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**Oracle® COMMUNICATIONS**

**Diameter Signaling Router**   
DSR Network Impact Report

Release 8.6.0.0.0

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Oracle Diameter Signaling Router DSR Network Impact Report,

Release 8.6.0.0.0

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**GLOSSARY**

| **Acronym/Term** | **Definition** |
| --- | --- |
| APIGW | API Gateway |
| ASGU | Automated Server Group Upgrade |
| AS | Application Server |
| ASU | Automated Site Upgrade |
| AVP | Attribute Value Pair |
| BSBR | Binding SBR |
| CA | Communication Agent |
| CAF | Customized Application Framework |
| CLI | Command Line Interface |
| CLR | Cancel Local Request |
| DA-MP | Diameter Agent Message Processor |
| DAL | Diameter Application Layer |
| DCA | Diameter Custom Application Framework |
| DCL | Diameter Connection Layer |
| DEA | Diameter Edge Agent |
| DPC | Destination Point Code |
| DPL | Data Processor Library |
| DRMP | Diameter Routing Message Priority |
| DPI | Diameter Plug-in |
| DSA | Diameter Security Application |
| DoS | Denial of Service |
| EXGSTACK | Eagle Next Generation Stack |
| vEIR | Virtual Equipment Identity Register |
| ECR | Mobile Equipment-Identity-Check-Request |
| ECA | Mobile Equipment-Identity-Check-Answer |
| FLOBR | Flexible Link set Optional Based Routing |
| GUI | Graphical User Interface |
| GTT | Global title translation |
| GTA | Global title Address |
| HSS | Home Subscriber Server |
| HLR | Home Location register |
| iLO | Integrated Lights Out |
| IMI | Internal Management Interface |
| IPv4 | IPv4 address of the subscriber |
| IPv6 | IPv6 address of the subscriber |
| IMSI | International Mobile Subscriber Identity |
| IMPU | IP Multimedia Public Identity |
| IMPI | IP Multimedia Private Identity |
| IOT | Interoperability Tests |
| KPI | Key Performance Indicator |
| LAI | Location Area Identity |
| LTE | Long Term Evolution |
| MAP | Mobile Application Part |
| MBR | Map Based Routing |
| MCC | Mobile Country Code |
| MEAL | Measurements, Events, Alarms, and Logging |
| MME | Mobility Management Entity |
| MMI | Man Machine Interface |
| MP | Message Processor |
| MPS | Messages per Second |
| MS | Mobile Station/Handset |
| MSU | Message signal Unit |
| MSISDN | Mobile Station International Subscriber Directory Number |
| MTC | Machine type communication |
| MTP | Message Transfer Part |
| MO | Managed Object |
| NE | Network Element |
| NGN | Next Generation Networks |
| NGN-PS | NGN Priority Services |
| NIDD | Non-IP data delivery [directly through MME/SGSN] |
| NMS | Network Management System |
| NOAM | Network Operations Administration and Maintenance |
| NF | Network Function |
| NRF | NF Repository Function |
| OAG | Oracle Accessibility Guidelines |
| OAM | Operations, Administration, Maintenance |
| OAM&P | Operations, Administration, Maintenance and Provisioning |
| OCUDR | Oracle Communications User Data Repository |
| OPC | Origin Point Code |
| PDRA | Policy Diameter Relay Agent |
| PCRF | Policy Control and Charging Rules Function |
| PCIMC | Per Connection Ingress Message Control |
| PDU | Protocol Data Unit |
| PDN | Packet Data Network |
| PM&C | Platform, Management and Control |
| POR | Plan of Record |
| PS | Priority Service (NGN-PS) |
| RAN | Radio Access Network |
| ROS | Routing Option Set |
| RSA | Reset Answer |
| RSR | Reset Request |
| SBR | Session Binding Repository |
| SSBR | Session SBR |
| SCEF | Service Capability Exposure Function |
| ScsAsId | String provided by SCS to identify itself in non-3GPP world |
| SCEF-MP | Message processing server that will run business login of SCEF/MTC-IWF. (for DSR , it is DA-MP server) |
| SCEF-DB | U-SBR (database server that stores context of SCEF calls) |
| SCS | Service Control Server |
| SOAM | Site Operations Administration and Maintenance |
| SS7 | Signaling System No. 7 |
| STP-MP | Signaling Transfer Point Message Processor |
| SV | Software Version |
| TPD | ORACLE Platform Distribution |
| TCAP | Transaction Capability Part |
| TLTRI | T8 Long Term Transaction Reference ID |
| TTRI | T8 Transaction Reference ID |
| TOBR | TCAP Opcode Based Routing |
| UE | User Equipment |
| USBR | Universal SBR |
| VIP | Virtual IP Address |
| VNF | Virtual Network Functions |
| VNFM | Virtual Network Functions Manager |
| VPLMN | Virtual Public Land Mobile Network |
| VSTP | Virtual SS7 Signal Transfer Point |
| VEDSR | Virtualized Engineered DSR |
| XMI | External Management Interface |
| XSI | External Signaling Interface |

# Introduction

## Purpose and Scope

The purpose of this document is to highlight the changes of the product that may have impact on the customer network operations and should be considered by the customer during planning for this release.

## Compatibility

## DSR 8.6.0.0.0 Product Compatibility

* DSR 8.6.0.0.0 is compatible with VNFM 5.4
* DSR 8.6.0.0.0 is compatible with APIGW 8.5.1.0.0\_94.11.0
* DSR 8.6.0.0.0 is compatible with TPD 7.8.1.0.0-89.13.0, ComCOL 7.5.0.38.0-14123, AppWorks 9.4.0-94.9.0, EXGSTACK 9.4.0-94.9.0, TVOE 3.6.2.0.0-88.58.0, PM&C 6.6.1.0.0-66.9.0, and UDR 12.6.3

**X = PI End Cycle**

**Y = Patches within the PI Cycle.**

## DSR 8.6.0.0.0 Product Compatibility Matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **DSR** | **PIC** | **UDR** | **VNFM** | **IDIH** | **ATS** |
| OCDSR Rel 8.0 | 10.4, 10.4.0.3 | N/A |  |  |  |
| OCDSR Rel 8.1 | 10.4, 10.4.0.3 | N/A |  | IDIH 8.1 |  |
| OCDSR Rel 8.1.1 | Compatibility not tested with MRs and Patch releases | N/A |  | IDIH 8.1 |  |
| OCDSR Rel 8.1.2 | Compatibility not tested with MRs and Patch releases | N/A |  | IDIH 8.1 |  |
| OCDSR Rel 8.2 | 10.4, 10.4.0.3 | N/A |  | IDIH 8.2 |  |
| OCDSR Rel 8.2.1 | Compatibility not tested with MRs and Patch releases | N/A |  | IDIH 8.2 |  |
| OCDSR Rel 8.3 | Compatibility not tested with MRs and Patch releases | UDR 12.5 | VNFM 2.0 | IDIH 8.2.1, IDIH 8.2.2 |  |
| OCDSR Rel 8.4 | 10.4, 10.4.0.3 | UDR 12.5.1 | VNFM 3.0 | IDIH 8.2.1, IDIH 8.2.2 | ATS 8.4.0.0.0 |
| OCDSR Rel 8.4.0.1 | Compatibility not tested with MRs and Patch releases | UDR 12.5.1 | VNFM 3.0 | IDIH 8.2.1, IDIH 8.2.2 |  |
| OCDSR Rel 8.4.0.2 | Compatibility not tested with MRs and Patch releases | UDR 12.5.1 | VNFM 3.0 | IDIH 8.2.1, IDIH 8.2.2 | ATS 8.4.0.2.0, 8.4.0.2.1, 8.4.0.2.2, 8.4.0.3.0 |
| OCDSR Rel 8.4.0.3 | Compatibility not tested with MRs and Patch releases | UDR 12.5.2 | VNFM 4.1.2 | IDIH 8.2.1, IDIH 8.2.2 | ATS 8.4.0.3.0, 8.4.0.3.1 |
| OCDSR Rel 8.4.0.4 | Compatibility not tested with MRs and Patch releases | UDR 12.5.2 | VNFM 4.3 | IDIH 8.2.1, IDIH 8.2.2 | ATS 8.4.0.4.0, 8.4.0.4.1, 8.4.0.4.2 |
| OCDSR Rel 8.4.0.5 | Compatibility not tested with MRs and Patch releases | OCUDR 12.6 | VNFM 4.4 | IDIH 8.2.1, IDIH 8.2.2 | ATS 8.4.0.5.0 |
| **DSR** | **PIC** | **UDR** | **VNFM** | **IDIH** | **ATS** |
| OCDSR Rel 8.4.0.6 | Compatibility not tested with MRs and Patch releases | OCUDR 12.6 | VNFM 4.5 | IDIH 8.2.1, IDIH 8.2.2 |  |
| OCDSR Rel 8.5 | 10.4.0.3 | OCUDR 12.6.1 | VNFM 5.0 | IDIH 8.2.3 | ATS 8.5.0.0.0 |
| OCDSR Rel 8.5.0.1 | Compatibility not tested with MRs and Patch releases | OCUDR 12.6.1 | VNFM 5.1 | IDIH 8.2.3 | ATS 8.5.0.1.0 |
| OCDSR Rel 8.5.0.2 | Compatibility not tested with MRs and Patch releases | OCUDR Rel 12.6.2 | VNFM 5.2 | IDIH 8.2.3 | ATS 8.5.0.2.0 |
| OCDSR Rel 8.5.1.0.0 | Compatibility not tested with MRs and Patch releases | OCUDR Rel 12.6.3 | VNFM 5.3 | IDIH 8.2.3 | ATS 8.5.1.0.0 |
| OCDSR Rel 8.6.0.0.0 | Compatibility not tested with MRs and Patch releases | OCUDR Rel 12.7.0 | VNFM  5.4 | IDIH 8.2.3.1 | ATS 8.6.0.0.0 |

## DSR 8.6.0.0.0 Incompatibility Features

The following features have been made incompatible with DSR 8.3 and later.

* Active/Standby DA-MP server architecture (1+1) redundancy model
* MAP-IWF
* GLA
* The “Diameter Security Application (DSA) with Universal-SBR (USBR)" is an obsolete application. Alternatively, the "Diameter Security Application (DSA) with UDR is introduced in DSR 8.4.0.5.0. For information, refer to the Diameter Security Application with UDR User’s Guide. Customers using this application must not upgrade DSR software to DSR 8.4.0.5.0 release and must migrate to “DSA with UDR” based application.
* Virtualized Engineered DSR (VEDSR) deployment, which is also known as TVOE based Fully Virtualized Rack Mount Server (FV RMS) Signaling node, is not supported from DSR 8.3 and later. The non-supported network elements of VEDSR are as follows:

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

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

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

## Disclaimers

This document summarizes Diameter Signaling Router Release 8.6.0.0.0 new and enhancement features as compared to Release 8.4.x, and the operations impact of these features at a high level. The Feature Requirements Specification (FRS) documents remain the defining source for the expected behavior of these features.

# Overview of DSR 8.6.0.0.0 Features

This section provides a high-level overview of the DSR 8.6.0.0.0 release features that may impact OAM interfaces and activities.

For a list of all features, please see Release Notes for DSR 8.6.0.0.0 found at the following link:

**<http://docs.oracle.com/en/industries/communications/diameter-signaling-router/index.html>**

For additional details of the various features, please refer to the “DSR 8.6.0.0.0 Feature Guide” found at the following link:

[**http://docs.oracle.com/en/industries/communications/diameter-signaling-router/index.html**](http://docs.oracle.com/en/industries/communications/diameter-signaling-router/index.html)

## Enhancements to DSR 8.6.0.0.0

Table : DSR 8.6.0.0.0 New Features/Enhancements

|  |
| --- |
| **DSR 8.6.0.0.0 Feature/Enhancement Name** |
|
| [SAML 2.0 Support](#_SAML_2.0_Support) |
| [vSTP XUDT UDT Conversion Feature](#_vSTP_XUDT_UDT) |
| [TCAP Opcode Tag Based Routing](#_TCAP_Opcode_Tag) |
| [vSTP Filtering MO-FSM message based on TP-Dst-Address](#_vSTP_Filtering_MO-FSM) |
| [vSTP SCTP Multihomed Path Failure Alarm](#_vSTP_SCTP_Multihomed) |
| [vSTP Generated UDTS Routing Enhancement](#_vSTP_Generated_UDTS) |
| [vSTP SFAPP enhancement: Make 3G and 4G velocity check optional](#_vSTP_CAP/INAP_Filtering) |
| [Multiple VNFD ID Support](#_Multiple_VNFD_ID) |

### SAML 2.0 Support

Table : SAML 2.0 Support Feature Description

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Scope** |
| POR 31304913 | Security Assertion Markup Language (SAML) works by exchanging user information, such as logins, authentication state, identifiers, and other relevant attributes between the identity and service provider. As a result, it simplifies and secures the authentication process as the user only needs to log in once with a single set of authentication credentials. For more information, see Tekelec Platform Operations, Administration, and Maintenance (OAM) guide. | New Feature |

### vSTP XUDT UDT Conversion Feature

Table : vSTP XUDT UDT Conversion Feature Feature Description

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Scope** |
| POR 32857699 | vSTP supports the conversion of XUDT (S) messages to UDT (S) format and vice versa for both MTP3 and SCCP routed SCCP messages.  The feature allows the conversion of the following messages:   * A UDT(S) message to an XUDT(S) message * An XUDT(S) message to a UDT(S) message   For more information, see Oracle Communications Diameter Signaling Router Virtual Signaling Transfer Point User Guide. | Enhancement Request |

### TCAP Opcode Tag Based Routing

Table : TCAP Opcode Tag Based Routing Feature Description

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Scope** |
| POR 32228115 | vSTP supports the TCAP Opcode Tag Based Routing. The feature attempts to find Operation Code Tag (Opcode Tag) in all supported ITU TCAP messages except ABORT. If messages have opcode tag value anything other than Local(0x02) or Global(0x06), then it is considered as Invalid.  For more information, see Oracle Communications Diameter Signaling Router SS7 Security Guide. | Enhancement Request |

### vSTP Filtering MO-FSM message based on TP-Dst-Address

Table : vSTP Filtering MO-FSM message based on TP-Dst-Address Feature Description

|  |  |  |
| --- | --- | --- |
| Name | **Description** | **Scope** |
| POR 33806185 | vSTP provides the capability to accept or reject the MOFSM messages based on the TPDA present in the MAP portion of a message during GTT translation.  For more information, see Oracle Communications Diameter Signaling Router Virtual Signaling Transfer Point User Guide. | Enhancement Request |

### vSTP SCTP Multihomed Path Failure Alarm

Table : vSTP SCTP Multihomed Path Failure Alarm Feature Description

|  |  |  |
| --- | --- | --- |
| Name | **Description** | **Scope** |
| POR 33746949 | vSTP supports the “IP connection Unavailable” alarm on multi-homed association in case of primary path failure.  For more information, see Oracle Communications Diameter Signaling Router Alarms and KPI. | New Feature |

### vSTP Generated UDTS Routing Enhancement

Table : vSTP Generated UDTS Routing Enhancement Feature Description

|  |  |  |
| --- | --- | --- |
| Name | **Description** | **Scope** |
| POR 33805712 | vSTP is enhanced to support the routing of vSTP generated UDTS message based on OPC of incoming SCCP request or message.  For more information, see Oracle Communications Diameter Signaling Router Virtual Signaling Transfer Point User Guide. | Enhancement Request |

### [vSTP SFAPP enhancement: Make 3G and 4G velocity check optional](https://gbuconfluence.us.oracle.com/pages/viewpage.action?pageId=207621693" \t "_blank)

Table : [vSTP SFAPP enhancement: Make 3G and 4G velocity check optional](https://gbuconfluence.us.oracle.com/pages/viewpage.action?pageId=207621693) Feature Description

|  |  |  |
| --- | --- | --- |
| Name | **Description** | **Scope** |
| POR 33366342 | The velocity check of 3G and 4G network subscribers has become optional. | Enhancement Request |

### Multiple VNFD ID Support

Table : Multiple VNFD ID Support Feature Description

|  |  |  |
| --- | --- | --- |
| Name | **Description** | **Scope** |
| POR 33473666 | Prior to VNFM 5.4 release, VNFM allows suffix for DSR (DSR NOAM, DSR SOAM, DSR DR NOAM) and SDS (SDS NOAM, SDS SOAM, SDS DR NOAM) VNF deployments. From this release, VNFM allows suffix for Secondary VNFM along with DSR and SDS VNF deployments. For more information, see VNFM Installation and User Guide. | Enhancement Request |

## HARDWARE CHANGES

### Hardware Supported

Table 13 - Hardware Details

|  |  |
| --- | --- |
| **Hardware** | **Comment** |
| HP BL460c Gen8, Gen8\_v2 | c-Class |
| HP BL460c Gen9, Gen9\_v2 | c-Class |
| HP DL360/380 Gen8, Gen8\_v2 | Rack Mount Server |
| HP DL380 Gen9, Gen9\_v2 | Rack Mount Server |
| Oracle Server X5-2 | Rack Mount Server |
| Oracle Server X6-2 | Rack Mount Server |
| Oracle Server X7-2 | Rack Mount Server |
| Netra X5-2 | Rack Mount Server |
| HP 6125XLG, 6125G, 6120XG | Enclosure Switch |
| Cisco 3020 | Enclosure Switch |
| Cisco 4948E-F | Rack Switch |
| Cisco 4948E | Rack Switch |

Note:

Gen9, Gen9 v2, and Gen 8 v2 hardware are also supported when purchased by a customer.

Mixed Sun/HP deployments are not generally supported.

### Hardware Upgrade

The VEDSR 8.6.0.0.0 release builds on top of the RMS and supports the newer and higher capacity X7-2 RMS hardware.

## Software Details

### Software Platform Components in 8.6.0.0.0

Software changes include a new release of the software Platform components and a new DSR release.

Table - Software Platform Component Details - 8.6 .0.0.0

|  |  |
| --- | --- |
| **Component** | **Release** |
| TPD | 7.8.2.0.0-89.18.0 |
| COMCOL | 7.5.0.48.0-14123 |
| APIGW | 8.5.1.0.0\_94.11.0 |
| PM&C | 6.6.1.0.0-66.9.0 |
| TVOE | 6.6.1.0.0-66.9.0 |
| AppWorks | 9.5.0-95.14.0 |
| EXGSTACK | 9.5.0-95.13.0 |
| HP Firmware FUP | 2.2.11 |
| Oracle Firmware | 8.2.1 |

### IDIH 8.2.3.1

Table 15 - IDIH Details

|  |  |
| --- | --- |
| **Component** | **Release** |
| IDIH Release | 8.2.3.1.0\_82.51.0 |

DSR 8.6.0.0.0 is compatible with IDIH 8.2.3.1

### SDS 8.6.0.0.0

Table 16 - SDS Details

|  |  |
| --- | --- |
| **Component** | **Release** |
| SDS Release | 8.6.0.0.0\_95.14.0 |

DSR 8.6.0.0.0 is compatible with SDS 8.1.2, 8.2.1, 8.3, 8.3.X, 8.4, 8.4.0.X.Y, and 8.5.X.Y

NOTE**:** It is recommended for SDS to be upgraded before the DSR. SDS release 8.6.0.0.0 is compatible with DSR releases 8.1.2, 8.2.1, 8.3, 8.3.X, 8.4, 8.4.0.X.Y, and 8.5.X.Y.

X = PI End Cycle

Y = Patches within the PI Cycle.

## FIRMWARE CHANGES

Firmware release guidance is provided through DSR 8.6.0.0.0 Release Notice which can be found at the following link:

<http://docs.oracle.com/en/industries/communications/diameter-signaling-router/index.html>

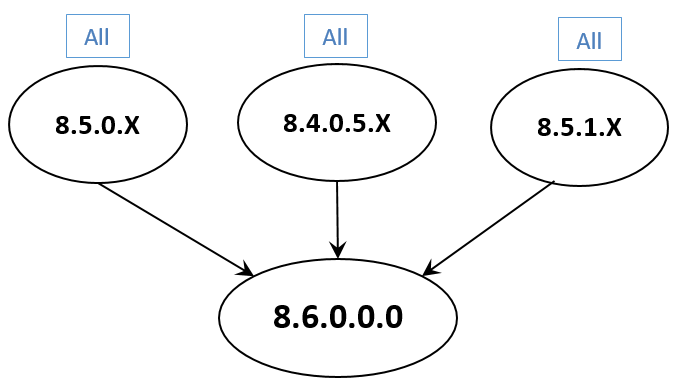
and then navigating to the Release 8.6.0.0.0 link.

## UPGRADE OVERVIEW

This section provides an overview of the Upgrade activities for Release 8.6.0.0.0

### DSR Upgrade Path

The supported upgrade paths for DSR 8.6.0.0.0 are:



**X = PI End Cycle**

**Y = Patches within the PI Cycle.**

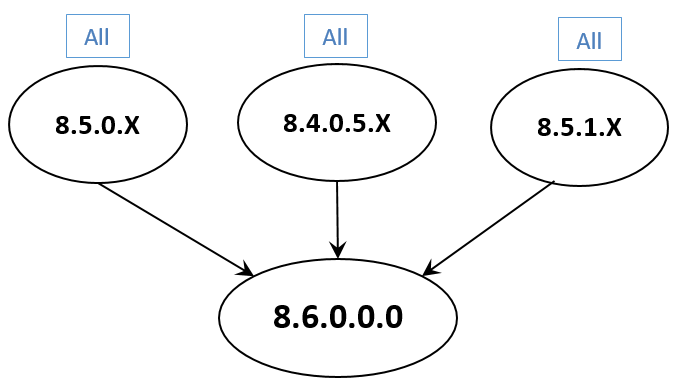
**All - refers to the available release and its maintenance releases**

***The figure above refers to the available releases and all of its maintenance releases.***

***Figure 1 – DSR Upgrade Paths***

### SDS upgrade path

The supported upgrade paths for SDS 8.6.0.0.0 are:



**X = PI End Cycle**

**Y = Patches within the PI Cycle.**

***The figure above refers to the available releases and all of its maintenance releases.***

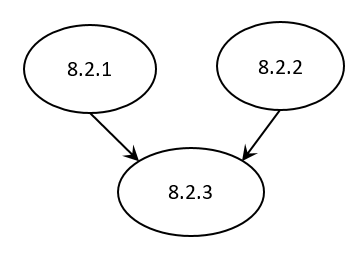
***Figure 2 – SDS Upgrade Paths***

|  |  |  |
| --- | --- | --- |
| MCj04113060000[1] | **!!Caution!!** | SDS Upgrade  If the customer deployment has only FABR features enabled, it is recommended to upgrade the SDS nodes first before upgrading the DSR nodes.  If the customer deployment has both the FABR and PCA features enabled, then upgrade the DSR nodes first before upgrading the SDS nodes. |

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### IDIH upgrade path

The supported upgrade paths for IDIH 8.2.3 are:



***All in the figure above refers to the available releases and all of its maintenance releases***

***Figure 3 – IDIH Upgrade Paths***

IDIH upgrade can be scheduled prior to or following the DSR upgrade. If IDIH upgrade is deferred until after DSR upgrades, then any newly captured elements existing within the upgraded DSR will not be decoded by IDIH until after the IDIH upgrade.

### Upgrade Execution

With DSR 8.5, there are multiple methods available for upgrading a site. The newest and most efficient way to upgrade a site is the Automated Site Upgrade feature. As the name implies, this feature will upgrade an entire site (SOAMs and all C-level servers) with a minimum of user interaction. Once the upgrade is initiated, the upgrade will automatically prepare the server(s), perform the upgrade, and then sequence to the next server or group of servers until all servers in the site are upgraded. The server upgrades are sequenced in a manner that preserves data integrity and processing capacity.

Automated Site Upgrade can be used to upgrade the DSR/SDS servers. However, Auto Site Upgrade cannot be used to upgrade PMAC, TVOE, or IDIH servers at a site.

Additionally, there are separate procedures described in the upgrade procedures to support either a manual or automated approach to upgrading any particular server group. When planning upgrades the “Site Upgrade Methodology Selection” section of the upgrade procedure should be carefully reviewed. ***The use of the automated methods (Auto Site or Auto Server Group) for DA-MP server groups should be carefully considered regarding potential negative traffic impacts***. The ASU enhancement in DSR 8.5 resolves this issue. The user is now instructed to rearrange/add cycles to create a suitable upgrade plan.

### Limitations

When AppEventLog file is full then SOAM/NOAM becomes unstable and shown undefined behavior like:

1. Replication and merging stopped.

2. GUI access stops working.

Also, note that upgrade will fail if utilization of /var/TKLC/rundb partition is more than 70% which may be true in case of larger AppEventLog file size (~5.5 GB in size). To prevent the above listed issues, we need to assign/allocate /var/TKLC/rundb size and AppEventLog file size in sync i.e. AppEventLog file size (plus some delta for other files like MeasStat) should be always less than 70 % of /var/TKLC/rundb partition size.

## Migration of DSR Data

As in prior releases, the existing DSR Data will be preserved during the upgrade.

# MEAL INSERTS

This section summarizes the changes to Alarms, Measurements, KPIs and MIBs. In the following inserts pertain to DSR Release 8.6.0.0.0 MEAL snapshot and deltas to earlier releases,

* The DSR/SDS 8.1.2.0.0 GA Release is DSR/SDS 8.1.2.0.0-81.25.0
* The DSR/SDS 8.2.1.0.0 GA Release is DSR/SDS 8.2.1.0.0\_82.17.0
* The DSR/SDS 8.3.0.0.0 GA Release is DSR/SDS 8.3.0.0.0-83.15.0
* The DSR/SDS 8.4.0.0.0 GA Release is DSR/SDS 8.4.0.0.0-84.15.0
* The DSR/SDS 8.4.0.3.0 GA Release is DSR/SDS 8.4.0.3.0-85.17.0
* The DSR/SDS 8.4.0.5.0 GA Release is DSR/SDS 8.4.0.5.0-88.9.1
* The DSR/SDS 8.5.0.0.0 GA Release is DSR/SDS 8.5.0.0.0-90.11.0
* The DSR/SDS 8.5.0.2.0 GA Release is DSR/SDS 8.5.0.2.0\_92.7.0
* The DSR/SDS 8.5.1.0.0 GA Release is DSR/SDS 8.5.1.0.0-94.10.0
* The DSR/SDS 8.6.0.0.0 GA Release is DSR/SDS 8.6.0.0.0-95.0.0

## DSR/SDS 8.6.0.0.0 MEAL Snapshot

### MEAL Delta between 8.1.0.0.0 and 8.6.0.0.0

### MEAL Delta between 8.2.1.0.0 and 8.6.0.0.0

### MEAL Delta between 8.3.0.0.0 and 8.6.0.0.0

### MEAL Delta between 8.4.0.0.0 and 8.6.0.0.0

### MEAL Delta between 8.4.0.3.0 and 8.6.0.0.0

### MEAL Delta between 8.4.0.5.0 and 8.6.0.0.0

### MEAL Delta between 8.5.0.0.0 and 8.6.0.0.0

### MEAL Delta between 8.5.0.1.0 and 8.6.0.0.0

### MEAL Delta between 8.5.0.2.0 and 8.6.0.0.0

### MEAL Delta between 8.5.1.0.0 and 8.6.0.0.0

# Reference list

The DSR 8.6.0.0.0 Release Notice and Customer Documentation can be found at the following OTN link.

<http://docs.oracle.com/en/industries/communications/diameter-signaling-router/index.html>

DSR IP Flow Document: CGBU\_019284 (ORACLE Internal Document)

Platform IP Flow Document: CGBU\_PM\_1112 (ORACLE Internal Document)