a MAPSET ID referenced in GTA is not allowed, which is incorrect. Also, text for error code #50194 is not correct.
29177262	3	8.3	SCCP layer message bytes are copied in the response message.
29161341	3	8.1	LS GET operation o/p displays routing context when it was not configured through post operation.
28867815	3	8	Custom Periodic Task filling the cron log too fast.
28864940	3	8.2	Logging issue in DSA.
28799499	3	8.3	MMI: fabr/supportedapplications Put operation not working.

Bug Number	Severity	Found in Release	Title
28785857	3	8.2	Measurement: Scheduled Task Failing with subpart number out-of-range.
28765247	3	8.1	DSR 8.1 MMI API rejects attempt to add IPFE TargetSet with Weight of 0.
28623737	3	8	Internal error for Error Codes Configuration under Policy and Charging.
28600309	3	8.3	SCTP connection fail events do not provide the details of local IP and port.
28568656	3	8.3	OCSG JDK version needs to be upgraded to 1.8.0_181.
28529608	3	8.3	Memory issue on Comcol DB.
28467673	3	8.3	DSR APIGW backup takes place at noon instead of midnight.
28465848	3	8.3	OCSG COMCOL DB issue with default value on OCSG.
28458387	3	8.3	SCEF SSST - Issues observed during high notification timeouts.
28440637	3	8.3	Online Help: Needs to be updated for vSTP KPIs.
28414256	3	8.3	All links of linkset are UP but still carrying around 50% load of configured TPS.
28365573	3	8.1	PcrfFqdn table has blank values for pcrfFqdn and pcrfRealm field for one record.
29412875	4	8.1	Update OAM guide for SNMP configuration.
28682742	4	8.3	vSTP sends SLTM without checking the existence of route.
28517211	4	8.2	GTT Action MMI Get is displaying Invalid value error for mrnSetId.
28000784	4	7	Issue with Mixing unihomed and multihomed SCTP conn having intersecting IPs.
27969036	4	8.3	vEIR: Alarm/Event is not generated if IMSI is greater than 15 or less than 5 digits.
26721143	4	8.2	vSTP capacity status per STP-MP.

Cloud Native Release 1.2

Table 22: Cloud Native Release 1.2, CNE Resolved Bugs lists bugs resolved in this release.

Table 22: Cloud Native Release 1.2, CNE Resolved Bugs

Bug Number	Severity	Found in Release	Title
OCCNE-1015	2	1.2	Correct Manual Procedure: Using SED to update kubespray cluster.yaml file
OCCNE-1087	2	1.2	CNE ToR port-channel configuration allows for detrimental network behavior
OCCNE-990	3	1.2	Add connection timeout to reboot after yum_update
OCCNE-1027	3	1.2	MetalLB subnet routes

Table 23: Cloud Native Release 1.2, NRF Resolved Bugs lists bugs resolved in this release.

Table 23: Cloud Native Release 1.2, NRF Resolved Bugs

Bug Number	Severity	Found in Release	Title
30141035	3	1.1	NF Register service operation is getting rejected with amf-region-id/amf-set-id/apiFullVersion aligned to Rel 15.2
30141067	3	1.1	RecoveryTime in NFProfile and NFSERVICE, ExpiryTime in NFSERVICEVersion, Validity time in NFSUBSCRIPTION are not proper according to RFC 3339
30141074	3	1.1	Duplicate Subscription need to be allowed with Success and with existing Subscription Id
30141161	3	1.1	Discovery query parameters need to be re-worked according to new specification
29910122	4	1.1	NfUpdate with Status as "Undiscoverable" is not updating properly
30141168	4	1.1	HeartBeat with no Profile Change is still triggering 200 Response (instead of 204: No Content)
30140915	Enhancement	N/A	NRF needs a functionality to screen service requests received from 5G NFs before allowing access to NRF services

Table 24: Cloud Native Release 1.2, SCP Resolved Bugs lists bugs resolved in this release.

Table 24: Cloud Native Release 1.2, SCP Resolved Bugs

Bug Number	Severity	Found in Release	Title
29929228	3	1.1	Host in service entries are not updated correctly during NF Re-Register/NF Update

Table 25: Cloud Native Release 1.2, UDR Resolved Bugs lists bugs resolved in this release.

Table 25: Cloud Native Release 1.2, UDR Resolved Bugs

Bug Number	Severity	Found in Release	Title
29636147	3	1.0	UDR Installation Does Not Assign IP Address to OCUDR-ambassador-admin svc
OCUDR-60	Enhancement	N/A	Subscription processing on UDR
OCUDR-62	Enhancement	N/A	Notification processing on UDR
OCUDR-147	Enhancement	N/A	PCF spec upgrade to 15.3.0

Cloud Native Release 1.1

Table 26: Cloud Native Release 1.1, CNE Resolved Bugs lists bugs resolved in this release.

Table 26: Cloud Native Release 1.1, CNE Resolved Bugs

Bug Number	Severity	Found in Release	Title
OCCNE-925	Enhancement	N/A	Deploy OCCNE in Openstack environment, complete deployment, configuration automatically

Table 27: Cloud Native Release 1.1, NRF Resolved Bugs lists bugs resolved in this release.

Table 27: Cloud Native Release 1.1, NRF Resolved Bugs

Bug Number	Severity	Found in Release	Title
29623203	3	1.0	GET ALL (NF Instances) response is not having _links object
29623007	4	1.0	NRF creating Duplicate Subscription
29623333	4	1.0	GET ALL (NF Instances) request is not handling optional parameters
29909891	Enhancement	N/A	NRF Compliance with Release 15.3

Table 28: Cloud Native Release 1.1, SCP Resolved Bugs lists bugs resolved in this release.

Table 28: Cloud Native Release 1.1, SCP Resolved Bugs

Bug Number	Severity	Found in Release	Title
29622977	3	1.0	SS: Virtual Services are not getting updated or deleted when Non Equivalent NF services registered with overlapping IP Endpoints
29622946	4	1.0	SS: Failure to process consecutive NF_REGISTERED event with same NF but different NF profile
29707805	Enhancement	N/A	SCP support for NRF & UDM services in reverse proxy mode
29707812	Enhancement	N/A	SCP to be Compliant with Rel 15.2 (UDM-UECM, UDM-SDM, NRF-Management and discovery service)
29909374	Enhancement	N/A	SCP support for AUSF UE-Authentication services in Reverse Proxy and Transparent Proxy Mode
29909380	Enhancement	N/A	SCP support for CHF SpendingLimitControl Service and ConvergedCharging services in Reverse Proxy and Transparent Proxy Mode
29909385	Enhancement	N/A	SCP Audit to support Discovery service for Audit
29913285	Enhancement	N/A	SCP Reverse Proxy Support for PCF SM Policy services with Rel 15.2 compatibility

Table 29: Cloud Native Release 1.1, SEPP Resolved Bugs lists bugs resolved in this release.

Table 29: Cloud Native Release 1.1, SEPP Resolved Bugs

Bug Number	Severity	Found in Release	Title
30092736	Enhancement	N/A	SEPP enhancements

Cloud Native Release 1.0.1

Table 30: Cloud Native Release 1.0.1 Resolved Bugs lists bugs resolved in this release.

Table 30: Cloud Native Release 1.0.1 Resolved Bugs

Bug Number	Severity	Found in Release	Title
29631361	2	1.0.0	NF CNE Installation Issues with HP Gen10 hardware Note: This only impacts installation on HP Gen10 hardware.

VNFM 4.5

Table 31: VNFM 4.5 Resolved Bugs lists bugs resolved in this release.

Table 31: VNFM 4.5 Resolved Bugs

Bug Number	Severity	Found in Release	Title
31000496	1	4.5	VNFM support adding TSA VIPs on the SOAM and on the Openstack Controller. Note: This feature is supported from the next DSR release.
30154726	1	4.5	VNFM Geo Redundancy.
31157462	1	4.5	VNFM Support to NTP source on IPv6 network, and to multiple NTP sources.
31445668	1	4.5	Openstack Rocky support for VNFM.
31514118	2	4.5	VNFM Key store password to be read from tomcat server XML.
31340532	3	4.5	Configuring TSA IP's on SOAM and Openstack controller.
31302833	3	4.5	Snmp Alert 2004 space outage for Mounted Persistence Cinder Volume.
31470920	3	4.5	Signaling VNF Configuration Changes to support higher VNFC.

Customer Known Bug List

DSR Release 8.4.x

Table 32: DSR Release 8.4.x Customer Known Bugs lists the known bugs and associated Customer Impact Statements. This information is provided for information purposes only.

Table 32: DSR Release 8.4.x Customer Known Bugs

Bug Number	Severity	Found in Release	Title	Customer Impact
23132640	3	7.3	DSR7.3: Issues configuring/reconfiguring PCRF records	If two sites are configured using the same SOAM network element, it is not possible to configure the same PCRF entry at both sites. Workaround: Use a different SOAM network element at each site. During installation it is possible to configure two SOAM network elements having different names, but having all of the same network configurations.
24529517	3	8.0	Time to create network routes increases with the number of configured routes	Customer must take into account the time it takes to create a large number of network routes.
24564563	3	8.0	Network devices added using GUI or MMI become Discovered on delete	No operational impact. The issue is transient and clears on its own. Workaround: None required.
24565936	3	8.0	Time to GET network devices increases with the number of configured items	When a full GET request is invoked by an MMI client for network devices, there is a long delay in the response. Workaround: Try filtering the request.
24796935	3	8.0	[AW:oampAgent] DB Late Write Nonactive alarm by the NO during Act > Stby transition	No operational impact. Alarm may be triggered when a switchover of NOAM occurs. Workaround: None required.
25505595	3	8.0	InstallOS operation on guests using PMAC failed with internal error reason	No impact to traffic. Filesystem full could prevent normal operations such upgrades or addition of new servers. The filesystem full condition was a result of an ISO being copied into an incorrect location (home/admusr). Workaround: Delete extra files that have been incorrectly copied to /home/admusr. This clears the alarm and allows normal operation.

Bug Number	Severity	Found in Release	Title	Customer Impact
25525005	3	8.0	Data export transfer now and test transfer does not provide feedback to the user	<p>The user does not see immediate notification regarding the test transfer action.</p> <p>Workaround: The user needs to select and view the Status & Manage > Tasks > Active Tasks screen to see the test task and its status.</p>
25529974	3	8.0	DSR MMI Issues in AppWorks MON URIs	No customer impact. Measurement budget is not currently enforced.
25575141	3	8.0	[PDRA:Recon] Disabling PDRA during USBR Recon fails with Error code #21648	User is not able to disable the PDRA function while running the reconfiguration plan for a USBR database. User can disable the function after all reconfiguration plans have completed.
25600027	3	8.0	[CfgDbReinit] Imysqld,apwSoapServer unexpectedly terminates during initialization	Minimal customer impact since issue occurs during reboot. The impact is that the server could take longer to come into service.
25637633	3	8.0	Unknown column 'ROLE' in 'where clause'	<p>Minimal customer impact since filter is not typically used for System OAM during upgrades. User receives error "Unknown column 'ROLE' in 'where clause'", when filtering on Server Role "System OAM" on the Administration > Software Management > Upgrade screen.</p> <p>Workaround: User can navigate to the desired System OAM tab to get the data.</p>
25651803	3	8.0	[PCA:CACD] Alarm for Degraded ComAgent Connections when USBRs are removed from session RD	<p>No functional impact. Alarm is raised for servers that do not belong to the active session SBR database.</p> <p>Workaround: To clear the alarm, restart the SBR servers on which the alarm is raised.</p> <p>***CAUTION*** If any DCA application is actively sending data to these SBR servers, this workaround is NOT recommended as it may cause traffic loss.</p>

Bug Number	Severity	Found in Release	Title	Customer Impact
25656089	3	8.0	ISO deployment got stuck for the site when servers were restarted	<p>During preparation for upgrade activity, if the user reboots a server while an ISO transfer is taking place, the transfer is stopped and does not restart until a manual workaround is performed.</p> <p>Workaround: Contact My Oracle Support for assistance.</p>
25669402	3	8.0	VIPs not activated when servers are in the same network but different sites	<p>If all SOAM servers (different sites) are in the same network, user is not able to access the SOAM using VIP when a spare SOAM server becomes active.</p> <p>Workaround: Contact My Oracle Support for assistance.</p>
25719122	3	8.0	[PDRA:ApplRestart] psbr abterm can occur during controlled shutdown/restart	<p>No service/traffic impact. An abterm may be generated during the process restart from the Status & Manage > Server screen.</p>
25730821	3	8.0	[ISBR:HaRes] SBRs may fail to de-register COMCOL resources when removed from RDs	<p>No impact to traffic since this issue was seen on a decommissioned server group that is not a part of the resizing plan. Also there should be no operational impact as MOP. Source documentation has been updated to required cleanup of decommissioned servers and server groups.</p> <p>Workaround: If there are any servers and server groups that are no longer being used after the completion of a resizing plan, then the user should delete them.</p>
25739523	3	8.0	ImpStore-OracleDB connection error after IDIH upgrade from 7.3 to 8.0	<p>Alarm may be raised on the IDIH GUI that does not clear automatically even after connection is successfully established.</p> <p>Workaround: User can manually clear the alarm by highlighting alarm on IDIH > System Alarms and selecting Terminate selected Alarm(s).</p>
26116286	3	8.1	USBR update and concurrentupdate stackevent resets the creationTime to 0	<p>If any DCA application uses update API or concurrentUpdate API, the creation time of a USBR record is reset to 0. So the DCA application business logic cannot rely on the USBR record creation time. However there is currently no requirement of DCA applications developed so far to use the creation time of the record.</p>

Bug Number	Severity	Found in Release	Title	Customer Impact
26186891	3	8.1	Observe routing fail events for UDTS message without mentioning its UDTS	Minimal customer impact. Fix would help in debugging message discarded at MTP3 due to routing failure. With fields currently reported in event #70064, user is not able to differentiate whether it is UDT/XUDT or an error message like UDT/XUDTS. Additional fields aid in troubleshooting which messages are being discarded by MTP3 due to a routing failure.
26228558	3	8.1	Alarm name should be read only on the Alarm Settings tab	No customer impact. Accessibility bug. Workaround: None.
26243446	3	8.1	Information shows as green even though HostName is incorrect	No functional impact. Error text is displayed with green background.
26290407	3	8.1	Maj Upg NOAM "10134 Server upgrade operation failed", but upgrade succeeded	There is a false alarm and the upgrade still progresses. The upgrade progress can be verified from the Upgrade screen. Also, upgrade logs can be verified to see the progress of the upgrade.
26939388	3	8.2	SDS Upgrade: NOAM servers do not switch over while auditing is in progress	No customer impact if documented workaround is followed. Workaround: NOAM upgrades are manually upgrade and the documented procedure instructs the operator to look for the audit clearance alarm.
26969222	3	8.2	Event #31000 GN_INTERN/WRN Upload failed [FileUploader.cxx:123] post 8.2	Minimal impact if the problem occurs. The alarm may cycle a few times and then clear after the system retries the file transfer. This has only been observed in one test system and did not have a long term impact to the system.
27087175	3	8.2	Device deployment failed alarms on IPFEs while upgrading from 7.1.1 to 8.2	In the unlikely event that the TPD provd server is down, and a device edit is pending, the edit is blocked and an alarm is raised. Bug title reflects an instance where this has happened once in the test cycle. Workaround: Perform a trivial edit to the device to retry the edit operation with tpdprovd.

Bug Number	Severity	Found in Release	Title	Customer Impact
27281145	3	8.2	MSU loss when preferred/non-preferred routes are changed 2 combined load sharing routes	<p>During Forced Rerouting/Controlled Rerouting, if link TPS is not configured to handle traffic spike, MSU loss may happen.</p> <p>Workaround: Link TPS should be configured so that it can handle traffic spikes during Forced/Controlled Rerouting.</p>
27301480	3	8.2	Configuration of TCAP GTT entries	<p>Customer impact is minimal. For TCAP GTA entry, if pkgtype is "Any" and there is already an entry for ITU TCAP translation (acn+opcode+pkgtype+gttsetname), then user cannot configure record for ANSI TCAP translation with same values for family,opcode,pkgtype,gttsetname.</p>
27355369	3	8.2	ERA process restart observed on NO while upgrading SDS 7.3 to 8.2	<p>During SDS upgrade, after switchover from primary cluster to upgraded cluster, user provisioned data. Abterms were observed for a process that monitors provisioning tables; however, the process is independent of provisioning.</p> <p>Workaround: None. Issue occurred once in partial upgraded system. There is no traffic impact on SDS. Affected process recovers from abterm automatically.</p>

Bug Number	Severity	Found in Release	Title	Customer Impact
27413746	3	8.2	SNMP Trapping screen issues for SNMPv3 engine ID field	<p>User cannot view generated SNMPv3 Engine ID on SNMP Trapping screen.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Navigate to Configuration > Networking > Networks. 2. Check the default network name for NOAM/SOAM according to the requirement (for example, to configure SNMP trapping for the NOAM/SOAM server group, "XMI" is default network name). 3. Execute command: <code>ip link grep -A1 <network name> grep ether awk '{print \$2}'</code> on NOAM for NOAM SG and on SOAM for SOAM SG where <network name> is text from step #2. Expected output of the command is formatted like: <code>02:2a:84:bc:81:0c</code> 4. Remove all of the colons (:) from the output of step #3 and concatenate it after "800001430c" for the engine ID. For example: <code>800001430c022a84bc810c</code>
28353971	3	8.3	OCSG does not validate special characters in ScsAsId delimiter	<p>If customer enters special characters in SCSASID_APN_Suffix_Delimiter in the OCSG console, the URL is rendered incorrectly.</p> <p>Workaround: APIGW user document describe the constraint on delimiter configuration parameter.</p>

Bug Number	Severity	Found in Release	Title	Customer Impact
28435966	3	8.3	Invalid notification sent if DRR is with missing Absent-Subscriber-Diagnostic-T4	<p>If an SMSC sends a DRR with invalid SM-Delivery-Outcome-T4 AVP value as 0, but missing Absent-Subscriber-Diagnostic-T4 AVP, the SCEF notification report is not correct.</p> <p>Notification report: <code>/daf-network/apigw/v1</code> <code>{</code> <code> "msisdn": "98873983003",</code> <code> "result": "Unknown</code> <code> DeviceTriggeringDeliveryResult: 255"</code> <code>}</code></p> <p>Workaround: None</p>
28545072	3	8.3	Duplicate OID name in DSR MIB eagleXgDsrDbHealthImpactNotify	<p>There is a duplicate name DbHealthImpact for different OIDs, which causes an issue when trying to load the MIB file onto the SNMP server.</p> <p>Workaround: In the MIB file, edit the OID name for the 31151 event from DbHealthImpact to DbHealthImpactPersist</p>
29314453	3	8.4	ApwSoapServer restarted in DSR SOA during upgrade release 8.3 to 8.4.84.10	<p>During system reboot when all the processes are coming up, apwSoapServer restarts if Imysql is not up before apwSoapserver. apwSoapServer comes up successfully after it is restarted.</p> <p>Workaround: None.</p>
29367175	3	8.4	Affected destination rule group lookup failure for MTP screening, why Event #70392 does not display affected point code value of the message which is discarded with reason: MTP screening received AFTDSTN that is not allowed	<p>Affected PC of MTP screening discarded message is not displayed in the event where MTP screening fails due to affected PC table rule.</p> <p>Workaround: None.</p>

Bug Number	Severity	Found in Release	Title	Customer Impact
29408014	3	8.4	On making the relativeCost value of secondary entry the same as relativeCost value of primary entry, load sharing is not happening with respect to the weight	<p>Load sharing does not occur correctly on changing to same cost. This could cause early onset of congestion due to it not using all available paths to load share.</p> <p>Workaround: Reconfigure the MAP load sharing group by deleting the existing mapset group. Or, avoid put operation for changing RC.</p>
29518322	3	8.4	MIX of ANSI + ITUI traffic (72K for 8 MPs per site) is not able to run on my performance setup, whereas same amount of traffic for just ITUI domain is running fine	<p>MIX traffic routing results in a failure of MSUs when running traffic is close to configured link TPS.</p> <p>Workaround: None.</p>
29545626	3	8.4	DSR 8.4: Remote Servers: Data Export	<p>MMI based remote server export configuration does not happen on the schedule time, that is, the remote server export does not occur if configured through the MMI when it is configured for a specific time/date.</p> <p>Workaround: Use GUI for configuring MMI based remote server export.</p>
30476980	3	8.4	vSTP:VstpMpMSUPr ocessingTimeAvg not pegged	<p>The measurement register “VstpMpMSUProcessingTimeAvg” in MP Performance measurement report on SO GUI is not getting pegged. Message processing is working fine.</p> <p>Workaround: No functional impact.</p>
30492770	3	8.4	vSTP: Trafic not shared equally in FGTTLS with same RC	<p>Loadsharing is not exactly 50-50, but load is getting shared in the ratio of 45:55 over the two links.</p> <p>Workaround: There is no system impact.</p>
30726704	3	8.4	[TDM]: On reboot VSTP MP is not coming up successfully if ADAX RPMs are installed in the VM	<p>If ADAX drives (for TDM) are installed in the vSTP MP and the VM is rebooted, it doesn't come up.</p> <p>Workaround: To circumvent this issue, the cloud-init service needs to be turned off using following commands:</p> <pre>sudo chkconfig cloud-init-local off sudo chkconfig cloud-init off</pre>

Bug Number	Severity	Found in Release	Title	Customer Impact
23421644	4	8.0	[AW]Login button not centered in the box on the Login Screen using a Firefox browser	No operational impact. Cosmetic issue.
23858799	4	8.0	Local pause update inconsistent	No operational impact. On several GUI screens there are two "Pause Updates" checkboxes, one with a scope global to the GUI and the other with a scope local to that menu item.
24377541	4	8.0	[Network Insert Screen]: VLAN ID field should not be mandatory	On the Networking > Networks [Insert] screen, the user needs to populate the VLAN ID field with a value of 1-4094 regardless of whether it is used or not.
24479659	4	8.0	IPFE target set issue with BIE and gcli	Exported IPFE files cannot be used for import operations.
24621473	4	8.0	The SBR HA and HA health check scripts accessing tables instead of SOAP APIs	No impact to customer.
24935222	4	8.0	LRGSYS: KPI screen taking a long time to display	Customer Impact: Potential GUI delay. On large topologies, it can take up to 90 seconds to draw the KPI screen. Workaround: None.
25028429	4	8.0	DSR back out: invalid response from User (yes vs. y) should not abort CLI session	If user does not type Y or N in response to, "Continue backout? [Y/N]:" , there is no reason given for the abort of the back out command. Workaround: The back out command can be re-entered.
25231844	4	8.0	Selecting Edit button with keyboard takes you to a blank screen	On the Diameter Common > MPs > Profiles screen, user cannot select Edit using the keyboard. Workaround: Use the mouse to edit MP profiles.
25254213	4	8.0	Copyright visible on screen	No operational impact. On the Diameter Common > Dashboard > Configuration > Metric Threshold Configuration Sets screen, the copyright information is present above the table description.

Bug Number	Severity	Found in Release	Title	Customer Impact
25379612	4	8.0	IDIH: 80.17.2: OAM GUI showing extra Mediation input Sources	No operational impact. Extra mediation source entries may be displayed. If the IDIH has ever been modified to retrieve data from another DSR SOAM, table entries for the server hosts from other SOAM are displayed on IDIH OAM application screen at Applications > DSR > Mediation Input Sources . Workaround: Disregard hosts that no longer apply to the current configuration.
25462998	4	8.0	Pause update not functioning on ComAgent screens	Minimal customer Impact: The GUI status screens under "Communication Agent -> Maintenance" will continue to update when pause update checkbox is selected.
25542610	4	8.0	When NMS server added user may return to a screen with addition not reported	Update may not be reflected on GUI until it is manually refreshed. Workaround: None. User needs to navigate back to the desired screen rather than be automatically returned to it.
25573507	4	8.1	IPFE validation missing in IPFE ->Configuration->Options screen	If wrong IP address is used then TSA will not work. This will only happen when operator is configuring the IP address incorrectly. In field, operator shall use the correct IP address and verify the configuration before starting the traffic.
25584247	4	8.0	Misleading DCA Custom Event Template Throttling Description	Misleading 'Alarm Throttling Interval' description. Minimum value is incorrect. [Default = 60; Range = 0-300] should read [Default = 60; Range = 5-300].
25590495	4	8.0	DSR MMI KPI Groups not getting validated correctly	More information may be provided than expected. The MMI supplies information for all KPI Groups in the database regardless of whether the feature has been activated or not.
25590532	4	8.0	DSR MMI Screen name seen as UNKNOWN in the Security Logs	No operational impact. Although "screen name" field of the security log displays "UNKNOWN" all applicable information is available as text in the security log.
25590581	4	8.0	DSR MMI Restrict the Resource Name to not use URI reserved keywords	Customer cannot use reserved keywords in MMI URI request.

Bug Number	Severity	Found in Release	Title	Customer Impact
25616683	4	8.0	Capacity Summary screen constraints inconsistent with Online Help doc	Online help has an inaccuracy concerning max local nodes =32 instead of 48.
25643859	4	8.0	GUI: SBR Status screen repeating display of server groups with >25 SGs.	Minimal GUI impact. On the SBR -> Maintenance-> SBR Status screen, when the number of Server Groups(SGs) in a place association displayed (rows) is greater than 25, rows 26 on are a repeat of the first SGs displayed at the top of the screen Workaround: View the SGs in a Place Association using different scoping to limit the number of SGs to less than 25.
25660736	4	8.0	Back out: SOAM returns errors with verifyUpgrade and verifyBackout	The only impact is ERRORS may be returned when running verifyUpgrade and verifyBackout. The back out completes successfully. Workaround: None required. The back out completes successfully.
25697793	4	8.0	POST bulk/configurator fail w/ 400 response: issue connecting to hosts	If this error occurs, the user needs to retry the command.
25737480	4	8.1	When we insert device, XSI IPv4 address replaces with IPv6 address.	Operator is not able to add two devices at the same time.
25975473	4	8.1	M2PA link status gets displayed as UP though its down	No traffic loss or service loss. VSTPLinkStatus may report M2PA link status as available after vSTP process manually stopped.
26188293	4	8.1	[DASH:P&C] DSR Dashboard PCA average Ing MPS instead reported as RxPdraMsgRate	Dashboard screen does not include OCDRA MPS. It's showing only PDRA MPS. "SBR Sessions" under "Servers" tab SBR Sessions field is not including OCDRA Sessions count.

Bug Number	Severity	Found in Release	Title	Customer Impact
26270776	4	8.1	Process utility spikes seen for pingAllLivePeer and iptablesAdm	<p>This has no impact on the advertised performance figures.</p> <p>While testing smallest VM resource profile (i.e., 4 vCPUs/8G RAM), we observed an anomaly wherein pingAllLivePeer and iptablesAdm tasks results in CPU spikes. The benchmarked / advertised MPS (i.e. 6K RBAR MPS per DA-MP) has already considered these spikes and runs fine with this anomaly.</p>
26313885	4	8.1	Status & Manage > Files is not accessible from NO and throws error	<p>In NOAM and SOAM when there will be large number of files present inside File Management Area (/var/TKLC/db/filemgmt) and user clicks on "Status & Manage -> Files" option on GUI for that server, then apwSoapServer will become slow as it will utilize the max CPU to sort the files in memory. This will impact the apwSoapserver functionality as well as that overall server performance.</p> <p>This is limited to OAM servers and will not impact Signaling Servers. This is a legacy issue.</p> <p>This issue happened because remote server copy was not deleting the files after copying them to remote server. A separate Bug will be raised to address this issue.</p>
26710183	4	8.2	RE when edited to remove the destination, should not be saved	<p>If an RE is edited and all destination are set to None then any FABR queries to this particular RE will fail (ATTACH failures will be seen).</p> <p>Workaround: None. Though as a note: for any FABR query to pass, a valid destination must be assigned to an RE.</p>
27182197	4	8.2	Domain ID field in filter gets disabled after filtering it once	In Main Menu: SDS -> Configuration -> Subscribers screen, after filtering on Domain ID, if the page is reloaded the Domain ID text box is greyed out and disabled.
29451723	4	8.4	Observed "success" and "Error" confirmations together when applied filter in KPIs screen	<p>KPI filter option screen is working properly. This is a cosmetic issue because of which the success and error messages box are visible after pressing Go button.</p> <p>Workaround: None.</p>

Cloud Native Release

Table 33: Cloud Native Customer Known Bugs lists the known bugs and associated Customer Impact Statements. This information is provided for information purposes only.

Table 33: Cloud Native Customer Known Bugs

Bug Number	Severity	Found in Release	Title	Customer Impact
OCCNE-1265	2	OCCNE 1.2	ToR issues reset to client connections after failover	There is significant impact on a TOR switch failover if the workaround is not in place. Coordinating NAT tables between switches can be done to mitigate the impact.
29622956	3	1.0	NullPointerException occurs in notification module when de-register comes immediately after register	In case NF deregister comes immediately after NF register this problem will come and De register will not happen. Workaround: Resend de-register notification from NRF or make sure de-register does not immediately follow register.
29946760	3	1.1	SCP is not picking NRF Management IP for routing NRF Management Service messages	NRF management service requests will get routed to Discovery service. Workaround: Use same IP Endpoints for NRF -management and Discovery services.
30070215	3	1.2	Partial supi overlap cases - Rules are not updated correctly when NF re-register with updated supi range	After updating the supi range from partial to complete overlap, the residual entry (i.e., the partial rule) may affect the LB/AR if this rule gets hit first. Workaround: Manual removal of the partial rule from Virtual Service.
30070598	3	1.2	Rest option is not supported for the parameter message_type_rege x to configure Message priority filter for SMF	User will not be able to configure message priority for (1) {apiRoot}/nsmf-pdusession/v1/sm-contexts/{smContextRef}/modify, (2) {apiRoot}/nsmf-pdusession/v1/sm-contexts/{smContextRef}/release, (3) {apiRoot}/nsmf-pdusession/v1/pdu-sessions/{pduSessionRef}/modify, (4) {apiRoot}/nsmf-pdusession/v1/pdu-sessions/{pduSessionRef}/release Workaround: None
30070604	3	1.2	ServiceEntry is not getting pushed to	If only the FQDN is given in the NRF details, then messages will not be forwarded

Bug Number	Severity	Found in Release	Title	Customer Impact
			envoy and failing in pilot with error as "Malformed IP Found"	<p>to NRF.</p> <p>Workaround: Manual Deletion of service entry for the NRF Virtual service will make it work if NRF is in cluster.</p>
30071394	3	1.2	Outlier Detection: Instead of taking ipEndpoints of NF with multiple pods, service ip is getting picked up in case of in-cluster deployment of any NF	<p>Retries at pod level will not get tried in case of in-cluster deployment of an NF.</p> <p>Workaround: No work around is available; however, this works fine for out-of-cluster NF deployments.</p>
30141184	3	1.2	Host header in HTTP2 message is getting rejected and throwing exception by NRF	<p>NRF is not able to process HTTP/2 message having host header in it.</p> <p>Workaround: Client should avoid sending Host headers as in HTTP/2; authority headers should be used.</p>
30164410	3	1.2	NF screening Error Code for Rejection set to 500 is allowing the screening	<p>When Error Action is set as SendError and ErrorCode is set as 500, when Screening fails NRF still allows the message.</p> <p>Workaround: Operator should not configure Error Code 500.</p>
OCCNE-738	3	OCCNE 1.2	Update kubespray to install docker-engine from OL instead of docker-ce from docker	No system impact. Identified in OCCNE 1.2.0 as a priority item, as docker-ce is no longer supported by Docker.
OCCNE-991	3	OCCNE 1.2	Correct osinstall yum update state	Possible significant impact if a new yum update picks up an incompatible RPM. Possible to restrict Yum channel subscription to specific channels on Bastion host and central repo.
OCCNE-1464	3	OCCNE 1.2	OCCNE 1.2.0 Installation Guide Does Not Provide Guidance on Firmware Version	Installation procedure could fail if running on a server with older firmware.
29910078	4	1.1	Operation "Move" is not supported in Patch	<p>Move operation can't be used.</p> <p>Workaround: None.</p>

Bug Number	Severity	Found in Release	Title	Customer Impact
OCUDR-445	Enhancement	N/A	UDR 5G Error Unsolicited response received on idle HTTP channel starting with "0\r\n\r\n"; err=	Workaround: Remove the line "transfer-encoding: chunked" in the targets DELETE.txt file. A second workaround is to use the Oracle proxy servers that then target the udr and the error is not seen.
OCUDR-455	Enhancement	N/A	Notify Service delays notifications to PCF during traffic run	Notify service not able to handle bulk notification traffic towards a single notification URI since it uses single connection to push the traffic. Because of that notifications are not sent to PCF immediately after the entity are modified in UDR.
OCUDR-482	Enhancement	N/A	SM Policy Data GET query field parameter SNSSAI format change	SM Data GET query from PCF with snssai query parameter contains json object instead of string. As a result, an invalid query parameters error is thrown in UDR. Workaround: UDR should process the GET query with json format of snssai query string.
OCUDR-483	Enhancement	N/A	Notifications payload format change for PCF notifications	PCF does not process the empty string in the Notification payload for Entity deletion use case in UDR. Workaround: <ul style="list-style-type: none">•UDR needs to send null json value to PCF for any entity deletion scenario.•For Delete Subscriber use case UDR needs to send all defined entities for PCF in 29.519 F30 spec with null value.
OCUDR-446	Enhancement	N/A	Content-type should be changed when UDR sends error response.	UDR returns error response with content-type as application/json. Workaround: As per spec 29505-v15.4.0, error response should have content-type "application/problem+json" for the resource operations.
OCUDR-418	Enhancement	N/A	UDR is not validating the conditional attributes for UDM APIs	UDR does not validate if the conditional attributes are present in the data blob based on their dependencies.

Chapter 8:

Oracle References and Services

Topics:

My Oracle Support (MOS)
Emergency Response

This chapter describes how to obtain help, where to find related documentation, and provides other general information.

My Oracle Support (MOS)

MOS (<https://support.oracle.com>) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select 2 for new service request.
2. Select 3 for hardware, networking, and Solaris operating system support.
3. Select one of the following options:
 - For technical issues such as creating a new Service Request (SR), select 1.
 - For non-technical issues such as registration or assistance with MOS, select 2.

You are connected to a live agent who can assist you with MOS registration and opening a support ticket.

MOS is available 24 hours a day, 7 days a week, and 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US) or by calling the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. The emergency response provides immediate coverage, automatic escalation, and other features to ensure the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

