

**Oracle® Communications
DSR Release 8.2.1**

Release Notice

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Oracle Communications, DSR Release Notice, Release 8.2

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Chapter 1: Introduction

Topics:

DSR 8.2 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 Oracles 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 8.2 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.

Revision History

| Date | Revision | Description |
|------------|----------|--|
| 01/09/2018 | 01 | Initial release for DSR 8.2 GA |
| 02/08/2018 | 02 | Initial release for DSR 8.2.1 GA |
| 05/18/2018 | 03 | HP part number and description changed from: 785069-B21 HPE 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive (See Figure 5- DL380 GEN9 Server with up to 8 SFF Hard Disk Drive- HDD Locations Detail) to: 872479-B21 HPE 1.2 TB 12G SAS 10K rpm SFF (2.5-inch) SC Ent 3yr Warranty Hard Drive |
| 08/13/2018 | 04 | Updated known bug list with bugs 28289014 and 28169961 |
| 06/22/2020 | 05 | Updated the document for Bug 28224086 |

Chapter 2:

Feature Descriptions

Topics:

DCA Security Application (Bug 23740146)
Display Mediation Performance Metrics (Bugs 25203514 and 25866323)
License Measurements Feature (Bug 19104288)
FABR Support for External-Identifier (Bugs 23642377 and 26263873)
RBAR External-Identifier Support (Bugs 26342388 and 26573812)
DSR Deployment Using OpenStack Heat Templates (Bugs 24925922 and 26050662)
DSR Merge Table Updates to Limit Merge Scope Up to SOAM (Bugs 19118167 and 19117177)
Deprecated/Obsolete Software (Bug 28224086)
MMI (Bug 26134326)
vSTP Features (Bugs 25925997, 25972614, 25972623, 25972649, 25973909, and 26093757)
Availability Group Enhancement for DSR Site Upgrade (Bug 25065437)
Firewall Isolation of Internal Services from Signaling Interfaces (Bug 26043696)
Stallion Data Collector Productization (Bug 26181457)
VE-DSR Supports X7-2 (Bug 26358702)

This chapter provides a summary of each feature released in DSR 8.2.1

DCA Security Application (Bug 23740146)

The DSR Security Application (DSA) screens various diameter messages received from roaming partners for possible vulnerabilities. The application is deployed at DSR acting as DEA for ingress messages received from external foreign network and for egress messages sent to external foreign network. DSA has implemented various countermeasures to detect vulnerabilities in an ingress diameter message from a foreign network. All the countermeasures are executed in a predefined sequence for detecting vulnerability of the message.

Display Mediation Performance Metrics (Bugs 25203514 and 25866323)

Diameter Mediation continues to be a very effective tool for solving field issues as well as address functionality gaps in other DSR features; however, this functionality comes with inherent CPU cost to run additional logic (for adding, deleting or modifying AVPs) on diameter messages.

This feature provides CPU utilization reporting of DSR threads, which enables a user to analyze mediation performance impact. It provides the average processing of each Template in microseconds. This feature also retrieves the average processing time of each template through MMI.

License Measurements Feature (Bug 19104288)

The license measurements feature introduces a simple method to report utilization of the licensed capacity, replacing the manual method to determine if customers are using more or less resources granted by the licenses they purchased.

Licensing model on DSR relies on a large number of definitions that are documented in License Information User Manual. Among these licensing definitions, the following ones are driving capacity planning:

- MPS License
- PCA Proxy License
- Subscriber Metric License

Licenses for resources utilization including number of messages per second (MPS), number of concurrent sessions for stateful applications (P-DRA, OCS proxy), and subscriber metric for SDS are all defined at least at a network-wide level.

While MPS license is defined at a network-wide level, DSR's measurements and metrics used to assess utilization report are provided at a connection level or at a server level. Therefore, determining license utilization report requires some manual post-processing.

Similarly, there is no measurement or metric to determine the entire number of routing entity entries accurately in SDS.

FABR Support for External-Identifier (Bugs 23642377 and 26263873)

In the SDS, the External-Identifier is an attribute of the subscriber similar to MSISDNs and IMSIs. It is provisioned similarly.

At the DP level, to improve performance, there are tables that provide lookups from MSISDNs and IMSIs to end points today. Similar tables are called upon to allow a fast lookup from External-Identifiers to an end point.

RBAR External-Identifier Support (Bugs 26342388 and 26573812)

External-Identifiers being UTF8 Strings do not fit well within the paradigm of a range-based search. Hence, there is insufficient value in building range-based support in RBAR for External-Identifiers; however, RBAR can be very useful in providing a full match Domain-Identifier based search.

DSR Deployment Using OpenStack Heat Templates (Bugs 24925922 and 26050662)

DSR 8.2 Cloud Deployment has added the ability to deploy in OpenStack cloud, and generate the necessary HEAT template, service descriptor, and parameter files that could be imported into the OpenStack. DSR software implements business logic that executes on the DSR VMs to configure the DSR topology automatically.

This feature adds the following capability to the DSR software:

- Is deployed in OpenStack cloud using the HEAT templates generated by DSR AT
- Bootstrap the NOAM with a bulk xml that does not contain the IP addresses of any other VM, that is, configure servers without IP addresses, Server Groups without Servers, etc.
- Each VM gets an IP address and makes MMI call to the NOAM to add its IP addresses in the server configuration, get the initial configuration (TKLCCConfigData.sh) from NOAM, configure itself, and then add itself into the appropriate server group using another MMI call to NOAM.

This deployment is restricted to the core signaling configuration, that is, the DSR topology includes the OAM servers (via NOAM and SOAM) and signaling MPs (DA-MP and IPFE). The feature includes single-site and multi-site deployment testing.

DSR Merge Table Updates to Limit Merge Scope Up to SOAM (Bugs 19118167 and 19117177)

DSR now takes advantage of the capability to merge tables to an NO or SO level thus reducing the total network bandwidth required to merge DSR tables and improving DSR's efficiency in the network.

Deprecated/Obsolete Software (Bug 28224086)

The following software is no longer compatible with DSR, version 8.2 onwards:

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

Note: DAMP Active-Standby Configuration needs to be migrated to DAMP Multi-Active Cluster Configuration prior to DSR 8.2.x or later upgrade or install.

MMI (Bug 26134326)

MMIs have been enabled for the following:

- RBAR
 - Applications
 - Exceptions
 - Destinations
 - Address Tables
 - Individual Addresses
 - Range Addresses
 - System Options
 - Domain Addresses
- Diameter MOs required for RBAR
 - MCCMNC
 - Common Application Options

vSTP Features (Bugs 25925997, 25972614, 25972623, 25972649, 25973909, and 26093757)

GTT features (Transaction Origin-Based Routing, Flexible Linkset Origin-Based Routing, and MBR) and 7-level search have been developed to allow GTT routing based on:

- incoming linkset, CdPA and CgPA parameters,
- TCAP opcode, and
- MAP component (that is, IMSI, MSISDN)

Additionally, a desire to flexibly provision routing translation hierarchy. That is, start with CdPA, opcode, OPC, and move onto additional translations to refine the routing. Furthermore, the continued addition of SCCP and TCAP parameters to be used as routing keys adjusts the GTT routing and search algorithms.

vSTP also now supports a large capacity network (100K MPS).

Availability Group Enhancement for DSR Site Upgrade (Bug 25065437)

DSR 8.2 automatic site upgrade enhancements have been made so users have the flexibility to add more upgrade cycles.

Firewall Isolation of Internal Services from Signaling Interfaces (Bug 26043696)

This is an enhancement over the DSR Signaling Feature to restrict any IP traffic on the signaling interface. Currently, signaling firewall dynamically configures the IP rules to block/unblock the diameter traffic only. This enhancement tightens the security on the signaling interface by completely blocking the non-diameter traffic coming on the signaling interface. This maintains backward compatibility by not disturbing the ICMP pings and TCP Ack on signaling interfaces.

Stallion Data Collector Productization (Bug 26181457)

Previously, the data collection script was available using a patch so it could be delivered to a production DSR system and would not have to be removed like tools. Per Oracle policy, a tool can be delivered to a system, used, but must be removed. This new feature includes the data collection script in the DSR distribution so it no longer needs to be delivered using patch.

VE-DSR Supports X7-2 (Bug 26358702)

Oracle x7-2 support for DSR.

Chapter 3:

DSR Release 8.2.1 Media and Documentation

Topics:

Media Pack
Load Line Up
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 1: 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.

Table 1: Media Pack Contents for 8.2

| Part Number | Description |
|-------------|--|
| | <p>Oracle Communications Diameter Signaling Router 8.2.0.0.0_82.15.0 MIBS</p> <p>The Media Pack covers the following MIB information:</p> <ul style="list-style-type: none"> DSRmib-8.2.0.0.0_82.15.0.zip includes EAGLEXGDSR-MIB.mib and EAGLEXGDSR-TC.mib. IDIHmib-8.2.0.0.0_82.15.0.zip includes NSP-FORWARDING_IDIH_8.2.0.0.0_82.15.0-MIB. PMACmib-6.5.0.0.0_65.10.0.zip includes pmacAppAlarms.mib. SDSmib-8.2.0.0.0_82.15.0.zip includes SDS-MIB.mib and SDS-TC.mib. TPDmib-7.5.0.0.0_88.45.0.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-3.5.0.0.0_88.45.0.zip includes tklc_TVOEalarms.mib. |
| | Oracle Communications Diameter Signaling Router 8.2.0.0.0_82.15.0 |
| | Oracle Communications Diameter Signaling Router 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Diameter Signaling Router Steering Of Roaming Application 8.2.0.0.0_82.15.0 |
| | Oracle Communications Diameter Signaling Router Zero Balance Application 8.2.0.0.0_82.15.0 |
| | Oracle Communications Diameter Signaling Router Diameter Security Application 8.2.0.0.0_82.15.0 |
| | Oracle Communications Diameter Signaling Router, Full Address Resolution 8.2.0.0.0_82.15.0 |
| | Oracle Communications Diameter Signaling Router, Full Address Resolution 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.0.0.0_82.15.0 OVA |

| Part Number | Description |
|-------------|--|
| | Oracle Communications Integrated Diameter Intelligence Hub Database TVOE Guest 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Tekelec Platform Management and Configuration 6.5.0.0.0_65.10.0 |
| | Oracle Communications Tekelec Platform Distribution 7.5.0.0.0_88.45.0 |
| | Oracle Communications Tekelec Virtual Operating Environment 3.5.0.0.0_88.45.0 |

Table 2: Media Pack Contents for 8.2.1

| Part Number | Description |
|-------------|--|
| | <p>Oracle Communications Diameter Signaling Router 8.2.1.0.0_82.17.0 MIBS</p> <p>The Media Pack covers the following MIB information:</p> <ul style="list-style-type: none"> DSRmib-8.2.1.0.0_82.17.0.zip includes EAGLEXGDSR-MIB.mib and EAGLEXGDSR-TC.mib. IDIHmib-8.2.1.0.0_82.17.0.zip includes NSP-FORWARDING_IDIH_8.2.1.0.0_82.17.0-MIB. PMACmib-6.5.0.0.0_65.10.0.zip includes pmacAppAlarms.mib. SDSmib-8.2.1.0.0_82.17.0.zip includes SDS-MIB.mib and SDS-TC.mib. TPDmib-7.5.0.0.0_88.45.0.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-3.5.0.0.0_88.45.0.zip includes tklc_TVOEalarms.mib. |
| | Oracle Communications Diameter Signaling Router 8.2.1.0.0_82.17.0 |
| | Oracle Communications Diameter Signaling Router 8.2.1.0.0_82.17.0 OVA |
| | Oracle Communications Diameter Signaling Router Steering Of Roaming Application 8.2.1.0.0_82.17.0 |
| | Oracle Communications Diameter Signaling Router Zero Balance Application 8.2.1.0.0_82.17.0 |
| | Oracle Communications Diameter Signaling Router Diameter Security Application 8.2.1.0.0_82.17.0 |

| Part Number | Description |
|-------------|--|
| | Oracle Communications Diameter Signaling Router, Full Address Resolution 8.2.1.0.0_82.17.0 |
| | Oracle Communications Diameter Signaling Router, Full Address Resolution 8.2.1.0.0_82.17.0 OVA |
| | Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Mediation 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Integrated Diameter Intelligence Hub Database TVOE Guest 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Database 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.0.0.0_82.15.0 |
| | Oracle Communications Integrated Diameter Intelligence Hub Applications 8.2.0.0.0_82.15.0 OVA |
| | Oracle Communications Tekelec Platform Management and Configuration 6.5.0.0.0_65.10.0 |
| | Oracle Communications Tekelec Platform Distribution 7.5.0.0.0_88.45.0 |
| | Oracle Communications Tekelec Virtual Operating Environment 3.5.0.0.0_88.45.0 |

Load Line Up

DSR 8.2 contains the following components:

- Application Lineup
 - DSR 8.2.0.0.0-82.15.0
 - IDIH 8.2.0.0.0-82.15.0
 - SDS 8.2.0.0.0-82.15.0
- Platform Line-up
 - TPD: 7.5.0.0.0-88.45.0 (DSR/SDS/IDIH/PMAC Baseline; Oracle Linux 6.8)
 - TVOE: 3.5.0.0.0-88.45.0 (Based on qemu-kvm-0.12.1.2-2.491.el6)
 - PMAC: 6.5.0.0.0-65.10.0
 - COMCOL 7.4.0.16.0-13795
 - AppWorks Build 82.16.0.0
 - EXGSTACK Build 8.2.0.0.0-82.15.0
 - Oracle FW 3.1.7 (minimum)

- HP FUP 2.2.11 (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

DSR 8.2.1 contains the following components:

- Application Lineup
 - DSR 8.2.1.0.0-82.17.0
 - IDIH 8.2.0.0.0-82.15.0
 - SDS 8.2.1.0.0-82.17.0
- Platform Line-up
 - TPD: 7.5.0.0.0-88.45.0 (DSR/SDS/IDIH/PMAC Baseline; Oracle Linux 6.8)
 - TVOE: 3.5.0.0.0-88.45.0 (Based on qemu-kvm-0.12.1.2-2.491.el6)
 - PMAC: 6.5.0.0.0-65.10.0
 - COMCOL 7.4.0.16.0-13795
 - AppWorks Build 82.16.0
 - EXGSTACK Build 8.2.1.0.0-82.15.0
 - Oracle FW 3.1.7 (minimum)
 - HP FUP 2.2.11 (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

Documentation Pack

All documents available for download from the Oracle Help Center (OHC) site (<http://docs.oracle.com/en/industries/communications/>) are listed in Table 3: Documentation Pack Contents.

Note: This list is accurate at the time of release, but it is subject to change. See the Oracle Help Center for the latest information.

Table 3: Documentation Pack Contents

| Release Notices and Licensing Information User Manuals |
|---|
| DSR 8.2 Release Notice |
| DSR 8.2 Licensing Information User Manual |
| DSR Planning, Installation, Upgrade, and Disaster Recovery |
| Feature Guide |

| |
|---|
| 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 |
| DSR Rack Mount Server Installation Guide |
| DSR Rack Mount Server Disaster Recovery Guide |
| DSR Rack Mount Server Interconnect Document |
| DSR C-Class Disaster Recovery Guide |
| DSR/SDS Failover Guide |
| DSR VM Placement and CPU Socket Pinning Tool |
| DCA Feature Activation Procedure |
| DTLS Feature Activation Procedure |
| FABR Feature Activation Procedure |
| GLA Feature Activation Procedure |
| MAP-Diameter Feature Activation Procedure |
| Mediation Feature Activation Procedure |
| Policy and Charging DRA Feature Activation Procedure |
| RBAR Feature Activation Procedure |
| DSR Network Impact Report |
| DSR Security Guide |
| DSR Security App Using Mediation Example Procedure |
| Zero Balance Application User's Guide |
| HEAT Templates |
| Cloud Installation and Upgrade |
| DSR Cloud Installation Guide |
| DSR Cloud Software Upgrade User's Guide |
| DSR Cloud Benchmarking Guide |
| DSR Cloud Disaster Recovery Guide |
| SDS Cloud Installation Guide |
| SDS Cloud Disaster Recovery Guide |
| Diameter Signaling Router Core Document Set |
| DSR Getting Started |
| Hardware Documentation Roadmap Reference |

| |
|---|
| Operation, Administration, and Maintenance (OAM) User's Guide |
| Diameter User's Guide |
| Communication Agent User's Guide |
| Policy and Charging Application (PCA) User's Guide |
| Mediation User's Guide |
| Range Based Address Resolution (RBAR) User's Guide |
| Full Address Based Resolution (FABR) User's Guide |
| Session Binding Repository (SBR) User's Guide |
| IP Front End (IPFE) User's Guide |
| Diameter Common User's Guide |
| MAP-Diameter IWF User's Guide |
| RADIUS User's Guide |
| SS7/SIGTRAN User's Guide |
| Transport Manager User's Guide |
| Gateway Location Application (GLA) User's Guide |
| Diameter Custom Application (DCA) User's Guide |
| Diameter Custom Application (DCA) Programmer's/Developer's Guide |
| Diameter Custom Application (DCA) Security Application User's Guide |
| Diameter Custom Application (DCA) Steering of Roaming User's Guide |
| Alarms and KPIs Reference |
| Measurements Reference |
| MMI API Specification |
| vSTP User Guide |
| Related Publications Reference |
| DSR Compliance Matrix |
| Subscriber Data Server Document Set |
| SDS Getting Started |
| SDS User's Guide |
| SDS Provisioning Interface |
| SDS Initial Installation and Configuration Guide |
| SDS Software Upgrade Procedure |
| SDS Disaster Recovery Guide |
| Integrated Diameter Intelligence Hub (IDIH) Document Set |

| |
|---|
| 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 System Alarms User's Guide |
| IDIH Log Viewer Administrator's Guide |

Chapter 4:

Supported Hardware Baseline

Topics:

Supported Hardware Baseline
Oracle Hardware
HP Hardware

The Hardware identified in Table 4: Supported Hardware Baseline comprises the hardware and server versions that have been verified with this release.

Supported Hardware Baseline

Table 4: 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 |
| 7117125 | Oracle | 7117125 | Oracle Storage 12 Gb SAS PCIe RAID HBA, internal: 16 port and 2 GB memory (for factory installation) | 1 |

| Oracle X7-2 for DSR (AC Power) | | | | |
|--|----------|---|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 7116456 | Oracle | 7116456 | Processor clip (for factory installation) | 2 |
| 7117386 | Oracle | 7117386 | SAS cables for 1U (for factory installation) | 1 |

| Oracle X7-2 for DSR (AC Power) | | | | |
|---|----------|---|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 7113235 | Oracle | 7113235 | 1 Intel® Xeon® Platinum 8160 24-core 2.1 GHz processor (for factory installation) | 2 |

| Oracle X7-2 for DSR (AC Power) | | | | |
|--------------------------------|----------|----------------------|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 7110359 | Oracle | 7110359 | ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U | 1 |

| Oracle X6-2 for DSR (AC Power) | | | | |
|--|----------|---|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 7111107 | Oracle | 7111107 | One 1.2 TB 10000 rpm 2.5-inch SAS-3 HDD with marlin bracket (for factory installation) | 2 |

| Oracle X6-2 for DSR (AC Power) | | | | |
|---|----------|--|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |
| 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 |
| 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 |
| 1109A-Z | Oracle | 1109A-Z | Sun Dual 10GbE SFP+ PCIe Low Profile Adapter | 2 |

| Netra X5-2 AC Power for DSR | | | | |
|--------------------------------------|----------|---|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |
| 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 |
| 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 DC 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, 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 | | | | |
| 7112829 | | ORACLE X5-2 AC Copper for Production | | 1 |

| Oracle X5-2 for DSR (AC Power) | | | | |
|--|----------|---|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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) | | 1 |
| 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 | | | | |
| 7112829 | | ORACLE X5-2 AC Fiber for Production | | 1 |

| Oracle X5-2 for DSR (AC Power) | | | | |
|---------------------------------------|----------|--|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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) | | 1 |
| 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 |
| 7110359 | Oracle | 7110359 | ATO,DVD,GEN5,BLANK FILLER PANEL,1U/2U | 1 |

| Oracle X5-2 for DSR (AC Power) | | | | |
|--------------------------------|----------|----------------------|----------------------------|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 | OCDSDR 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 |

| Gen 8 Blades | | | | |
|------------------------|------------------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| Gen8 Blade SOAM | | | | |
| 7108027 | | | HP D9N30A_BLA460C 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 |
| Gen8 Blade DIH | | | | |
| 7108104 | Hewlett-Packard | 406740-B21 | HP-406740-B21_1GBE_PASS THRU MODULE_001_ROHS | 1 |
| 7108027 | | | HP D9N30A_BLA460C 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 |

| Gen 8 Blades | | | | |
|--------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| Gen 8 Server (DC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| Gen 8 Server (DC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| Gen 8 Server (DC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| Gen 8 Server (DC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| Gen 8 Server (DC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| Gen 8 Server (DC Power) | | | | |
|-------------------------|-----------------|----------------------|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 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 |

| Gen 8 Server (AC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 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 |

| Gen 8 Server (AC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| SDS 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 |

| Gen 8 Server (AC Power) | | | | |
|-------------------------|-----------------|----------------------|---|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 |

| 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 |
| Gen 8 IDIH Server | | | | |
| 7108067 | | | HP D9U37A_DL380 GEN8_AC_SERVER_005_ROHS | 1 |
| 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 |

| Gen 8 Server (AC Power) | | | | |
|-------------------------|-----------------|----------------------|--|----------|
| Oracle Part Number | Supplier | Supplier Part Number | Description | Unit Qty |
| 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 |
| 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 http://docs.oracle.com/cd/E91277_01/index.htm.

Chapter 6: DSR Release 8.2 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 8.2 are listed Table 5.

Table 5: DSR Release 8.2.0/8.2.1 Upgrade Paths

| Component | From | To |
|-----------|--|-------|
| DSR | 7.0.1, 7.1.x, 7.2.x, 7.3.x, 7.4.x, 8.0.x, 8.1, 8.1.1 | 8.2.1 |
| SDS | 7.1.x, 7.2.x, 7.3.x, 7.4.x, 8.0.x, 8.1, 8.1.1 | 8.2 |
| iDIH | 7.0.1, 7.1.x, 7.2.x, 7.3.x, 7.4.x, 8.0.x, 8.1, 8.1.1 | 8.2.1 |

Note: Any upgrade other than listed above is not recommended or supported. Version 8.2 is also supported as a new or fresh installation.

Chapter 7: DSR Release 8.2 Resolved and Known Bugs

Topics:

Severity Definitions
Resolved Bug List
Customer Known Bug List

This chapter lists the resolved and known bugs for DSR release 8.2.

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

Table 6: DSR Release 8.2 Resolved Bugs lists bugs resolved in this release.

Table 6: DSR Release 8.2 Resolved Bugs

| Bug Number | Severity | Found in Release | Title |
|------------|----------|------------------|--|
| 27039660 | 4 | 8.2 | MMI Connections MO, attribute <connCfgSetName> should not be mandatory |
| 26867789 | 4 | 8.2 | Upgrade Method for IPFE should be Serial |
| 26801895 | 4 | 8.2 | Support certificate imports larger than 2048 |
| 26787635 | 4 | 8.2 | 8.2 UPG : ASU site upgrade shows improper values in cycle data |
| 26743723 | 4 | 8 | Exported CSV KPI file has empty IPFE Packets/Sec value |
| 26695582 | 4 | 7.2 | TxP3 measurement count is incorrectly displayed in Diameter Egress Transaction |
| 26615731 | 4 | 7.4 | SCTP Statistics multiple entries for IPFE type connection |
| 26574528 | 4 | 7.3 | Invalid MpDiamMsgPoolPeak and MpDiamMsgPoolAvg for DA-MP Performance measurement |
| 26336113 | 4 | 8.1 | 8.1:ST:APDE exports fail sometimes due to reason as "Too many SQL Connections" |
| 26305538 | 4 | 8.1 | SAMPLE-NetworkElement.xml file in DSR ISO should not contain NTP servers |
| 26304207 | 4 | 8.1 | Setting an invalid value of "Site Upgrade SOAM Method" is not showing any error |
| 26289919 | 4 | 8 | (RBAR) User's Guide SIP URI with NAI is misleading |
| 26285863 | 4 | 7.1 | SO GUI: Sctp Association retransmit cannot greater than sum of path retransmit |
| 26163166 | 4 | 8.1 | VSTP-2711: Error Code 50019 shall be moved to localhosts resource |
| 26144316 | 4 | 8.1 | SYSTEST: Status&Manage->Processes, unable to use filter function |
| 25979318 | 4 | 8.1 | Association Measurement not implemented - VstpTxAsnSendFail, VstpRxAsnRecvFail |
| 25979295 | 4 | 8.1 | Create measurement to track peer transport is NULL |
| 25972061 | 4 | 8.1 | Conn values hyperlink cannot display IPFE I connections as fixed connections |
| 25880266 | 4 | 8.1 | Support of ASU (Auto Site upgrade) for STP function and also upgrade from 8.1 |
| 25715817 | 4 | 7.1 | Two issues found in testing bug 22910567 |

| Bug Number | Severity | Found in Release | Title |
|------------|----------|------------------|---|
| 27224921 | 3 | 8.2 | Main Menu: SDS->Maintenance->Query Data Count failing for B and C level servers |
| 27198012 | 3 | 7.3 | Audit tool to find anomaly between Imsi/Msisdn and Imsi(Msisdn)ToSubscriber |
| 27137104 | 3 | 8.2 | Major alarms Unable to connect via Comagent to remote DIH server with hostname |
| 27088486 | 3 | 8.2 | Mediation: Validation issue while entering Range Type value in rule. |
| 27064735 | 3 | 8 | MMI: Measurements parsing failure |
| 26983520 | 3 | 8.2 | [8.2] VEDSR RUNDB partition being 92% occupied |
| 26749421 | 3 | 8.2 | [DSR 8.2 FT] Object creation is getting failed while performing DPD |
| 26625289 | 3 | 8.1 | MMI commands fail randomly on servers until "service httpd restart" is run |
| 26376705 | 3 | 8.2 | DCA custom rate meal - KPI Description not visible if contains invalid char |
| 26359297 | 3 | 8.1 | [SYSTEST 8.1] SS7 KPI blank with no data after upgrade to 8.1.0.0.0-81.20.0 |
| 26357057 | 3 | 8.1 | 8.1:ST:tuned-adm profile not set to comcol_app after VEDSR upg from 7.x to 8.1 |
| 26282737 | 3 | 8.1 | 8.1 VSTP-ST:Some attributes need to be removed from RAML of MAPSET MO |
| 26282635 | 3 | 8.1 | 8.1 VSTP-ST: MAPSET MMI MO, need text update for error code 50199. |
| 26281960 | 3 | 8.1 | [SYSTEST 8.1] Replication Alarms fail to Clear after DAMP Reboot/Server failure |
| 26277532 | 3 | 8.1 | Ss7MpId table is empty when remove and insert in one transaction |
| 26235816 | 3 | 8.1 | [8.1 VSTP ST] MMI: localhost allows user to input non-VSTP ipaddr |
| 26225567 | 3 | 8.1 | DSR8.1:ST:dsroam abterm on SO while querying in "Alarms & Events->view history" |
| 26168377 | 3 | 8.1 | "Server Core File Detected" on Corvette-B after traffic run, on release 81.15.2 |
| 26163150 | 3 | 8.1 | VSTP-2714: 50089 and 50011 error text upates |
| 26163118 | 3 | 8.1 | VSTP-2718: Different error code shall not have same text |
| 26127354 | 3 | 8.1 | Correct spelling errors in the VstpError.php file |

| Bug Number | Severity | Found in Release | Title |
|------------|----------|------------------|---|
| 26116081 | 3 | 8.1 | VSTP 2613: VSTP MMI GTA: Incorrect error text when invalid RSP name is provided |
| 26116035 | 3 | 8.1 | RAML shall say that filter on statusKnown field is not supported |
| 26116005 | 3 | 8.1 | VSTP-2541: VSTP MMI GTT Selector: Mismatch in Error Declaration |
| 26115946 | 3 | 8.1 | Vstp Linkset statusKnown shall not be a part of filterable fields |
| 26115890 | 3 | 8.1 | Vstp Error File needs to be updated for multiple issues. |
| 25975532 | 3 | 8.1 | VSTPRemoteHosts doesn't have check on the ipAddress.Local ip shouldn't be allowed |
| 25791927 | 3 | 8.1 | [DSR SSST 8.1] NOAM/SOAM becomes unstable in case of AppEventLog file too large. |
| 25694682 | 3 | 8 | SDS All GUI Screens' header box should be aligned with record's width |
| 25550094 | 3 | 8 | Help isn't updated properly in incremental upgrades for testing |
| 24652516 | 3 | 7.1 | iDIH not working due to ORA-1652 error |
| 27307531 | 2 | 8.2 | SBR caught psbr abterm starting USBR Reconfiguration Plan |
| 27197633 | 2 | 7.2 | S-SBR switchover observed because of psbr watchdog timeout |
| 27171126 | 2 | 8.2 | vSTP/DSR Process restart observed when two MPs are soft Rebooted. |
| 27092091 | 2 | 8.2 | VZW SDS 8.1.1 UPGRADE (SDS 73.18.0 -> SDS 81.22.0) in Production |
| 27055335 | 2 | 8.2 | During DSR ASU 7.2 to 8.1.0 , Binding SBR servers failed to restore |
| 27041706 | 2 | 8.2 | SDS Update app_disable script to delete SDS data before upgrade |
| 27012252 | 2 | 8.1 | VZW SDS 8.1.1 UPGRADE (SDS 73.18.0 -> SDS 81.22.0) in Production |
| 26978034 | 2 | 7.3 | DRLReroute thread hangs while processing stale RouteGroup data |
| 26337024 | 2 | 8.1 | [8.1 VSTP-ST] M2PA MsgLoss during ChangeOver |
| 25652240 | 2 | 8 | [ISBR:DcaRecon] User is allowed to configure invalid USBR Recon Plans |

Table 7: DSR Release 8.2.1 Resolved Bugs lists bugs resolved in this release.

Table 7: DSR Release 8.2.1 Resolved Bugs

| Bug Number | Severity | Found in Release | Title |
|------------|----------|------------------|--|
| 27393851 | 2 | 8.2 | SDS: SOAP/XML client AXLE connection doesn't come after performing NO switchover |

Customer Known Bug List

Please find below the known bugs and associated Customer Impact Statements in Table 8: DSR Release 8.2 Customer Known Bugs. This information is provided for information purposes only.

Table 8: DSR Release 8.2 Customer Known Bugs

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 19117425 | 4 | 6 | [239975][M2D-60.10.0-RMS]: ComAgent Connection Down on SS7-MPs w/ACT/STBY DA | Customer Impact: Minimal. Unwanted ComAgent major alarms "ComAgent Connection Down" alarms for the standby DA-MP are safe to ignore. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 19327392 | 4 | 6 | DM-IWF Alarms/Measurements description needs to be updated as per user document | <p>Customer Impact: Minimal. GUI Error Missing DM-IWF Alarms and Measurement descriptions. For scenarios where request and answer messages received from DRL by DM-IWF application whose size are greater than "DiameterMaxMessageSize," the following alarm does not display on GUI:</p> <p>Alarm ID: 33015</p> <p>Alarm Name: DM-IWF Diameter message size exceeded maximum supported size.</p> <p>Alarm Description: DM-IWF failed to forward the Diameter message to SS7-MP because the message size exceeds supported maximum message size.</p> <p>Workaround: This scenario can still be tracked by following measurement:</p> <p>Measurement ID: 15641</p> <p>Measurement Description: Number of diameter messages received from DRL that got rejected because diameter message size exceeded supported maximum.</p> <p>Measurement Group: DM-IWF exception</p> |
| 19538108 | 4 | 6 | ComAgentEgressQueue is getting full while executing 100%Fabr-DiWF Chaining Case | <p>Customer Impact: Performance of FABR-DIWF application chained traffic is impacted. ComAgent Egress task utilization is high even at relatively low traffic load.</p> |
| 19846672 | 4 | 7 | OCDRA - Average measurements are showing half value rather than actual value | <p>Customer Impact: Some of the average measurements for the entire network may not show the correct values.</p> <p>Workaround: Use the average measurements value per server.</p> |
| 19903633 | 4 | 7 | DSR process not exiting cleanly when under load | <p>Customer Impact: No impact to normal DSR operation. This was encountered during a reboot of a TVOE host with DAMP guests. DSR process does not gracefully shut down when traffic is running.</p> <p>Workaround: Disable connections before rebooting.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 20078150 | 4 | 7 | [Upg 7.0] Certain upgrade/backout unable to finish within 4 hour maintenance window | Customer Impact: User may require extended and/or multiple maintenance windows to schedule upgrade activities. |
| 20293217 | 4 | 7 | [Cloud] Shared memory is monitored by allocated memory, which is not the actual used RAM | Customer Impact: Shared memory exhausted alarm (31116 - Excessive Shared Memory) may be raised even if system has unused RAM. |
| 20440390 | 4 | 7 | LRGSYS: AppWorks SOAP server DB re-initialization thread stuck sometimes | Customer Impact: Unlikely to impact user. This issue was encountered in a test environment where user was trying to set up hundreds of servers at the same time. The impact is DB re-initialization does not start for any newly added servers. Workaround is available. Contact My Oracle Support (MOS) for assistance, if needed. |
| 20696866 | 4 | 7 | Duplicate Parent Topic links in Online Help | Customer Impact: No functional impact. |
| 20697000 | 4 | 7 | Incorrect Navigation being displayed | Customer Impact: No functional impact. |
| 20778632 | 4 | 7.1 | [7.1] ESBC: Group administration Edit function of Network-Options screen broken | Customer Impact: Minimal. If user makes change on Administration > Access Control > Groups [Edit] , clicking OK may not record changes. Workaround: Click Apply and then OK . |
| 20805853 | 4 | 7 | Update help text on Remote Servers-Data Export-Keys Report screen | Customer Impact: No operational impact: Instructions are correct. This addresses grammatical and formatting issues. |
| 21493343 | 4 | 7.1 | Local Initiate port values not shown after 6.0 to 7.1 upgrade | Customer Impact: Potential upgrade workaround. If any DSR initiator connections are configured with a local initiate port values, user needs to disable and re-enable connections after the upgrade is complete to re-establish connections. Workaround: To establish the connection on the Local Initiate port, disable and then enable the connection. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 21554520 | 4 | 7.1 | PCA SSST: Stuck SysMetricThreshold alarms after SBR switchover | Customer Impact: User could intermittently experience stuck alarms after an SBR failover. Alarms are stuck until manual intervention is applied to clear them. Workaround is available. Contact My Oracle Support (MOS) for assistance, if needed. |
| 21591252 | 4 | 7.1 | CSRF validation failure on configuration and maintenance screens | Customer Impact: If a CSRF validation failure is received when attempting the operation through the GUI (rare occurrence), the user has to make a second attempt for the same action with same data set to have the update successfully applied. |
| 21629948 | 4 | 7.1 | SSST: Status & Manage > Processes screen does not show psbr process status | Customer Impact: User cannot view the psbr process on the Status & Manage > Processes screen. This screen provides information on start time, status, # starts, CPU utilization, and memory usage. |
| 21796989 | 4 | 7.1 | Issue in PCA ComAgent queue full error handling | Customer Impact: Possible failures of session creation requests while resizing plan is in progress only when the ComAgent queue is full and topology hiding/session state is enabled. |
| 22217695 | 4 | 7.1 | [Cloud] Maximum MPS traffic alarm [for example, 22106] does not consider MAP orig traffic | Customer Impact: The maximum MPS traffic alarm is not raised for MAP originated traffic even if the traffic is greater than the alarm thresholds. The maximum MPS traffic alarm does not consider diameter traffic running on DA-MPs due to MAP originated calls; only Diameter originated traffic is considered. |
| 22720063 | 4 | 7.2 | Dashboard using incorrect source metric for DA-MP ingress MPS | Customer Impact: Diameter Common > Dashboard, DA-MP ingress MPS rate only reflects accepted traffic after validation and congestion controls. Dropped traffic manifests as failed transactions. |
| 23075799 | 4 | 7.1 | [VEDSR] G9 RMS: abterm seen on DAMP over graceful host shutdown | Customer Impact: No impact since DA-MP was being shut down when abterm occurred. |
| 23222826 | 4 | 7.2 | System.CPU_UtilPct sysmetric is lower than expected on VM | Customer Impact: VE DSR users should use dsr.Cpu instead of System.CPU_UtilPct as metric. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 23323324 | 4 | 7.2 | DOIC-pegstat DivertedOut for TTPs are incorrect for Connection RGs | Customer Impact: No impact to traffic. Inaccurate measurement count for DivertedOut measurements for Connection Route Groups that route to multiple peers. |
| 23421644 | 4 | 8 | [AW] Login button not centered in the box on Login screen in Firefox browser | Customer Impact: No operational impact. Cosmetic issue only. |
| 23477541 | 4 | 7.2 | SS7 MP server is deleted even when transport is configured | Customer Impact: User cannot delete stale transport. |
| 23505543 | 4 | 7.3 | [DSR 7.3 ST] KPI Trans Success Rate does not match Dashboard Success Trans % | <p>Customer Impact: User may see the following on the DSR GUI:</p> <ul style="list-style-type: none"> Dashboard is not aligned with KPI screens < 100% can be “yellow” trigger, which makes the Dashboard screen display erroneous alarms. <p>Workaround:</p> <ol style="list-style-type: none"> Use the KPI screen for actual success numbers. Set the Dashboard alarm trigger to < 99% so yellow does not appear. |
| 23858799 | 4 | 8 | Local pause update inconsistent | Customer Impact: 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. |
| 24370650 | 4 | 7.3 | [7.3 UPG] Cloud-init service caused 2 minute delay in VMware VM reboot | <p>Customer Impact: Rebooting a VM in VMware can add a 2 minute delay.</p> <p>Workaround is available. Contact My Oracle Support (MOS) for assistance, if needed.</p> |
| 24377541 | 4 | 8 | [Network Insert Screen]: VLAN ID field should not be mandatory | Customer Impact: In the Networking > Networks [Insert] screen, 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 | IPFE Target Set issue with BIE and gcli | Customer Impact: Exported IPFE files cannot be used for import operations. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 24621473 | 4 | 8 | The SBR HA and HA health check scripts accessing tables instead of SOAP APIs. | Customer Impact: No impact. |
| 24935222 | 4 | 8 | 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 | DSR Backout: Invalid response from user (yes vs. y) should not abort CLI session | Customer Impact: If user does not type Y or N in response to "Continue backout? [Y/N]" message, there is no reason given for the abort of the backout command. Workaround: The backout command can be re-entered. |
| 25042701 | 4 | 7.4 | Abterm is generated on manual application restart | Customer Impact: No impact to traffic. User sees alarm 32508 (server core file detected). If user restarts the DSR process for an MP server, it may generate a core file causing the alarm. Workaround: Investigate any core file before removing from the system to clear the alarm. |
| 25231844 | 4 | 8 | Selecting Edit button with keyboard takes you to a blank screen | Customer Impact: 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 | Copyright visible on screen | Customer Impact: No operational impact. On the Diameter Common -> Dashboard -> Configuration -> Metric Threshold Configuration Sets screen, the copyright information is present above the table description. |
| 25264670 | 4 | 7.3 | Configuration report compilation can fail due to insufficient space in /var/tmp | Customer Impact: The configuration report export may not complete resulting in no/empty file and APDE task hung/aborted. Alarms are raised and abate automatically or, in some cases, require manual intervention to recover the filesystem. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|---|
| 25379612 | 4 | 8 | IDIH: 80.17.2: OAM GUI showing extra mediation input sources | <p>Customer Impact: 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 server hosts from the other SOAM are displayed in the IDIH OAM application screen under Applications > DSR > Mediation Input Sources.</p> <p>Workaround: Disregard hosts that no longer apply to the current configuration.</p> |
| 25462998 | 4 | 8 | Pause update not functioning on ComAgent screens | <p>Customer Impact: Minimal. The GUI status screens under Communication Agent > Maintenance continue to update when pause update checkbox is selected.</p> |
| 25496715 | 4 | 8 | Minor issues in DSR netconfig templates | <p>Customer Impact: During installation activity, additional modification to the DSR netconfig template is required.</p> <p>Workaround: Correct template as follows:</p> <ul style="list-style-type: none"> Remove the double right brackets for the following: <ul style="list-style-type: none"> config/Topo1_L2/4948E-F_L2_configure.xml: <option name="type">access</option>> config/Topo4/6125XLG_Pair-2_template_configure.xml: <!-- Multiple VLANs can be entered by stringing the VLANs in the setAllowedVlans option Ex. 1-5 or 1,2,3,4,5 -->> config/Topo1_L3/3020_template_configure.xml: <!-- 'mode' is required on Cisco when adding interfaces Within 6120XG.xml replace <configure> with <configure apiVersion="1.1"> |
| 25542610 | 4 | 8 | When NMS server added, user may return to a screen with addition not reported | <p>Customer Impact: Update may not be reflected on GUI until it is manually refreshed.</p> <p>Workaround: None. User needs to navigate to the desired screen rather than be automatically returned to it.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 25573507 | 4 | 8.1 | [DSR SSST 8.1] IPFE validation missing in IPFE > Configuration > Options screen | Customer Impact: If wrong IP address is used, then TSA does not work. This only happens when user is configuring the IP address incorrectly. In field, use the correct IP address and verify the configuration before starting the traffic. |
| 25584247 | 4 | 8 | Misleading DCA Custom Event Template Throttling description | Customer Impact: Misleading "Alarm Throttling Interval" description. Minimum value is incorrect. [Default = 60; Range = 0-300] should read [Default = 60; Range = 5-300]. |
| 25590495 | 4 | 8 | DSR MMI KPI groups not validated correctly | Customer Impact: 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 | DSR MMI screen name seen as UNKNOWN in the Security logs | Customer Impact: No operational impact. Although "screen name" field of the security log displays "UNKNOWN," all applicable information is available as text in the security log. |
| 25590566 | 4 | 8 | DSR MMI Bulk Configurator returns wrong error for invalid filename | Customer Impact: An error is returned for invalid filename, but the error text, "Filename cannot exceed 255 characters", is incorrect. |
| 25590581 | 4 | 8 | DSR MMI Restrict the Resource Name to not use URI reserved keywords | Customer Impact: User cannot use reserved keywords in MMI URI request. |
| 25590613 | 4 | 8 | DSR MMI empty visibility for some of the measurement groups | Customer Impact: More information may be provided than expected. The MMI supplies information for all Measurement Groups in the database. The visibility is blank if the feature is not activated. |
| 25590648 | 4 | 8 | MMI request does not raise exception in any error condition | Customer Impact: No functional impact. An exception is reported and logged in an error log, but the error is not reported in the JSON response. |
| 25616683 | 4 | 8 | Capacity Summary screen constraints inconsistent with online help | Customer Impact: Online help has an inaccuracy concerning max local nodes = 32 instead of 48. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 25643859 | 4 | 8 | GUI: SBR Status screen repeating display of server groups with >25 SGs. | Customer Impact: 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 | Backout: SOAM returns errors with verifyUpgrade and verifyBackout | Customer Impact: The only impact is ERROR may be returned when running verifyUpgrade and verifyBackout. The backout completes successfully. Workaround: None required. The backout completes successfully. |
| 25697793 | 4 | 8 | POST bulk/configurator fail with 400 response: issue connecting to hosts | Customer Impact: If this error occurs, user needs to retry the command. |
| 25737480 | 4 | 8.1 | [DSR SSST 8.1] When we insert device, XSI IPv4 address replaces with IPV6 address | Customer Impact: User cannot add two devices at the same time. |
| 25800233 | 4 | 8 | DSR8.0:ST: Error displayed wrongly in GUI when running task is cancelled | Customer Impact: Task is cancelled, however it may not be immediately apparent. Workaround: The long running task can be cancelled and ASU restarted. |
| 25975473 | 4 | 8.1 | M2PA link status gets displayed as UP although its DOWN | Customer Impact: No traffic loss or service loss. VstpLinkStatus may report M2PA link status as available after vSTP process is manually stopped. |
| 26099657 | 4 | 8.1 | /vstp/connections/status URI has an undocumented alias /vstp/connectionstatus | Customer Impact: An authenticated/authorized user does not receive an error when using /vstp/connectionstatus URI, which is not documented in the API specification. |
| 26116216 | 4 | 8.1 | vSTP MMI error code for delete action scenario is unused | Customer Impact: No impact to the user experience. This is a code clean up bug to remove the unused error code from the PHP code. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 26116451 | 4 | 8.1 | VSTP MMI: Remove dead code related to error ERR_MAP_SET_RSP_NOT_EDITABLE | Customer Impact: No impact. The bug is to remove dead code which tries to generate error ERR_MAP_SET_RSP_NOT_EDITABLE; however, the user cannot hit this leg of code. |
| 26127345 | 4 | 8.1 | Unused error codes need to be removed from VstpError.php. | Customer Impact: No system impact since this bug is to clean up the unused error codes from vSTP error file. |
| 26127371 | 4 | 8.1 | vSTP error ERR_OPR_FAILED_NO_ENTRY not uniformly used for all MOs | Customer Impact: No system impact since this bug is to improve the usage of error ERR_OPR_FAILED_NO_ENTRY in vSTP MMI. |
| 26133289 | 4 | 8.1 | vSTP-2418: Error text updates for /vstp/globaltitleaddresses | Customer Impact: No functional impact. Request to enhance existing error strings. |
| 26133325 | 4 | 8.1 | vSTP-2417 Rename translationIndicator in the /vstp/globaltitleaddresses to xlat | Customer Impact: No functional impact. This bug is raised to provide a more meaningful name to attribute "translationIndicator" in /vstp/globaltitleaddresses. |
| 26133355 | 4 | 8.1 | vSTP-2410: Rename startaddress and endaddress to GTA and EGTA in GTA MO | Customer Impact: No system impact. This bug is raised to provide clarity by renaming the attributes "startaddress" to GTA and "endaddress" to EGTA of URI /vstp/globaltitleaddresses. |
| 26187472 | 4 | 8.1 | Required field asterisk is not in the correct location for Trusted Network Realms | Customer Impact: None. The GUI required attribute indicator (*) for NO GUI under Diameter > Configuration > Topology Hiding > Trusted Network Lists > [Insert] > Trusted Network Realms is located after the textbox field rather than after the label. |
| 26187520 | 4 | 8.1 | UI style [fonts] are not correct as per the requirements | Customer Impact: Minimal. Mismatch in font style on following screens: <ul style="list-style-type: none"> • Configuration > Places [Insert] • Diameter Common > Dashboard > Configuration > Dashboard Networks • RADIUS > Configuration > NAS Node > [Insert] |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 26188293 | 4 | 8.1 | [DASH:P&C] DSR Dashboard PCA averaging MPS instead of reported RxPdramsgRate | Customer Impact: Dashboard screen does not include OCDRA MPS, it is showing only PDRA MPS. Under the Servers tab, the SBR Sessions field is not including the OCDRA Sessions count. |
| 26270776 | 4 | 8.1 | Process Util spikes seen for pingAllLivePeer and iptablesAdm | Customer Impact: This has no impact on the advertised performance figures. While testing the smallest VM resource profile (for example, 4 vCPUs/8G RAM), an anomaly wherein pingAllLivePeer and iptablesAdm tasks results in CPU spikes. The benchmarked/advertised MPS (for example, 6K RBAR MPS per DA-MP) has already considered these spikes and runs fine with this anomaly. |
| 26313885 | 4 | 8.1 | DSR 8.1:ST: Status & Manage ->Files is not accessible from NO and throws an error | Customer Impact: In NOAM and SOAM when there is a large number of files present inside the File Management Area (/var/TKLC/db/filemgmt) and the user navigates Status & Manage > Files for that server, then apwSoapServer becomes slow since it uses the maximum CPU to sort the files in memory. This impacts the apwSoapserver functionality and overall server performance. This is limited to OAM servers and does not impact signaling servers. This is a legacy issue. This issue happens because Remote Server Copy is not deleting the files after copying them to the remote server. |
| 26710183 | 4 | 8.2 | RE, when edited to remove the destination, should not be saved | Customer Impact: If an RE is edited and all destinations are set to None, then any FABR queries to this particular RE fail (ATTACH failures are seen). Workaround: None. Though as a note, for any FABR query to pass, a valid destination must be assigned to a RE. |
| 26721143 | 4 | 8.2 | vSTP capacity status per STP-MP | Customer Impact: DSR 8.2 does not have capacity constraint per vSTP MP. In absence of these validations, user might end up configuring the system beyond limits. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 27135828 | 4 | 8.2 | Connection name not displayed in IcRate alarm | Customer Impact: Alarms are correctly raised and cleared for IcRate and EcRate; however, the connection name is not displayed in the Instance field as it should be. |
| 27182197 | 4 | 8.2 | [8.2FT]: Domain ID field in filter gets disabled after filtering it once | Customer Impact: In the SDS > Configuration > Subscribers screen, after filtering on Domain ID, if the page is reloaded, the Domain ID textbox is greyed out and disabled. |
| 27210638 | 4 | 8.2 | Inconsistent CPU usage source for processes Status & Manage > Processes screen | Customer Impact: The Status & Manage > Processes screen does not list the real time CPU and Memory Utilization of some processes (depending on the source coded for each process). Users can still see the CPU and Memory utilization from Measurement Reports or can verify the same from individual servers. |
| 27272082 | 4 | 8.2 | vSTP Abterm has been observed when two MPs are hard rebooted | Customer Impact: No traffic loss or functionality impact. The abterm indicates it fails in initialization after a hard reboot. It does not impact service and process recovers successfully. |
| 27278884 | 4 | 8.2 | Peer Route Table (PRT)/Application Route Table (ART) rules have no view access. After inserting a PRT, an internal error displays | Customer Impact: None, since user can view/insert/create PRT/ART. Workaround: Click Apply instead of OK to insert the PRT/ART as permission of view/delete/insert/update for ARR or PRR unchecked so the user cannot do anything with regards to PRR/ARR. |
| 27329207 | 4 | 8.2 | GTTSet names are always saved in upper case irrespective of the case given by user | Customer Impact: User must provision only upper case names for GTA provisioning. The system does not utilize GTT set with lower case name or user provisioned name in the GTA. |
| 19402375 | 3 | 6 | Migration script with IPv6 aborts because of compressed IPv6 IPs in DB | Customer Impact: Minimal. Unable to migrate IPv6 MPs. User is not able to migrate from Active/Standby to Active/Active configuration if MPs have IPv6 addresses. Workaround: Before migration, change the format of the IPv6 addresses in the Network table to expanded form fd0d:deba:d97c:0ee5:0000:0000:0000:0000. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 20198495 | 3 | 7 | [STP7.0] IPFE Conn starving Fixed Conn due to (upgrade related) MP outage | <p>Customer Impact: If IPFE initiators and responders are co-located and many peer nodes are attempting to establish connections while DA-MPs are reloading, resources can get allocated in an unbalanced way that keeps some initiator connections from establishing.</p> <p>Workaround: Restart some of the IPFE responder connections. This frees resources for initiators to establish, and the responders are moved to a DA-MP with capacity.</p> |
| 20244290 | 3 | 6 | In virtualized environment, PSBR processing latency is observed during traffic | <p>Customer Impact: None, if proper number of VCPUs is configured.</p> |
| 20347965 | 3 | 6 | IWF feature on VM profiles need 24G RAM to come up | <p>Customer Impact: No operational impact. This bug is relevant only for virtualized DA-MPs and virtualized SS7-MPs when we activate MAP interworking function only.</p> |
| 20495654 | 3 | 7 | [LRGSYS] Certain screens in large topology DSR take a long time to display | <p>Customer Impact: Screen rendering is delayed on very large topologies.</p> |
| 20513017 | 3 | 7.1 | [IPv6] DSR ComAgent remote server insert fails the first time on a browser | <p>Customer Impact: GUI issue. This issue occurs on the first insert attempt after opening a new browser, or on the first attempt of a given day. The insert does not apply.</p> <p>Workaround: User must try again. All subsequent attempts work successfully for the remainder of the day.</p> |
| 20670614 | 3 | 7 | Fresh Install Feature activation is not always visible in LHM sites 2/3 | <p>Customer Impact: No impact.</p> <p>Workaround: Documented in the installation guide.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|---|
| 20745780 | 3 | 7.1 | Potential (PDRA) configuration change problems in an upgrade window in DSR 5.1+ | <p>Customer Impact: Potential upgrade/GUI issue.</p> <p>For the below parameters that are GUI configurable, during an upgrade window (OAM has been upgraded, but not all MPs have been upgraded), if these values are modified on the GUI, the new value is not replicated to MPs still running the old release (due to upgrade barrier).</p> <p>Affected GUI screens and parameters include:</p> <ul style="list-style-type: none"> • NOAM Main Menu: Policy and Charging > Configuration > <ul style="list-style-type: none"> • General Options (All fields) • Network-Wide Options (All allowed fields) • Online Charging DRA > OCS Session State > [Edit] ("OCS Session State Enabled" field) • Online Charging DRA > Realms (All configurable fields) • Online Charging DRA > Network-Wide Options (All fields) • Alarm Settings (All configurable entries) • Congestion Options (All configurable entries on this screen) • SOAM Main Menu: Policy and Charging > Configuration > <ul style="list-style-type: none"> • Policy DRA > PCRFs (All fields) • Policy DRA > Binding Key Priority • Policy DRA > PCRF Pool To PRT Mapping • Policy DRA > Site Options (Topology Hiding Virtual Name) |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 20757520 | 3 | 7.1 | [DSR IPv6]: No support for IPv6 deletion or IPv6 to IPv4 failover | <p>Customer Impact: As of DSR 7.1, IPv6 to IPv4 automatic failover is not supported. For example, the system may not automatically failover (recovery seamlessly) if disruption of the IPv6 network is encountered.</p> <p>As for IPv6 deletion, this process is supported and is covered in the IPv6 Migration Guide (E57517-01).</p> |
| 21273728 | 3 | 7.1 | DRNO login takes a long time when former primary NO is unavailable | <p>Customer Impact: GUI issue. This issue occurs only in a disaster recovery scenario when the primary NOAM site has failed and is not reachable on the network. In this scenario, the login does work because it is very slow.</p> <p>Workaround: Wait for the login attempt to complete.</p> |
| 21385635 | 3 | 7.1 | 7.1 SysTest: During DR procedure, disk shortage alarms are present on SOs | <p>Customer Impact: Disk Alarms 32312 and 31121 display on the GUI for the /var/TKLC/rundb partition on SOAM server.</p> <p>Workaround is available. Contact My Oracle Support (MOS) for assistance, if needed.</p> |
| 21452436 | 3 | 7.1 | [7.1SysTest] Traffic loss when recovering a site from outage | <p>Customer Impact: Potential traffic impact. If preferred spare has taken the active role due to active/standby being down, and the active/standby servers become available, the preferred spare may give up activity before the other server is ready.</p> <p>Workaround: To minimize impact, if possible before recovering the site that was down, ensure it does not become active by forcing the servers to "OOS" at Main Menu > Status & Manage > HA [Edit]. Then changed the servers to "Active" during a maintenance window.</p> |
| 21493608 | 3 | 7.1 | Problem specifying OCS Realm or Node for SS=Specific Message for adjacent node | <p>Customer Impact: Traffic fails using session state on OCS node.</p> <p>Workaround: Locate the OCS node or OCS realm in the DSR as the CTF node; or change the session state to "All message."</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 21509820 | 3 | 7.1 | SSST: Exception Measurement SbrRemoveSessDbErr pegged during sunny day call flow | Customer Impact: No impact to traffic. Exception Measurement SbrRemoveSessDbErr can (depending on the call mix) be pegged while running a sunny day call flow. In this case, it is misleading to peg an error measurement when the signaling behavior is working correctly. The impact is that the error pegs are misleading. |
| 21531146 | 3 | 7.1 | During session migration, SbrOcSessionNotFound measurement unexpectedly pegged | Customer Impact: No impact to traffic. Exception Measurement SbrOcSessionNotFound is pegged on SBRs although everything is working correctly. The impact is that the error pegs are misleading. |
| 21692073 | 3 | 7.1 | pdbRelayMsgLogTimeStamp should be separated from the ProvOptions table | Customer Impact: No operational impact. Upgrade Backout wipes out the pdbRelayMsgLogTimeStamp causing pdbRelay to fail. This has been compensated by a workaround in the current backout procedures until a software fix is available. |
| 21917304 | 3 | 7.1 | [AppWorks]: Failure to resolve IPv6 addresses in DNS post- IPv6 migration | Customer Impact: No operational impact. Workaround: Incorporated in the IPv6 Migration Guide. |
| 21965489 | 3 | 7.1 | [Cloud] Hardware ID is HW_UNKNOWN on KVM/OpenStack | Customer Impact: Unexpected ComAgent behavior. ComAgent parameters are set to high for Cloud installations when the Hardware ID is not recognized "HW_UNKNOWN". The ComAgent parameters are set to HP Gen6 hardware, which potentially causes the Cloud installation to be overwhelmed with ComAgent traffic. |
| 22121220 | 3 | 7.1 | DB compare should ensure hostname of restore server exists in Server table | Customer Impact: User must use the same hostname previously assigned during the DSR disaster recovery procedure to configure the first NOAM server; otherwise, the database restore fails. |
| 22321459 | 3 | 7 | Eth config files not restored after swapping Mezz cards | Customer Impact: Default values are restored instead of previously configured values. Workaround: Manual steps need to be run to restore network configuration. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 22709649 | 3 | 7.2 | PCA SSST: HA resource switchover time is longer than expected | Customer Impact: Diameter signaling that requires a Policy SBR query/transaction fails during switchover until the active server is available and normal. |
| 22829662 | 3 | 7.2 | [DSR 7.2 UPG] Number of matches from DSR GUI is much larger than from IDIH GUI | Customer Impact: No signaling impact. More IDIH traces may be captured than expected. |
| 23056184 | 3 | 7.2 | DOIC: Error Code 19766 not generated with removal of last SOAM from SG | Customer Impact: This is unlikely to occur in the field. User will not receive an error when the last SOAM server is removed from the SOAM server group when there are local TTGs marked as shared by a remote site. |
| 23064842 | 3 | 7.1 | [VEDSR] G9RMS: 2 Simultaneous Bulk Audits result in call failure | Customer Impact: If two SBRs are bulk-audit/loading simultaneously on the same server, there may be momentary traffic alarms due to network saturation. Workaround: Perform SBR database loads on a server one at a time. |
| 23093382 | 3 | 7.2 | [VEDSR] Upgrade from 7.1.x to 7.2 does not update the IPFE alarm thresholds | Customer Impact: No impact to functionality or throttling. This only affects alarming. |
| 23132640 | 3 | 7.3 | [DSR7.3] Issues configuring/reconfiguring PCRF records | Customer Impact: 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 with different names, but all the same network configuration. |
| 23139593 | 3 | 7.2 | [PDRA] Losing binding records during site failure/recovery | Customer Impact: Potential signaling impact. If the session SBRs at site 2 recover from the reboot while the HA networks are down, a split brain occurs. If this happens and ComAgent is able to route from binding SBRs to the session SBRs at site 2, there is record loss caused by the binding audit. Workaround: None. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 23236381 | 3 | 7.2 | DOIC/ETG Maintenance screens, red cells missing "SMS degraded" on ComAgent conn change | Customer Impact: User must review raised alarm to determine why cell is red. |
| 23283553 | 3 | 7.2 | SO local node port | Customer Impact: Minimal GUI issue. Customer can configure local node TCP/SCTP ports beyond maximum stated on GUI. There is an error in the field description on the GUI. The port range maximum is 65535. |
| 23512175 | 3 | 7.3 | Egress Throttle List stuck reporting CL3 when DA-MPs are disabled | Customer Impact: If all DA-MPs at another site in the network are disabled, Alarm 22057 "ETG Rate Limit Degraded" becomes stuck and more traffic than normal is diverted by the ETL on the DSR with the problem. The condition automatically clears when the DA-MPs are re-enabled. If possible, re-enable the DA-MPs; otherwise, the condition can be manually cleared with the following workaround. Workaround: Disable and re-enable the ETG on the DSR with the problem. If both rate and pending transactions are enabled, disable and re-enable both. |
| 24334664 | 3 | 7.3 | DSR ASG feature should be TSA aware to avoid potential outage | Customer Impact: Potential upgrade impact. If TSAs are distributed across a subset of available MPs, user should not use the Automated Server Group upgrade feature to upgrade the DA-MP server group since the Automated Server Group upgrade feature does not consider TSA assignments when selecting DA-MPs for upgrade. Workaround: DA-MPs should be upgraded manually to avoid the risk of outage. |
| 24341145 | 3 | 7.3 | [DSR_7_3_SYSTST] Need to handle defective blade that has been isolated | Customer Impact: No immediate impact to traffic. Replication of configuration to downstream servers could be impacted. Workaround: Reboot the isolated server to restart the cmha process. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 24392971 | 3 | 8 | SQL error observed when removing connections in parallel | <p>Customer Impact: If encountered, the user needs to retry the delete action. When multiple concurrent clients are updating the database at the exact same moment, it is possible that the second client receives an update error. This does NOT cause any data integrity issues.</p> <p>Workaround: The client receiving the update failure must retry.</p> |
| 24529517 | 3 | 8 | Time to create network routes increases with the number of configured routes | <p>Customer Impact: User must take into account the time it takes to create a large number of network routes.</p> |
| 24564563 | 3 | 8 | Network devices added using GUI or MMI become "Discovered" on delete | <p>Customer Impact: No operational impact. The issue is transient and clears on its own.</p> <p>Workaround: None required.</p> |
| 24565936 | 3 | 8 | Time to GET network devices increases with the number of configured items | <p>Customer Impact: When a full GET request is invoked by an MMI client for network devices, there is a long delay in the response.</p> <p>Workaround: The client could filter the request.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 24751466 | 3 | 7.3 | NGN-PS configuration mismatch between DA-MP and SBR MP | <p>Customer Impact: User could configure system where NGN-PS is enabled on PCA DA-MP but disabled on session SBR MP causing some alternate key binding searches to fail. To encounter this issue, all of the following conditions must exist.</p> <ol style="list-style-type: none"> 1. PCA DA-MP and session SBR MP are under different SOs 2. NGN-PS is enabled on PCA MP, but disabled on session SBR MP 3. Binding SBR MP is congested with CL 2 or higher 4. The CCR-I contains at least one MSISDN, IPv4, or IPv6 in addition to IMSI, for example, the session SBR needs to send createAlternateKey stack event to binding SBR 5. The CCR-I has NGN-PS priority 6. The subsequent CCR-Is or AARs need to search alternate keys in the binding SBR DB <p>Workaround: Modify the NGN-PS configuration (enabled or disabled) such that all PCA DA-MPs and SBR MPs under the same NO have the same configuration.</p> |
| 24796935 | 3 | 8 | [AW:oampAgent] "DB Late Write Nonactive" alarm by NO during Act->Stby transition | <p>Customer Impact: No operational impact. Alarm may be triggered when switchover to NOAM occurs.</p> <p>Workaround: None required.</p> |
| 24957750 | 3 | 7.2 | PCA SSST 8.0: SysMetric for ComAgentIngressStack EventRate is not getting pegged | <p>Customer Impact: No impact to traffic. Inaccurate measurement count for ComAgentIngressStackEventRate.</p> |
| 25112686 | 3 | 7 | Mediation rule upgrades from DSR 5.0 take a long time with many Mediation rules | <p>Customer Impact: Potential upgrade impact. Upgrade of systems with many provisioned mediation rules may take longer to complete.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 25180486 | 3 | 7.4 | XML import testing not taking place in SDS | <p>Customer Impact: No impact to traffic. Data is imported, but the Import Status screen does not reflect the information properly.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Use CSV import instead of XML import, or 2. Navigate to Maintenance->Command Log to check the status of imported records. |
| 25186432 | 3 | 7.1 | IDIH v7.1: Mediation health check failed while doing an IDIH installation in VEDSR setup | <p>Customer Impact: IDIH may require manual intervention to clean up COMCOL DB after installation.</p> |
| 25304996 | 3 | 7 | Contradicting EMR calculation times in Diameter UG | <p>Customer Impact: Online help may not be clear with contradicting values of 15ms, 90ms, and 100ms at different places.</p> |
| 25340784 | 3 | 7.1 | IDIH number of matches does not increment | <p>Customer Impact: Although traces are captured as expected, user may not see IDIH Number of Matches increment.</p> |
| 25505595 | 3 | 8 | DSR 8.0:ST: InstalIOS op on guests using PMAC failed with reason as internal error | <p>Customer Impact: 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).</p> <p>Workaround: Delete extra files that have been incorrectly copied to /home/admusr. This clears the alarm and allows normal operation.</p> |
| 25525005 | 3 | 8 | Data Export Transfer Now and Test Transfer do not provide feedback to the user | <p>Customer Impact: The user does not see immediate notification regarding the test transfer action.</p> <p>Workaround: Navigate to Status & Manage > Tasks > Active Tasks to see the test task and status.</p> |
| 25529974 | 3 | 8 | DSR MMI issues in AppWorks MON URIs | <p>Customer Impact: None. Measurement budget is not currently enforced.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 25575141 | 3 | 8 | [PDRA:Recon] Disabling PDRA during USBR Recon fails with error code 21648 | Customer Impact: User cannot disable PDRA function while running reconfiguration plan for a USBR database. Workaround: Disable the function after all reconfiguration plans have completed. |
| 25600027 | 3 | 8 | [CfgDbReinit] Imysqld,apwSoapServer unexpectedly terminate during initialization | Customer Impact: Minimal impact since issue occurs during reboot. The impact is that the server could take longer to come into service. |
| 25637633 | 3 | 8 | Unknown column "ROLE" in "where clause" | Customer Impact: Minimal 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" from Main Menu: Administration > Software Management > Upgrade screen. Workaround: User can navigate to the desired system OAM tab to get the data. |
| 25651803 | 3 | 8 | [PCA:CACD] Alarm for degraded ComAgent conns when USBRs are removed from session RD | Customer Impact: No functional impact. Alarm is raised for servers that do not belong to the active session SBR database. Workaround: To clear the alarm, restart the SBR servers on which the alarm is raised. ***CAUTION*** If any DCA application is actively sending data to these SBR servers, this workaround is NOT recommended since it may cause traffic loss. |
| 25656089 | 3 | 8 | DSR8.0:ST: ISO deployment stuck for the site when servers are restarted | Customer Impact: During preparation for upgrade activity, if the user reboots a server while an ISO transfer is taking place, the transfer stops and does not restart until a manual workaround is performed. Workaround: Contact My Oracle Support for assistance. |
| 25669402 | 3 | 8 | DSR 8.0:ST: VIPs not activated when servers are in the same network, but different sites | Customer Impact: If all SOAM servers (different sites) are in the same network, user cannot access SOAM using VIP when spare SOAM server becomes active. Workaround is available. Contact My Oracle Support for assistance. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 25719122 | 3 | 8 | [PDRA:ApplRestart] psbr abterm can occur during controlled shutdown/restart | Customer Impact: No service/traffic impact. An abterm may be generated during the process restart via Status & Manage > Server screen. |
| 25730821 | 3 | 8 | [ISBR:HaRes] SBRs may fail to de-register COMCOL resources when removed from RDs | Customer Impact: No impact to traffic since this issue was seen on a decommissioned server group that is not a part of resizing plan. Also, there should be no operational impact since MOP source documentation has been updated to required cleanup of decommissioned servers and server groups. Workaround: If there are any servers and server groups, which are no longer being used after the completion of a resizing plan, then the user should delete them. |
| 25739523 | 3 | 8 | DSR8.0:ST: ImpStore-OracleDB connection error after IDIH upgrade from 7.3 to 8.0 | Customer Impact: Alarm may be raised on the IDIH GUI that does not clear automatically even after connection is successfully established. Workaround: Manually clear the alarm by highlighting the alarm on the IDIH GUI > System Alarms and selecting "Terminate selected Alarm(s)". |
| 26030628 | 3 | 8.1 | Cannot connect DSR to IDIH over XMI | Customer Impact: Minimal impact since IDIH should connect using IML. |
| 26116286 | 3 | 8.1 | USBR update and concurrentupdate stackevent resets the creationTime to 0 | Customer Impact: If any DCA application uses "update" API or "concurrentUpdate" API, the creation time of an USBR record is reset to 0. So, the DCA application business logic cannot rely on the USBR record creation time. However, there currently is no requirement for DCA applications developed so far to use the creation time of the record. |
| 26186891 | 3 | 8.1 | 8.1 VSTP-ST:Obs Routing fail events for UDTs msg without mentioning its UDTs | Customer Impact: Minimal impact. Fix would help in debugging message discarded at MTP3 due to routing failure. With fields currently reported in event 70064, cannot differentiate whether it is UDT/XUDT or error message like UDTs/XUDTs. Workaround: Additional fields aid in troubleshooting which messages are being discarded by MTP3 due to routing failure. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 26199079 | 3 | 8.1 | 8.1 VSTP-ST: GTA MO does not allow assigning DEFAULT MRNSET using PUT/POST operation | <p>Customer Impact: For GTA MO configuration, there is no concept of implicitly filling the value of MAPSET/MRNSET (for example, providing defaults).</p> <p>Workaround: User has to explicitly configure the MAPSET/MRNSET (either default or normal) and use the same ID when configuring the GTA MO.</p> |
| 26199124 | 3 | 8.1 | 8.1 VSTP-ST: GET operation for GTA should show either MAPSET or MRNSET | <p>Customer Impact: Both mapSetId and mrnSetId are displayed even though the attribute may not be applicable to the GTA entry. The attribute mapSetId is applicable only when RI = SSN. The attribute mrnSetId is applicable only when RI = GT.</p> |
| 26199345 | 3 | 8.1 | 8.1 VSTP-ST: Invalid error message (MRNSET ID no longer exists) when it is not expected | <p>Customer Impact: Minimal impact. It may take multiple tries to debug an MMI command with invalid data in multiple fields.</p> <p>The two errors the bug talks about are:</p> <ol style="list-style-type: none"> 1. MRN SET ID is not valid, for example, Error Code 071 2. MRN SET ID is provided when the RI = SSN. <p>As of now, the software checks “MRN SET ID is not valid” before checking “MRN SET ID is provided only when RI = SSN.” The user sees #1 on providing invalid MRN SET ID. Only when the MRN SET ID is valid and RI is SSN does the second error message display.</p> |
| 26200716 | 3 | 8.1 | No description for the required field, if user has options to select | <p>Customer Impact: From RADIUS > Configuration > NAS Node > [Insert] screen, either NAS Node Identifier or NAS IP Addresses is a required field, but the description does not indicate these as mandatory fields.</p> |
| 26228558 | 3 | 8.1 | Alarm name should be read only under Alarm Settings tab | <p>Customer Impact: None. Accessibility bug.</p> <p>Workaround: None.</p> |
| 26243446 | 3 | 8.1 | Information showing as green even though Hostname is incorrect | <p>Customer Impact: No functional impact. Error text displays with green background.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|---|
| 26245863 | 3 | 8.1 | vSTP is treating restricted state as available and not propagating it further | Customer Impact: This is only an issue in the ANSI network. In scenario where we have multiple vSTPs between end node, one end node does not receive TFR if route for other end node is in restricted mode. |
| 26289514 | 3 | 8.1 | ASU - IPFE is not included in ASU server list | Customer Impact: If IPFE nodes are not configured with IP addresses (for example, A1/A2/B1/B2 IP addresses are not assigned), then IPFE servers are not visible during the Auto Site Upgrade. Workaround: Upgrade documents have been updated with the necessary information. |
| 26290407 | 3 | 8.1 | 8.1 Major Upgrade NOAM "10134 Server upgrade operation failed", but upgrade succeeded | Customer Impact: There is a false alarm, but the upgrade is still in progress. Workaround: Verify upgrade progress from the Upgrade screen and/or verify upgrade logs to see the progress of upgrade. |
| 26329245 | 3 | 8.1 | 8.1:ST: Export/backup directory not cleaned after transfer to external remote server | Customer Impact: The issue described in the bug appears in the following scenarios: <ul style="list-style-type: none"> User configured a remote server in active server. Switchover happened and user deletes the configured remote server before periodic task could have spawned. Above scenarios lead to stale directories under /var/TKLC/db/filemgmt/.outgoing and affect the cleanup procedure Clean up of the Export folder under /var/TKLC/db/filemgmt area is affected and leads to accumulation of files. |
| 26560940 | 3 | 8.1 | DRMP link to SDS online help is not working | Customer Impact: DRMP link in SDS does not go directly to online help file. Workaround: Information is in online help and SDS user guide, but must be manually referenced. |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 26592093 | 3 | 8.1 | NOAMs not failing over during 81.22.0 MR backout to DSR 72.25.0 | <p>Customer Impact: The backout process may hang on the last NOAM and does not complete. This is due to a process on the NOAM is indefinitely waiting for replication of a specific table while the SOAM nodes are running a different version of COMCOL, which does not replicate that table.</p> <p>Workaround: Restart the cmsoapa or cmha process on the impacted node.</p> |
| 26860741 | 3 | 8.2 | vSTP is not handling SCON message correctly | <p>Customer Impact: When vSTP receives SCON from an AS, it is treated as TFC, and Destination/Adjacent Node (Affected point code in SCON) is treated as congested instead of AS. vSTP does not throttle traffic to the AS based on receipt of the SCON.</p> <p>Note: vSTP is correctly sending the SCON to the AS when it is congested on the ingress side.</p> <p>Workaround: None.</p> |
| 26939388 | 3 | 8.2 | SDS upgrade: NOAM servers do not switch over while auditing is in progress | <p>Customer Impact: None, if documented workaround is followed.</p> <p>Workaround: NOAM upgrades are manual and the documented procedure instructs the user to look for the Audit clearance Alarm.</p> |
| 26969222 | 3 | 8.2 | EVENT_NUMBER: 31000 GN_INTERN/WRN Upload failed [FileUploader.cxx:123] post 8.2 | <p>Customer Impact: 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 long-term impact to the system.</p> |
| 27087175 | 3 | 8.2 | Device Deployment Failed alarms on IPFEs while upgrading from 7.1.1 to 8.2 | <p>Customer Impact: In the unlikely event the TPD provd server is down and a device edit pending, the edit is blocked and an alarm raised. Bug title reflects an instance where this has happened once in the test cycle.</p> <p>Workaround: Perform a trivial edit to the device to retry the edit operation with tpdprovd.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|--|
| 27100966 | 3 | 8.2 | SCTP connections are not established after interface down/up | <p>Customer Impact: If the interface on a vSTP MP is brought down and back up with ifconfig commands, SCTP connections do not re-establish.</p> <p>Workaround: The user must execute the "service network restart" command or restart the vSTP process to cause the connections to re-establish.</p> |
| 27199772 | 3 | 8.2 | [UG:ASU] Upgrade fails: "<server> is REBOOTING but waiting for VALIDATED" | <p>Customer Impact: There is a very low risk of this happening since it is due to a race condition in the code. Upgrade status on the GUI can be seen as stuck in Rebooting if the TPD_TASK_ID is wrongly deleted by the Upgrade Audit. Note that the Long Running Task corresponding to the upgrade has the right information and indicates the upgrade has failed.</p> <p>Workaround: Remove the entry for the server from the UpgradeStatus table and restart the upgrade.</p> |
| 27270970 | 3 | 8.2 | [8.2ST] ASU does not bring back the server to ready state when the task was cancelled | <p>Customer Impact: This issue occurs when an upgrade fails. The servers that were under validation do not display as "Ready," but display as "Not Ready." This prevents starting the upgrade again from GUI.</p> <p>Workaround: Identify the servers from GUI for which upgrade has not failed, but display in the "Not Ready" state. Navigate to Status & Manage > HA and make the "Max Allowed HA Role" active. Navigate to Status & Manage > Server and restart the application for the server that is in "Disabled" state. At this point, the upgrade can continue.</p> |
| 27272904 | 3 | 8.2 | ASU rearrange cycles option does not work as expected | <p>Customer Impact: Rearrange cycle does not work if upgrade is tried after the first attempt of upgrade failed in the middle, but had successfully upgraded a few servers in the cycle.</p> <p>Workaround: User can use ASU default cycle distribution by cancelling the rearrange cycle and can upgrade using default cycle distribution.</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|--|
| 27281145 | 3 | 8.2 | MSU loss when preferred/non-preferred routes r chged 2 cmbined load sharing routes | <p>Customer Impact: 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> |
| 27290504 | 3 | 8.2 | Unable to upload backup file to OAM server for DR testing | <p>Customer Impact: Backup is uploaded to the /var/TKLC/db/filemgmt/ directory, but it is not placed in the /var/TKLC/db/filemgmt/backup directory even though "This is a backup file" checkbox is checked. The backup file must be in the backup directory to be restored.</p> <p>Workaround (to be included in user documentation):</p> <ol style="list-style-type: none"> 1. Backup directory not present under filemgmt. 2. Perform backup once and backup file has created. 3. Copied file (which is going to restore) to backup directory and changed permission to 666. 4. Perform restore operation. |
| 27301480 | 3 | 8.2 | Configuration of TCAP GTT entries | <p>Customer Impact: 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 | [8.2ST]: ERA process restart observed on NO while upgrading SDS 7.3 to 8.2 | <p>Customer Impact: 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 partially 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>Customer Impact: 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: <pre>ip link grep -A1 <network name> grep ether awk '{print \$2}'</pre> 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: 02:2a:84:bc:81:0c 4. Remove all of the colons (:) from the output of step #3 and concatenate it after "800001430c" for the engine ID. For example: 800001430c022a84bc810c |
| 28169961 | 3 | 8.2 | Deleting last relay-based connection from RG, result traffic routing failure | <p>Customer Impact: Message routing will fail with the removal of relay based application ID connection (Relay-Appid#4294967295) from the Route Group (RG), causing the Route List (RL) supported application list to become empty. The condition occurs only when the last relay based application ID connection is removed in RG, and RG still has connection(s) supporting other application IDs.</p> <p>Workaround: When in this condition, re-provision (delete/create) the RG with original set of connections (excluding the DRA connection needing to be removed), to correct the message routing failures.</p> <p>Fix Available in patch-28388845-dsr.sh</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|--|---|
| 25611285 | 2 | 8 | DB site replication errors due to replication link down after upgrade to DSR 80.21.1 | <p>Customer Impact: Database (DB) replication failure alarms may be raised during an Auto Site Upgrade (ASU) or during an event that resets multiple servers in parallel. The DB on the child servers is not updated until resolved.</p> <ul style="list-style-type: none"> • For vertical replication, system configuration information is not replicated to C-level servers. • For horizontal replication, data to standby and spare servers are not updated until resolved. <p>Workaround: If DB replication failure alarms occur during an ASU upgrade, or during an event that resets multiple servers in parallel, the alarm condition can be cleared by restarting the inetrep process on the server(s) with the alarms.</p> |
| 27089292 | 2 | 8.2 | [vSTP]: MSU loss observed during LPO activated and recovered from Eagle | <p>Customer Impact: vSTP currently does not handle processor outage properly. When testing against the Eagle product with LPO enabled, MSU loss is observed. It is recommended not to use processor outage in connections to the vSTP.</p> |
| 27273103 | 2 | 8.2 | Unequal distribution of outgoing traffic over 2 routes for a RSP having equal RC | <p>Customer Impact: In a situation when combined routing is used (i.e., two routes of equal capacity are configured) AND both the routes come up at nearly the same time and the notifications are reached by some of the MPs in different order, traffic may not be equally distributed between the two routes if SLS is not rotated. The slight variation in traffic distribution between the two routes could lead to premature traffic loss in high traffic times.</p> <p>Workaround: Make sure to run traffic with variable SLS (0 to 15).</p> |

| Bug Number | Severity | Found in Release | Title | Customer Impact |
|------------|----------|------------------|---|---|
| 28289014 | 2 | 8.2 | On DA-MP dsr application restarts while attempting Implicit Alternate Routing | <p>Customer Impact: On DA-MP, DSR application restart occurs in a situation when DSR attempting “alternate implicit reroute” of the diameter request routed initially using Dest-Host based Implicit Routing. The scenarios under which the “alternate implicit reroute” could trigger are when the destination host is unresponsive or ComAgent connection for inter-MP route failure occurs. When DSR application restart happens on DA-MP, connection will go down.</p> <p>Workaround: No workaround.</p> <p>Fix Available in patch-28388845-dsr.sh</p> |

Chapter 8:

Oracle References and Services

Topics:

- My Oracle Support (MOS)
- Emergency Response
- Customer Training
- Locate Product Documentation on the
Oracle Help Center Site
- Locate Product Release Software on the
Oracle Software Delivery Cloud
Site

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.

Customer Training

Oracle University offers expert training on Oracle Communications solutions for service providers and enterprises. Make sure your staff has the skills to configure, customize, administer, and operate your communications solutions so your business can realize all of the benefits these rich solutions offer. Visit the Oracle University web site to view and register for Oracle Communications training: <http://www.oracle.com/education.oracle.com/communication>. To reach Oracle University:

- In the US, please dial 800-529-0165.
- In Canada, please dial 866-825-9790.
- In Germany, please dial 0180 2000 526 (toll free) or +49 8914301200 (International).
- In Spain, please dial +34 91 6267 792.
- In the United Kingdom, please dial 0845 777 7 711 (toll free) or +44 11 89 726 500 (International).

For the appropriate country or region contact phone number for the rest of the world, please visit Oracle University's web site at <http://www.oracle.com/education/contacts>.

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at <http://www.adobe.com>.

1. Access the Oracle Help Center site at <http://docs.oracle.com>.
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications** documentation link.

The Communications Documentation page displays. Most products covered by these documentation sets appear under the headings “Network Session Delivery and Control Infrastructure” or “Platforms.”

4. Click on your product and then the release number.
A list of the entire documentation set for the selected product and release appears.
5. To download a file to your location, right-click the PDF link, click **Save Target As** (or similar command based on your browser), and save to a local folder.

Locate Product Release Software on the Oracle Software Delivery Cloud Site

Oracle Communications software is available for electronic download at the Oracle Software Delivery Cloud (OSDC) site, <https://edelivery.oracle.com>. Only authorized customers with a valid password may download software from the site.

For directions on downloading the software and other information about using this site, click FAQ on the top right corner.