

SolutionPack for Ericsson IMS HSS SLF

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Summary Sheet

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Overview

This article explains how to install and configure the SolutionPack for Ericsson IMS HSS SLF (Subscriber Locator Function). The Home Subscriber Server (HSS) is the central IMS user database that stores all IMS subscription information. The SolutionPack for Ericsson IMS HSS SLF reports on the information in the HSS, including user registration and user subscription.

This SolutionPack is one of many provided with [Service Assurance Suite](#).

Technical specifications

SolutionPack version

- ◆ 1.0

Compatible Watch4net version

- ◆ 6.3u2 and later

Data collection method

All metrics are parsed through 3GPP standard xml files.

- ◆ XML collector

Performance measurement data

The SolutionPack for Ericsson IMS TSP monitors and collects performance measurement data for this SolutionPack. If you want to generate the reports that show this data, make sure you install the SolutionPack for Ericsson IMS TSP.

Main reports

- ◆ Diameter (Cx)
 - IMS Number of Protocol Errors and Permanent Failures per HSS, SLF
 - IMS Number of Sent / Received Requests
 - IMS Number of Sent / Received Answers
 - IMS Number of Sent / Received Unsuccessful Answers
 - IMS Number of Incoming / Outgoing Discarded Messages
- ◆ HSS
 - HSS Number of Users
 - HSS Stored Amount of Wildcarded Public Service Identity (PSI)
 - HSS Stored Amount of Private ID Ranges
 - HSS-Subscription
 - IMS HSS Overload Rejection Ratio
- ◆ SLF
 - SLF Overall Summary
 - IMS SLF Number of Users
 - Redirected Correct Answers Per Destination Server [per Node]

- Number of Dx Answers with the DIAMETER_ERROR_USER_UNKNOWN [per CSCF]
- Number of Dx Answers with the DIAMETER_REALM_NOT_SERVED
- IMS SLF Dx-Query Attempts [per second] per CSCF
- IMS SLF Dx-Query Answer Success [per second] per CSCF
- ◆ Equipment related information
 - CPU Load (Max, Avg) % each processor and system
 - DiskUsage per IO processor
 - IPv4 Statistic per Interface
 - Memory (Used, Free, Max) % each processor and system
 - ProcessorUptime per processor
 - TSPClusterUptime

Where to find the latest SolutionPack software

SolutionPack software updates

Obtain new or updated SolutionPack software by doing one of the following:

- ◆ Install the latest core software update, such as 6.4. SolutionPacks distributed with core software have a 30-day free evaluation period. If you plan to use the software longer than 30 days, you must install a SolutionPack license before the trial period ends.
- ◆ Upload a `SolutionPackCenter Update.zip` file from **Centralized Management > Packages Management > Packages Listing > Upload**. Since new SolutionPacks distributed in the zip file do not include a 30-day trial license, you must install a license file before installing the SolutionPack.

Collecting performance parameters

Before installing a SolutionPack, you must perform certain steps to ensure the SolutionPack is able to collect performance parameters from various IMS components. These parameters are transferred in 3GPP-compliant XML files from IMS to the Watch4net host using SFTP.

Before you begin

Review the configuration options for the XML collector in the *APG-Text-Parsing-Library.pdf* file located in the `<Install_Dir>/APG/Doc` directory of the Watch4net host.

Procedure

1. Create a directory in the Watch4net host for collecting performance data.

For example: `/opt/IMS/incoming/hss_slf`

2. On the directory that you just created, change the permissions to `apg`.

For example: `# chown -R apg:apg /opt/IMS/incoming/hss_slf`

3. Configure the OSS-RC, EMS (Element Management System), mediation node, or other to push the 3GPP-compliant XML files (i.e., Ericsson Report Output Files (ROP)) to the directory created in step 2.

These 3GPP-compliant XML files are listed in the section called *Node, Performance category, Default filename pattern and 3GPP format*.

4. Verify the periodic transfer of the 3GPP-compliant XML files is set accordingly. If your SolutionPack is set to look for updates every five minutes (the default), make sure SFTP is invoked every five minutes as well.
5. SFTP the 3GPP-compliant XML files into the directory that you just created.

Node, performance category, default file name pattern and 3GPP format

You can change the default file name pattern.

The *Ericsson IMS Metrics File* provides a complete listing of the expected counters for each file pattern type. This spreadsheet is available on the EMC support website <http://support.emc.com>.

Table 1 Node, Performance Category, Default file name pattern and 3GPP Format

Node	Performance category	Default file name pattern	3GPP format
HSS-SLF	ISM	A20.*_HSS-ISM	nPMF 32.401v5.0
HSS-SLF	SLF	A20.*_HSS-SLF	nPMF 32.401v5.0
HSS-SLF	SDA	A20.*_HSS-SDA	nPMF 32.401v5.0
TSP	IPv4_MeasurementJob	A20.*hss.*_IPv4.*	nPMF 32.401v5.0
TSP	Diameter	A20.*hss.*_Diameter.*	nPMF 32.401v5.0
TSP	PlatformMeasures	A20.*hss.*_PlatformMeasures.*	oPMF 32.401v5.0
TSP	IPv6_MeasurementJob	A.*hss.*_IPv6.*	oPMF 32.401v5.0
TSP	OamProvision-Measurement	A20.*hss.*_OamProvisioning.*	nPMF 32.401v5.0

Configuring the user process limits for a Linux installation

Increase the user process limits for the user account to a maximum of 65534. This modification enables services to open 65534 files and 65534 processes when needed.

Before you begin

- ◆ Make sure you have a login with root privileges.
- ◆ The installed on a server running Red Hat Enterprise Linux 6, CentOS Linux 6, or SUSE Linux Enterprise Server (SLES) 11.
- ◆ The name specified for the user account during the installation.

Procedure

1. Open the `/etc/security/limits.conf` file.

2. Add the following lines for the user.

In this example, the user is `apg`.

```
apg    hard    nofile    65534
apg    soft    nofile    65534
apg    hard    nproc     65534
apg    soft    nproc     65534
```

3. Save the file.

4. To restart the services, type the following commands from the `bin` directory of the installation:

```
./manage-modules.sh service stop all
```

```
./manage-modules.sh service start all
```

5. To verify the changes, type `su apg -c 'ulimit -n -u'`

Installing a SolutionPack

After you log in as an administrator, you can install a SolutionPack from Centralized Management.

Before you begin

- ◆ Determine whether you need a SolutionPack license file by checking the feature names and expiration dates listed in **Centralized Management > License Management**. If not listed, obtain a license by completing a Support Request (SR) form, which is available on the EMC support website <http://support.emc.com>.
- ◆ Make sure the core modules, such as the Module-Manager, are up-to-date on all servers since not all module dependencies are validated during the SolutionPack installation. See the *Watch4net Installation and Configuration Guide* provides for more information.

Procedure

1. Log in and select **Administration**.

2. Select **Centralized Management** in the Administration tree.

3. Select **SOLUTIONPACK CENTER**.

4. Select the SolutionPack in the **Browse and Install SolutionPacks** screen.

5. Read the summary information and click **Install**.

6. Select the components to install.

a. Type the instance name.

b. Select the server in one or more list boxes. For example, select the server in the **Data collection** and **Reports** list boxes.

c. Click **Next**.

7. For each list box you select, a screen appears.

a. Click **Next** after you complete each screen.

b. Click **Install** after you complete the last screen.

The installation process begins.

8. Select the maximize arrow next to each component to view the installation process.

When the installation successfully completes, green checkmarks appear.

After you finish

After the installation is complete, select **Centralized Management** › **SolutionPack** to verify the installed SolutionPack.

Confirming report creation

After you install a SolutionPack, you can view its reports.

To view the reports:

Procedure

1. Go to **User Interface** › **Report Library**.
2. Click the SolutionPack to view its reports.

Results

It may take a minimum of three polling cycles to display all relevant information in these reports. By default, one polling cycle is five minutes.

Troubleshooting

Report display problems

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What to do if data does not appear in any reports

Procedure

1. After the completion of at least three collection cycles, verify if data is populating into the reports. If there is still no data in the reports, continue to the next step.
2. Run the scheduled task to import data into reports. If there is still no data in the reports, continue to the next step.
3. To view the log files for errors, go to **Centralized Management** and click **Collecting** › **Collector-Manager::<instance name> Log Files**.

What to do if data does not appear in some reports

Procedure

1. Run the scheduled task to import data into reports. If there is still no data in the reports, continue to step 2.
2. Search for the metric in the database.

3. To view the log files for errors, go to **Centralized Management** and click **Collecting > Collector-Manager::<instance name> > Log Files**.

Searching for metrics in the database

You can verify that a metric is being collected and used for reporting when you search and find the metric in the database.

Procedure

1. Go to the **Administration** page.
2. Under **Modules**, click **Management of Database Modules**.
3. On the **Metric Selection** page, create the filter, type the number of results, and select the properties to display for the metric.

For example, to list up to 100 results of the SignalWait Time metric with the properties of device and IP, type `name=='SignalWaitTime'` in the **Filter** field, **100** in the **Maximum results** field, and select device and IP for the **Properties to show**.

4. Click **Query**.

A list of the metric results appears. If nothing displays, the metric is not being collected.

Running a scheduled task to import data into reports

After you push a new configuration into a collector, a scheduled task runs and populates the reports with new data. You can manually run the scheduled task to import the data more quickly.

Before you begin

Allow at least three polling cycles to pass before manually running the scheduled task.

Procedure

1. Click **Administration**.
2. Click **Centralized Management**.
3. Expand **Scheduled Tasks**.
4. Click **Database**.
5. Select the **import-properties-Default** task.
6. Click **Run Now**.
7. Confirm success in running the task in the **Last Result** and **Last Result Time** columns.

Viewing collector errors in the Collector-Manager log files

Review the Collector-Manager log files to troubleshoot problems with data collection.

Procedure

1. Click **Administration**.
2. Click **Centralized Management**.
3. Expand **Collecting**.
4. Click the Collector-Manager for your collector instance.

Collector-Manager::<Collector-Manager instance> - <physical_host_ID>

5. Expand **Log Files** and click the **View File** icon to review the configuration error messages.

Viewing collector errors from the command line

Procedure

- ◆ Use this path to access the log files of the SolutionPack: `/opt/APG/Collecting/Collector-Manager/<ericsson-ims-hss-slf-instance-name>/logs/collecting-0-0.log`

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