Oracle® Communications Session Monitor

Upgrade Guide

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Oracle Communications Session Monitor Upgrade Guide, Release 6.0

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Contents

About this Guide

Revision History

1 Upgrading Session Monitor

Supported Upgrade Paths 1-1
Pre-requisites 1-1
Configuring Proxies and Repos 1-1
Creating a Backup before Upgrading (Optional) 1-2
A Note if you Have Not Taken a Backup 1-2
Password Policy Changes 1-2
Upgrading Session Monitor from Release 5.1 or 5.2 to Release 6.0 1-3
Re-configuring Proxies 1-4
Downloading the Session Monitor Software 1-4
Upgrading the Session Monitor Software with Internet Connectivity 1-4
Enabling or Disabling SELinux After Upgrading 1-5
Upgrading Session Monitor without an Internet Connection 1-6
Upgrading Session Monitor without Internet 1-6
Dependency RPMs 1-11

2 Upgrading DPDK

Uninstalling DPDK 2-1
Installing and Configuring DPDK with Internet for Intel 2-1
Installing and Configuring DPDK without Internet for Intel 2-2
Downloading, Installing, and Configuring DPDK for Mellanox NIC Cards 2-4
Installing Mellanox OFED 2-4
Installing and Configuring DPDK 2-5
DPDK with Higher Throughput 2-6

3 Upgrading MySQL

About this Guide

This guide provides guidelines and recommendations for setting up Oracle Communications Session Monitor in a secure configuration. The Oracle Communications Session Monitor product family includes the following products:

- Operations Monitor
- Enterprise Operations Monitor
- Control Plane Monitor

Documentation Set

Table 1 Documentation Suite for Session Monitor Release 6.0

Document Name	Document Description
Backup and Restore Guide	Provides instructions for backing up and restoring Session Monitor.
Developer Guide	Contains information for using the Session Monitor SAU Extension.
Installation Guide	Contains information for installing Session Monitor
Mediation Engine Connector User Guide	Contains information for configuring and using the Mediation Engine Connector.
Operations Monitor User Guide	Contains information for monitoring and troubleshooting IMS, VoLTE, and NGN networks using the Operations Monitor.
Release Notes	Contains information about the Session Monitor Release 6.0, including new features.
Security Guide	Contains information for securely configuring Session Monitor.
Upgrade Guide	Contains information for upgrading Session Monitor.

Revision History

This section provides a revision history for this document.

Date	Description
February 2025	Initial Release. Includes documentation for new and enhanced features in the Oracle Communications Session Monitor Release 6.0.

1

Upgrading Session Monitor

This document provides instructions for upgrading Oracle Communications Session Monitor from a previous version such as:

- Release 5.1 to Release 6.0
- Release 5.2 to Release 6.0

Supported Upgrade Paths

Session Monitor Release 5.1 is the minimum requirement for upgrading to Release 6.0. Verify that your current Session Monitor installation is listed as a valid upgrade path below. The possible upgrade paths to Release 6.0 are listed below.

Table 1-1 Supported Upgrade Paths

From	To	Mechanism	Backup and Restore
5.2	6.0	CLI upgrade	Optional
5.1	6.0	CLI upgrade	Optional

> **Note:**
>
> It is recommended to have both Probe and Mediation Engine in the same version of Release 6.0.

> **Caution:**
>
> Session Monitor Release 6.0 is not FIPS compliant. Hence, you cannot upgrade from a FIPS Compliant Session Monitor Release 5.2 to Session Monitor Release 6.0.

Pre-requisites

Before beginning with the process of upgrading, ensure that the following pre-requisites are fulfilled.

Configuring Proxies and Repos

You are required to configure the proxies and repos.

Configure the http proxy in **/etc/yum.conf** file and also export the proxy's address to the environment.

1. In **/etc/yum.conf**, add the following line:

   ```
   proxy=<proxy_server>
   ```

2. Export the proxy's address.

   ```
   export http_proxy=<proxy_server>
   export https_proxy=<proxy_server>
   ```

Creating a Backup before Upgrading (Optional)

This procedure is optional but is recommended.

Session Monitor enables you to back up the Configuration, Database, Block Storage and essential Session Monitor files of the Session Monitor Servers by providing a Backup and Restore procedure.

For more information, see the Session Monitor Release 6.0 Backup and Restore Guide.

> **Note:**
>
> Currently, there is no rollback option available from an upgrade.

A Note if you Have Not Taken a Backup

Create Historical System Diagnostics with the **Create savepoint** and **Include mysqldump** check boxes enabled from the PSA Page. This is mandatory.

Download a copy of the Diagnostics created and save it in a safe location. These diagnostics are required to debug any issues in the future.

For more information, see the System Diagnostics section in the Session Monitor Release 6.0 Installation Guide

> **Note:**
>
> Creating the Savepoint is applicable only for the Mediation Engine. Also, enabling the **Create savepoint** and **Include mysqldump** check boxes is mandatory for taking Diagnostics.

Password Policy Changes

With Session Monitor Release 6.0, changes in password policy have been introduced. Password Policy 1 and 2 present in the **Secure password policy** system setting are now considered insecure and are no longer available in Release 6.0. Only password policy 3 has been retained and this is the only and default option.

For existing users, if there are any users whose password is encrypted using password policy 1, then Session Monitor does not allow upgrade for such systems.

During the upgrade, a pre-test runs to check if any user has password encrypted using password policy 1 – the upgrade fails with the message:

```
Below users have an insecure password hash created using policy 1
Please change 'Secure password policy' to 3 in the 'System Settings' and change
the passwords accordingly...
```

If the above situation arises, then perform the following steps:

1. Set the Secure password policy to 3 in the **System Settings**.
2. Manually change the passwords of the users whose names appear in the message.
3. Try to upgrade again. This time it should be successful. Post a successful upgrade, **System Settings** > **Secure Password Policy** is set to 3.

For a fresh installation, the **Secure Password Policy** is set to 3 by default, and there is no option to change it.

Savepoint Restore on Session Monitor Release 6.0 will fail if any user has password encrypted using password policy 1. Perform the fix as given below:

1. Perform Step 1 and Step 2 given above.
2. Re-create the Savepoint.
3. Try to restore.

Upgrading Session Monitor from Release 5.1 or 5.2 to Release 6.0

Upgrade of Session Monitor from Releases 5.1, and 5.2 to Release 6.0 is available only through a CLI upgrade.

1. For Mediation Engines, it is recommended to disconnect all probes.
2. Run the following command to stop Session Monitor service:

   ```
   source /opt/oracle/ocsm/ocsm_env.sh
   pld-systemctl stop
   ```

3. Run the following command to stop the MySQL services:

   ```
   systemctl stop mysqld
   ```

4. Upgrade to Oracle Linux 8.10 latest version.
5. Run the following command to verify that Oracle Linux 8.10 has been installed:

   ```
   cat /etc/oracle-release
   ```

   You are required to re-configure the proxies. For more information, see Re-configuring Proxies.

Re-configuring Proxies

You need to re-configure the proxies.

Configure the http proxy in the `/etc/yum.conf` file and also export the same to environment.

1. Add the following line in the /etc/yum.conf:

   ```
   proxy=<proxy_server>
   ```

2. Export the proxy's address.

   ```
   export http_proxy=<proxy_server>
   export https_proxy=<proxy_server>
   ```

Downloading the Session Monitor Software

Perform the following tasks to download the Session Monitor Release 6.0 software:

1. Create a temporary directory (temp_dir) on the system that hosts the Session Monitor.
2. Download the Session Monitor installation software Zip file to the temp_dir folder from the My Oracle Support (MOS) website or the Oracle Software Delivery Website (OSDC).
3. Extract the Session Monitor installation software Zip file using unzip.

Upgrading the Session Monitor Software with Internet Connectivity

Upgrading the Session Monitor software

1. Run the following command to install the Oracle epel repository:

   ```
   yum install oracle-epel-release-el8.x86_64
   ```

2. Install the yum utils by running the following command:

   ```
   yum install yum-utils
   ```

3. Enable the latest Oracle Linux 8.10 repositories by running the following command:

   ```
   yum-config-manager --enable ol8_baseos_latest ol8_appstream ol8_addons
   ol8_developer_EPEL
   ```

4. Ensure that the installation script has the executable permission. If not, then set it by executing below command.

   ```
   chmod +x ./scripts/Upgrade_OCSM_Rel_6.0.sh
   ```

> **Note:**
>
> Session Monitor Installation may take several minutes depending on the data size of MySQL.

5. Upgrade Session Monitor and its dependencies using this command.

   ```
   ./scripts/Upgrade_OCSM_Rel_6.0.sh ocsm-<rn>-RPM-GA.zip
   ```

   where: <rn> is the current Session Monitor release number.

   For example:

   ```
   ocsm-6.0.0.0.0-RPM-GA.zip
   ```

> **Note:**
>
> If any data loss occurs post upgrade, follow the Restore procedure provided in the Backup and Restore Guide.

> **Note:**
>
> URLs of the Session Monitor Nodes have been updated with version Release 6.0 as below:
>
> - `https://<machine_ip>/me/`
> - `https://<machine_ip>/mec/`
> - `https://<machine_ip>/setup`

Enabling or Disabling SELinux After Upgrading

After upgrading to Session Monitor Release 6.0, it is mandatory to enable or disable SELinux again as per your requirement.

SELinux policy modules have changed with Session Monitor Release 6.0, For more information, see Enabling SELinux in the Session Monitor Release 6.0 Installation Guide.

Enabling SELinux After the Upgrade

After the upgrade, it is mandatory to enable or disable SELinux again as per your requirement.

- To enable SELinux run the following commands:
  1. Run these commands:

     ```
     sed -i -e "s/^SELINUX=.*/SELINUX=enforcing/" /etc/selinux/config

     sed -i -e "s/^SELINUXTYPE=.*/SELINUXTYPE=targeted/" /etc/selinux/config

     reboot
     ```

2. Install the new customized SELinux policy modules for Session monitor using the command:

```
cd /opt/oracle/ocsm/
./ocsm_ext.sh
```

Disabling SELinux After the Upgrade

After the upgrade, it is mandatory to enable or disable SELinux again as per your requirement.

- To disable SELinux:
  - Run the following commands:

```
sed -i -e "s/^SELINUX=.*/SELINUX=disabled/" /etc/selinux/config
reboot
```

Upgrading Session Monitor without an Internet Connection

If your Session Monitor server is located on an isolated network that does not have a direct connection to the internet you can follow the Offline Upgrade Steps provided in this section.

Follow the tasks given in this section to upgrade Session Monitor without an Internet connection.

Upgrading Session Monitor without Internet

This chapter describes how to upgrade Session Monitor when the Session Monitor node is without an Internet connection.

Prerequisites

You can upgrade Session Monitor in an offline mode using any one of the methods listed here:

- Method 1: Session Monitor node acts as the repo server.
- Method 2: A separate node acts as the repo server.

Session Monitor upgrade requires a temporary Repo server to resolve the package dependencies. Going forward, this server will be referred to as the Repo server in this document.

The Repo server can be a part of the Session Monitor node itself (Method 1) OR it can be separate node (Method 2). If it is a separate node, the Session Monitor node must be able to reach the Repo server. In both methods, it is assumed that as the Session Monitor node does not have an internet connectivity, so the dependency RPM files and packages must be first downloaded on a machine which has the internet connectivity.

> **Note:**
>
> This procedure was tested on:
>
> - Oracle Linux 8.10
> - MySQL 8.4.4
> - MySQL Connector 8.4.0
>
> The versions of Dependency RPMs used in this procedure are the latest available versions at the time of this release based on Oracle Linux 8.10 and MySQL 8.4.4 and the RPM file for Session Monitor Release 6.0.0.0.0. Use the latest version of dependency RPMs for all future patch releases based on the Oracle Linux, MySQL and Session Monitor RPM used.

Downloading Dependent RPMs on a Linux Machine with Internet Connectivity

Follow instructions in this section to download dependent RPMs on a Linux machine with internet connectivity. This Linux system should have 5 GB to 10 GB free disk space in the `/tmp` folder. Session Monitor.

1. Log in to the Linux machine as a root user OR root privileged user.
2. If /tmp/ocsm folder already exist, take the backup of /tmp/ocsm folder if required and delete the folder /tmp/ocsm.
3. Create a folder in /tmp/ocsm.

   ```
   mkdir /tmp/ocsm
   ```

4. Copy the Session Monitor software Zip file, which is downloaded from My Oracle Support (MOS) or Oracle Software Delivery Cloud (OSDC) website, under the `/tmp/ocsm` folder on the Linux System.
5. Install the unzip package if not installed already.

   ```
   yum install -y unzip
   ```

6. Change to folder /tmp/ocsm.

   ```
   cd /tmp/ocsm
   ```

7. Unzip the software ZIP file which is copied here. For example:

   ```
   unzip ocsm-6.0.0.0.0-GA.zip
   ```

8. Execute below steps to copy the Offline installation scripts to /tmp/ocsm folder.

   ```
   cp -rf scripts/Offline_Installation/* /tmp/ocsm/
   ```

9. Set execute permission as:

   ```
   chmod +x Download_rpms.sh
   ```

10. Run the following command to download the script:

    ```
    ./Download_rpms.sh
    ```

    If you need to configure a proxy server for your system, run the same command with the following information:

    ```
    ./Download_rpms.sh "[PROTOCOL://]HOST[:PORT]"
    ```

    > **Note:**
    >
    > In the above command:
    >
    > - PROTOCOL is HTTP or HTTPS
    > - HOST is the IP address or FQDN of the proxy server
    > - PORT is the port number for the proxy server

Upgrading Session Monitor Using Method 1

Upgrade Session Monitor using Method 1 where the Session Monitor node acts as the Repo server.

Execute these steps with a root or root privileged user:

1. Check if at least 5 GB to 10 GB free space is available in the `/tmp` folder on the Repo Server.
2. If the `/tmp/ocsm` folder already exists, take a backup of /tmp/ocsm folder if required and delete the folder `/tmp/ocsm`.
3. Create the folder `/tmp/ocsm`.

   ```
   mkdir /tmp/ocsm
   ```

4. Transfer the contents of the folder `/tmp/ocsm` from the Linux machine, where you downloaded all the RPM files and scripts - to the `/tmp/ocsm` folder on the Repo server.
5. Change to the folder `/tmp/ocsm` on the Repo Server.

   ```
   cd /tmp/ocsm
   ```

6. Set execute permission as:

   ```
   chmod +x *.sh
   ```

7. Run the following command to prepare the Repo Server.

   ```
   ./Offline_Repo_OCSM_Rel_6.0.sh
   ```

8. Run the following command to upgrade Session Monitor.

   - If you are upgrading from Release 5.1 or 5.2 to Release 6.0, then run the below script

     ```
     ./Offline_Upgrade_OCSM_Rel_6.0.sh
     ```

> **Note:**
>
> If you are upgrading from Release 6.0 to a higher version, then use the zip file upload method in the Session Monitor Platform Setup Application user interface.

The Session Monitor server is ready to use.

Upgrading Session Monitor using Method 2

Upgrade Session Monitor using Method 2 where the Repo server is a separate node. Session Monitor should be able to reach the Repo server..

1. Login to the Repo server as a root user OR root privileged use and execute steps 2 to 8.
2. Check that 5 GB to 10 GB free space is available in the `/tmp` folder on the Repo server.
3. If the `/tmp/ocsm` folder is already present, take a backup of the `/tmp/ocsm` folder if required and delete the `/tmp/ocsm` folder.
4. Create a folder `/tmp/ocsm`.

   ```
   mkdir /tmp/ocsm
   ```
5. Transfer all the contents of the `/tmp/ocsm` folder from the Linux machine - where all the RPM files and scipts have been downloaded,- to the `/tmp/ocsm` folder on the Repo server.
6. Navigate to the `/tmp/ocsm`folder.

   ```
   cd /tmp/ocsm
   ```
7. Set execute permission as:

   ```
   chmod +x *.sh
   ```
8. Run the following command to prepare the Repo server.

   ```
   - ./Offline_Repo_Server_preparation_Rel_6.0.sh
   ```
9. Login to the Session Monitor server as the root or root privileged user and execute steps 10 to 16.
10. Check that 5 GB to 10 GB free space is available in the /tmp folder on the Session Monitor Server.
11. If the `/tmp/ocsm` folder is already present, take a backup of the /tmp/ocsm folder if required and delete the folder `/tmp/ocsm`.
12. Create a folder `/tmp/ocsm`.

    ```
    mkdir /tmp/ocsm
    ```
13. Transfer all the contents of the folder `/tmp/ocsm` on the Repo server to the folder `/tmp/ocsm` on the Session Monitor server.
14. Go to the folder `/tmp/ocsm`.

    ```
    cd /tmp/ocsm
    ```
15. Set execute permission as:

    ```
    chmod +x *.sh
    ```
16. Run the following commands:

- If you are upgrading from from Release 5.1 or Release 5.2 to Release 6.0, then run the below script :

  ```
  ./Offline_Upgrade_OCSM_Rel_6.0.sh <REPO_SERVER_IP>
  ```

  For example:

  ```
  ./Offline_Upgrade_OCSM_Rel_6.0.sh 192.168.1.10
  ```

- If you are upgrading from Release 6.0 to a higher version, then use the zip file upload method in Session Monitor Platform Setup Application user interface.

Installing Any New Package on the Session Monitor Server

Complete the tasks given in this section to install any new package on the Session Monitor server.

To install any new package on the Session Monitor Server:

1. Download the required rpm and their dependencies from yum.oracle.com OL8 repo manually
2. Copy the RPMs to `/var/ftp/pub/ocsm/` location of the Repo Server.
3. On the Repo Server, execute the following command:

   ```
   createrepo /var/ftp/pub/ocsm/
   ```

4. On the Session Monitor Server, execute the following command:

   ```
   yum clean all
   ```

5. Install the package on the Session Monitor Server using the command:

   ```
   yum install <package>
   ```

   OR You can update the `Download_rpm.sh` script by putting the RPM names under the respective Repo links and follow the steps.

Enabling or Disabling SELinux After Upgrading

After upgrading to Session Monitor Release 6.0, it is mandatory to enable or disable SELinux again as per your requirement.

SELinux policy modules have changed with Session Monitor Release 6.0, For more information, see Enabling SELinux in the Session Monitor Release 6.0 Installation Guide.

Enabling SELinux After the Upgrade

After the upgrade, it is mandatory to enable or disable SELinux again as per your requirement.

- To enable SELinux run the following commands:
  1. Run these commands:

     ```
     sed -i -e "s/^SELINUX=.*/SELINUX=enforcing/" /etc/selinux/config
     ```

```
sed -i -e "s/^SELINUXTYPE=.*/SELINUXTYPE=targeted/" /etc/selinux/config

reboot
```

2. Install the new customized SELinux policy modules for Session monitor using the command:

```
cd /opt/oracle/ocsm/
./ocsm_ext.sh
```

Disabling SELinux After the Upgrade

After the upgrade, it is mandatory to enable or disable SELinux again as per your requirement.

- To disable SELinux:
  - Run the following commands:

```
sed -i -e "s/^SELINUX=.*/SELINUX=disabled/" /etc/selinux/config
reboot
```

Dependency RPMs

This section describes the RPMs needed to install Session Monitor without an internet connection.

> **Note:**
>
> The versions of Dependency RPMs used in this procedure are the latest available versions at the time of this release based on:
>
> - Oracle Linux 8.10
> - MySQL 8.4.4
> - The RPM file for Session Monitor Release 6.0.0.0.0.

> **Note:**
>
> Use the latest versions of dependency RPMs for all future patch releases based on the Oracle Linux, MySQL and OCSM RPM used.

BaseOS Latest: https://yum.oracle.com/repo/OracleLinux/OL8/baseos/latest/x86_64/index.html.

1. keyutils-libs-devel-1.5.10-9.el8.x86_64.rpm
2. krb5-devel-1.18.2-26.0.1.el8_9.x86_64.rpm
3. libcom_err-devel-1.45.6-5.el8.x86_64.rpm
4. libkadm5-1.18.2-26.0.1.el8_9.x86_64.rpm
5. libpkgconf-1.4.2-1.el8.x86_64.rpm

6. libselinux-devel-2.9-8.el8.x86_64.rpm
7. libsepol-devel-2.9-3.el8.x86_64.rpm
8. libverto-devel-0.3.2-2.el8.x86_64.rpm
9. pciutils-3.7.0-3.el8.x86_64.rpm
10. pcre2-devel-10.32-3.el8_6.x86_64.rpm
11. pcre2-utf16-10.32-3.el8_6.x86_64.rpm
12. pcre2-utf32-10.32-3.el8_6.x86_64.rpm
13. perl-Carp-1.42-396.el8.noarch.rpm
14. perl-Data-Dumper-2.167-399.el8.x86_64.rpm
15. perl-Digest-1.17-395.el8.noarch.rpm
16. perl-Digest-MD5-2.55-396.el8.x86_64.rpm
17. perl-Encode-2.97-3.el8.x86_64.rpm
18. perl-Errno-1.28-422.el8.x86_64.rpm
19. perl-Exporter-5.72-396.el8.noarch.rpm
20. perl-File-Path-2.15-2.el8.noarch.rpm
21. perl-File-Temp-0.230.600-1.el8.noarch.rpm
22. perl-Getopt-Long-2.50-4.el8.noarch.rpm
23. perl-HTTP-Tiny-0.074-3.el8.noarch.rpm
24. perl-IO-1.38-422.el8.x86_64.rpm
25. perl-IO-Socket-IP-0.39-5.el8.noarch.rpm
26. perl-MIME-Base64-3.15-396.el8.x86_64.rpm
27. perl-PathTools-3.74-1.el8.x86_64.rpm
28. perl-Pod-Escapes-1.07-395.el8.noarch.rpm
29. perl-Pod-Perldoc-3.28-396.el8.noarch.rpm
30. perl-Pod-Simple-3.35-395.el8.noarch.rpm
31. perl-Pod-Usage-1.69-395.el8.noarch.rpm
32. perl-Scalar-List-Utils-1.49-2.el8.x86_64.rpm
33. perl-Socket-2.027-3.el8.x86_64.rpm
34. perl-Storable-3.11-3.el8.x86_64.rpm
35. perl-Term-ANSIColor-4.06-396.el8.noarch.rpm
36. perl-Term-Cap-1.17-395.el8.noarch.rpm
37. perl-Text-ParseWords-3.30-395.el8.noarch.rpm
38. perl-Text-Tabs+Wrap-2013.0523-395.el8.noarch.rpm
39. perl-Time-Local-1.280-1.el8.noarch.rpm
40. perl-URI-1.73-3.el8.noarch.rpm
41. perl-Unicode-Normalize-1.25-396.el8.x86_64.rpm
42. perl-constant-1.33-396.el8.noarch.rpm
43. perl-interpreter-5.26.3-422.el8.x86_64.rpm

44. perl-libnet-3.11-3.el8.noarch.rpm
45. perl-libs-5.26.3-422.el8.x86_64.rpm
46. perl-macros-5.26.3-422.el8.x86_64.rpm
47. perl-parent-0.237-1.el8.noarch.rpm
48. erl-podlators-4.11-1.el8.noarch.rpm
49. perl-threads-2.21-2.el8.x86_64.rpm
50. perl-threads-shared-1.58-2.el8.x86_64.rpm
51. pkgconf-1.4.2-1.el8.x86_64.rpm
52. pkgconf-m4-1.4.2-1.el8.noarch.rpm
53. pkgconf-pkg-config-1.4.2-1.el8.x86_64.rpm
54. python3-chardet-3.0.4-7.el8.noarch.rpm
55. python3-idna-2.5-7.el8_10.noarch.rpm
56. python3-requests-2.20.0-3.el8_8.noarch.rpm
57. python3-urllib3-1.24.2-8.el8_10.noarch.rpm
58. libicu-60.3-2.el8_1.x86_64.rpm
59. libmetalink-0.1.3-7.el8.x86_64.rpm
60. zlib-devel-1.2.11-25.el8.x86_64.rpm
61. dejavu-fonts-common-2.35-7.el8.noarch.rpm
62. dejavu-sans-fonts-2.35-7.el8.noarch.rpm
63. dejavu-serif-fonts-2.35-7.el8.noarch.rpm
64. fontpackages-filesystem-1.44-22.el8.noarch.rpm
65. lm_sensors-libs-3.4.0-23.20180522git70f7e08.el8.x86_64.rpm
66. net-snmp-libs-5.8-30.0.1.el8.x86_64.rpm
67. net-tools-2.0-0.52.20160912git.el8.x86_64.rpm
68. numactl-devel-2.0.16-4.el8.x86_64.rpm
69. openssl-perl-1.1.1k-12.el8_9.x86_64.rpm
70. openssl-devel-1.1.1k-12.el8_9.x86_64.rpm
71. python3-setuptools-39.2.0-7.el8.noarch.rpm
72. python3-pysocks-1.6.8-3.el8.noarch.rpm
73. unzip-6.0-46.el8.x86_64.rpm

AppStream Latest: https://yum.oracle.com/repo/OracleLinux/OL8/appstream/x86_64/index.html

1. perl-IO-Socket-SSL-2.066-4.module+el8.6.0+20623+f0897f98.noarch.rpm
2. perl-JSON-2.97.001-2.el8.noarch.rpm
3. perl-Memoize-1.03-422.el8.noarch.rpm
4. perl-Mozilla-CA-20160104-7.0.1.module+el8.3.0+21136+b437fca9.noarch.rpm
5. perl-Net-SSLeay-1.88-2.module+el8.6.0+20623+f0897f98.x86_64.rpm
6. perl-Time-HiRes-1.9758-2.el8.x86_64.rpm

7. python3.11-3.11.10-1.0.1.el8_10.x86_64.rpm
8. python3.11-libs-3.11.10-1.0.1.el8_10.x86_64.rpm
9. python3.11-pip-wheel-22.3.1-5.el8.noarch.rpm
10. python3.11-pyyaml-6.0-1.el8.x86_64.rpm
11. python3.11-setuptools-wheel-65.5.1-3.el8_10.noarch.rpm
12. wget-1.19.5-12.0.1.el8_10.x86_64.rpm
13. boost-filesystem-1.66.0-13.el8.x86_64.rpm
14. boost-program-options-1.66.0-13.el8.x86_64.rpm
15. boost-regex-1.66.0-13.el8.x86_64.rpm
16. boost-system-1.66.0-13.el8.x86_64.rpm
17. geolite2-city-20180605-1.el8.noarch.rpm
18. geolite2-country-20180605-1.el8.noarch.rpm
19. libmaxminddb-1.2.0-10.el8_9.1.x86_64.rpm
20. mpdecimal-2.5.1-3.el8.x86_64.rpm
21. python3.11-pip-22.3.1-5.el8.noarch.rpm
22. python3.11-setuptools-65.5.1-3.el8_10.noarch.rpm
23. fribidi-1.0.4-9.el8.x86_64.rpm
24. graphite2-1.3.10-10.el8.x86_64.rpm
25. harfbuzz-1.7.5-4.el8.x86_64.rpm
26. jbigkit-libs-2.1-14.el8.x86_64.rpm
27. lcms2-2.9-2.el8.x86_64.rpm
28. libX11-1.6.8-9.el8_10.x86_64.rpm
29. libX11-common-1.6.8-9.el8_10.noarch.rpm
30. libXau-1.0.9-3.el8.x86_64.rpm
31. libjpeg-turbo-1.5.3-12.el8.x86_64.rpm
32. libsmi-0.4.8-23.el8.x86_64.rpm
33. libtiff-4.0.9-33.el8_10.x86_64.rpm
34. libwebp-1.0.0-9.el8_9.1.x86_64.rpm
35. libxcb-1.13.1-1.el8.x86_64.rpm
36. mariadb-connector-c-3.1.11-2.el8_3.x86_64.rpm
37. net-snmp-5.8-30.0.1.el8.x86_64.rpm
38. net-snmp-agent-libs-5.8-30.0.1.el8.x86_64.rpm
39. openjpeg2-2.4.0-5.el8.x86_64.rpm
40. python3-pillow-5.1.1-21.el8_10.x86_64.rpm
41. python3-reportlab-3.4.0-9.el8.x86_64.rpm
42. sbc-1.3-9.el8.x86_64.rpm
43. whois-5.5.1-2.el8.x86_64.rpm
44. whois-nls-5.5.1-2.el8.noarch.rpm

45. vsftpd-3.0.3-36.el8.x86_64.rpm
46. drpm-0.4.1-3.el8.x86_64.rpm
47. createrepo_c-0.17.7-6.el8.x86_64.rpm
48. createrepo_c-libs-0.17.7-6.el8.x86_64.rpm

Developer EPEL Packages: https://yum.oracle.com/repo/OracleLinux/OL8/developer/EPEL/x86_64/index.html

1. ibimagequant-2.12.5-1.el8.x86_64.rpm
2. libraqm-0.7.0-4.el8.x86_64.rpm
3. spandsp-0.0.6-9.el8.x86_64.rpm

2

Upgrading DPDK

DPDK upgrade is required. Session Monitor Release 6.0 and above supports DPDK version 23.11.2 only.
To update DPDK:

1. Follow the instructions in Uninstalling DPDK.
2. Follow the instructions in Installing and Configuring DPDK with Internet for Intel or Installing and Configuring DPDK without Internet for Intel based on the set up below.
3. Reboot the machine that hosts the probe, or mediation engine and probe.

Uninstalling DPDK

This section describes the instructions for uninstalling DPDK.
To uninstall DPDK:

- Run the following commands:

```
source /opt/oracle/ocsm/ocsm_env.sh

/opt/oracle/ocsm/usr/share/pld/rat/configure_dpdk.py --remove
```

Installing and Configuring DPDK with Internet for Intel

> **Note:**
>
> You must be connected to the internet before starting the installation. Running the following command installs, downloads the required files, and configures the DPDK automatically.

For DPDK installation, for Oracle X9-2 server has the following pre-requisites:

1. Log into the Platform Setup Application page:
   a. Select **Capture Settings**.
   b. Check the box in **Monitoring** column against each sniffing interface that you want to use for capturing the traffic.
2. Log into the machine that hosts the probe or mediation engine and probe as a **root** user.
3. (Optional) For better understanding of the network, CPU, and NUMA nodes of the server, you can run the following command to review the output of the **system_layout.py** script, that will display system information:

```
source /opt/oracle/ocsm/ocsm_env.sh
/opt/oracle/ocsm/usr/share/pld/rat/system_layout.py
```

4. Run the following commands which guides you through the installation:

```
source /opt/oracle/ocsm/ocsm_env.sh
python3 -m pip install meson
python3 -m pip install ninja
python3 -m pip install pyelftools
yum install -y git
yum install -y gcc-toolset-11.x86_64
git clone http://dpdk.org/git/dpdk-kmods (This command is
to be executed in root folder)
scl enable gcc-toolset-11 '/opt/oracle/ocsm/usr/share/pld/rat/
configure_dpdk.py'
```

   The **configure_dpdk.py** script downloads and installs the required DPDK driver, the corresponding Kernel headers required for compiling DPDK driver, compiles, installs the driver, and creates server and Session Monitor DPDK related configuration.

5. (Optional) To view all the available advanced options, run the following command:

```
/opt/oracle/ocsm/usr/share/pld/rat/configure_dpdk.py -h
```

6. Reboot the machine that hosts the probe or mediation engine and probe.

Installing and Configuring DPDK without Internet for Intel

1. Log into the Platform Setup Application page:
   a. Select **Capture Settings**.
   b. Check the box in Monitoring column against each sniffing interface that you want to use for capturing the traffic.
2. Log into the machine that hosts the probe or mediation engine and probe as a **root** user.
3. (Optional) For better understanding of the network, CPU, and NUMA nodes of the server, run the system_layout.py script to display system information.

```
source /opt/oracle/ocsm/ocsm_env.sh
/opt/oracle/ocsm/usr/share/pld/rat/system_layout.py
```

4. Run the following command to download and install the kernel:

> **Note:**
>
> For offline installation of DPDK, check the Kernel version before downloading. The Kernel version in the `Download_rpms.sh` script is currently - "`kernel-uek-devel-5.15.0-3.60.5.1.el8uek.x86_64.rpm`". The Kernel dependency libraries are also present in the `Download_rpms.sh` script. The Kernel version is subject to change and hence we recommend you to check the `uname -r` and then download the corresponding RPM file and their dependencies from the YUM repository and place the appropriate Kernel version RPM file in the `Download_rpms.sh script`. Or, you can download and copy the RPM file and their dependencies to the existing offline REPO server. For more information, see Installing Session Monitor.
> After downloading the RPM file, run this command:

```
yum install kernel-uek-devel-$(uname -r)
```

5. Download the DPDK tar.gz file from https://fast.dpdk.org/rel into the folder `/var/cache/ocsm/dpdk/`.
6. Run the below commands on a linux terminal connected to internet and download the `dpdk-kmods` folder:

```
yum install git
git clone http://dpdk.org/git/dpdk-kmods
```

7. Copy the downloaded `dpdk-kmods` folder into **root** of the system where DPDK needs to be installed.
8. Download the latest `.whl` files for the meson, ninja and pyelftools libraries from the URLs mentioned below:

Table 2-1 Download URLs

Item	URL
meson-X.X.X-py3-none-any.whl	https://pypi.org/project/meson/#files
ninja-1.11.1-py2.py3-none-manylinux_X_XX_x86_64.manylinux20XX_x86_64.whl	https://pypi.org/project/ninja/#files
pyelftools-X.XX-py2.py3-none-any.whl	https://pypi.org/project/pyelftools/#files

9. Run the following commands as a **root** user:

```
source /opt/oracle/ocsm/ocsm_env.sh
pip3 install meson-X.X.X-py3-none-any.whl --no-index
pip3 install ninja-1.11.1-py2.py3-none-
manylinux_X_XX_x86_64.manylinux20XX_x86_64.whl --no-index
pip3 install pyelftools-X.XX-py2.py3-none-any.whl --no-
index
yum install -y gcc-toolset-11.x86_64
scl enable gcc-toolset-11 '/opt/oracle/ocsm/usr/share/pld/rat/
configure_dpdk.py'
```

10. (Optional) To view all the available advanced options, run the following command:

```
/opt/oracle/ocsm/usr/share/pld/rat/configure_dpdk.py -h
```

11. Reboot the machine that hosts the probe or mediation engine and probe.

Downloading, Installing, and Configuring DPDK for Mellanox NIC Cards

Follow the instructions in this section to install and configure DPDK for Mellanox NIC cards.

1. Installing Mellanox OFED
2. Installing and Configuring DPDK

Installing Mellanox OFED

Complete the following tasks to download and install Mellanox OFED package for Oracle Linux.

The supported networking cards are: Mellanox Technologies MT27800 Family [ConnectX-5].

Ensure that you have installed:

- Oracle Linux 8.10
- Session Monitor Release 6.0
- DPDK Version 23.11.2

1. Download the latest MLNX OFED driver (.iso) based on OS distribution and architecture from the MLNX_OFED Download Center page. Browse to **Downloads** - > **Current Versions**.
2. Run the commands:
   a.
   ```
   mount -o ro,loop MLNX_OFED_LINUX-xxxx /mnt
   ```
   b. Run this command:
   ```
   yum install rpm-build
   ```

   > **Note:**
   >
   > The command may fail while building RPMs and may require the appropriate dependencies to be installed. Based on the dependency errors, the required packages must be installed. This builds the RPMs based on the underlying Kernel version and copy the RPMs to `/tmp/xxx.tgz`.

   c.
   ```
   cd /mnt/
   /mnt/mlnx_add_kernel_support.sh -m /mnt --make-tgz
   ```

3. Install the MLNX OFED with upstream-libs:

```
cd /tmp
tar -xzvf MLxxxxx.tgz
cd /MLxxxxxxxx
./mlnxofedinstall --upstream-libs
```

> **Note:**
>
> For more information, see Installing Mellanox OFED.

4. Load the MLNX driver module.

```
modprobe mlx5_ib
```

5. Make sure that the `mlx kernel modules mlx5_ib`, `mlx5_core`, `ib_uverbs` are loaded.

```
lsmod | grep mlx5
lsmod | grep ib_uverbs
```

Installing and Configuring DPDK

Complete the following tasks to install and configure DPDK for Mellanox NIC cards.

1. Create a file `/opt/oracle/ocsm/etc/iptego/white_list_dpdk.local` with the value **mlx5_core** before starting the DPDK installation.
2. Log into the **Platform Setup** Application page.
   a. Select **Capture Settings**.
   b. Check the box in the **Monitoring** column against each sniffing interface that you want to use for capturing the traffic.
3. Log into the machine that hosts the probe or the mediation engine and probe as a **root** user.

   (Optional) For better understanding of the network, CPU, and NUMA nodes of the server, run the `system_layout.py` script to display system information.

```
source /opt/oracle/ocsm/ocsm_env.sh
/opt/oracle/ocsm/usr/share/pld/rat/system_layout.py
```

> **Note:**
>
> If you observe a Python error while executing the .py files, run the command `update-alternatives --config python3` and select the `/usr/bin/python3.9` option.

4. Run the command:

```
yum install kernel-uek-devel-$(uname -r)
```

5. Download the DPDK tar file from https://fast.dpdk.org/rel/ into the folder `/var/cache/ocsm/dpdk/`.
6. Untar and open the file in edit mode.

   `/var/cache/ocsm/dpdk/dpdk-<version>/config/common_base`

7. Run the following commands as a root user:

```
source /opt/oracle/ocsm/ocsm_env.sh
python3 -m pip install meson
python3 -m pip install ninja
python3 -m pip install pyelftools
yum  install gcc-toolset-11.x86_64
scl enable gcc-toolset-11 '/opt/oracle/ocsm/usr/share/pld/rat/
configure_dpdk_mlx.py'
```

8. Reboot the machine that hosts the probe or the mediation engine and probe.
9. MLNX drivers require root privileges for the Promiscuous Mode to be enabled. Assign **root** user privileges to the **ocsm** user.
10. Open file in edit mode: `/etc/passwd`
11. Change line `ocsm:x:998:996::/opt/oracle/ocsm:/sbin/nologin` to `ocsm:x:0:0::/opt/oracle/ocsm:/sbin/nologin`
12. Restart the RAT service (pld-rat): `systemctl restart pld-rat`

DPDK with Higher Throughput

Starting with Session Monitor Release 5.1, both dynamic memory mode and legacy memory mode is supported. DPDK probe can reach up to 3.2 Mpps on a single port when legacy memory mode is enabled.

> **Note:**
>
> This applies only for Intel NIC cards.

Legacy Memory Mode

Add the below configurations in the `rat.dpdk.conf`.

```
[dpdk]
mem_mode = 2

[sniffer/xx_xx_x]
dpdk_rx_ring_desc = 1024
```

After making the changes, restart the rat process using the command `systemctl restart pld-rat`.

3
Upgrading MySQL

The MySQL upgrade occurs as a part of the Session Monitor Release 6.0 upgrade. For more information, see the section, upgrading Session Monitor.