Carrier VoIP

IEMS Performance Management

NN10327-711

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Contents

IEMS Performance Management

New in this release

Feature changes

These are the feature changes in this release.

- System Manager Auto-Failover Support

  This feature introduces System Manager support for auto-failover ability. This changes the way the data is forwarded or sent to the OSS (IEMS in this case). The changes for IEMS are as follows:

  — SNMP Requests will go to the logical IP address of the System Manager to retrieve any fault or performance data.

  — No stranded data will go to the OSS from the System Manager via IEMS.

Introduction

In the Integrated Element Management System (IEMS), performance data collected from devices is monitored and displayed in the Configured Collection node located under the Performance node in the client tree. The screen corresponding to this Configured Collection node lists the agents of the various devices from which data collection (of their Object Identifiers known as OIDs) is performed.

Data collection from devices is performed by the data collection job of the IEMS Performance Management module. Data can be collected from the devices using the XML designed templates, and their reports can be generated using the report job options of IEMS Performance Management. Collected data or reports can be transferred to the OSS using the transfer job option of IEMS Performance Management.

Working with data collection jobs

The following section includes procedures on how to add, modify, remove, suspend, and execute data collection jobs for EMSs/NEs based on the performance interface used.

Users who belong to the "emsadmin" group can add, modify, or remove jobs.

Data collection jobs collect the data from EMSs and NEs and store them in the database. Jobs are tasks that are executed by IEMS at a system level, at a specified time. Jobs are used to control a variety of network activities, such as automated backups, routing and prioritizing the network traffic, bandwidth allocation, cleaning up database tables, deleting failed nodes, and other operations.

RMON tables (etherStatsTable and etherHistoryTable) are included in the ERS 8600 default template. To retrieve the operation measurement (OM) data on IEMS, the RMON tables must be configured on ERS 8600. For details, refer to *Configuring Network Management - Ethernet Routing Switch 8600 Series Software*, 314723. If the RMON tables are not configured, you can create a new template to include all ERS 8600 default template information except for the RMON tables. To create a new template, see "Creating a new template" (page 10).

The following table lists the EMSs/NEs for which the IEMS enables you to create, modify, remove, suspend, and execute a data collection job. The data collection is done using the performance user interface. The EMSs/NEs are grouped with their corresponding performance interfaces as shown in the following table.

EMS/NE type	Supported performance interface
CICM-IP	SNMP
CICM-Manager	SNMP
Ethernet Routing Switch 8600 (ERS 8600)	SNMP
Fault and Performance Manager (FPM)	SFTP (Pull)
GWC	SNMP
IEMS	-
MAS	CSV FTP (Push)
MCS Manager	SFTP (Pull)
MDM	TCP
MG 3200	SNMP

EMS/NE type	Supported performance interface
MG 9000 Manager (MG 9000 Manager)	CSV SFTP (Pull)
Media Server 2000 (MS 2000)	SNMP
SAM 21	SNMP
Session Server Lines Manager	SFTP (Pull)
Session Server Trunks	SNMP
SPFS Platform	SNMP
STORM	SNMP
UAS	SNMP
USP	CSV FTP (Pull)

CAUTION
Do not configure the FTP PUSH mode for performance management data in the MCS System Manager if IEMS is configured to collect OM data from the MCS System Manager. IEMS will not collect PM data from MCS System Manager when the system is configured in this way.

Working with SNMP data collection jobs

The SNMP template is primarily used for collecting SNMP data. The SNMP template is an XML file containing OIDs for which data is collected using a data collection job. Each SNMP template file applies to a device type. The SNMP template contains a set of OID attributes for which data is to be collected from the specified devices. SNMP templates are essential for executing the SNMP data collection jobs.

Default templates are available for use with each SNMP-enabled device, and reside in /opt/nortel/iems/current/oidtemplates. You can also create a template or modify a template with the exception of default templates, which cannot be modified.

Refer to the following procedures to add and modify SNMP template files using the IEMS.

- "Creating a new template" (page 10)
- "Modifying a template" (page 12)

The performance details for devices with an SNMP performance interface can be obtained using the SNMP Data Collection Job. An SNMP Data Collection Job can be executed on any of the SNMP-enabled devices listed in the table that follows, which also indicates the corresponding default template.

Any of the default templates can deliver results for a particular device because the template can contain attributes relevant to that device, however the results will not be correct or complete. Therefore, if using default templates, use the default template that corresponds to the device you want to collect data from to receive correct and complete results for that device.

Device	Default template
Passport 8600	PP8600_30_minute_data.xml PP8600_5_minute_data.xml PP8600.xml
STORM	STORM.xml
MG 2000	MS2000.xml
Session Server	SessionServer.xml
CICM	CICM.xml
CICM Manager	CICM.xml
SAM21	SAM21_IPOA.xml
GWC	GWC.xml

Device	Default template
UAS	UAS.xml
SSPFS platform	SSPFS.xml

Refer to the following procedures to add, modify, remove, execute and suspend the SNMP Data Collection Jobs.

- *Adding an SNMP Data Collection Job*
- *Modifying an SNMP Data Collection Job*
- Removing SNMP Data Collection Job: Refer to the "Removing jobs" procedure in *Other job operations*.
- Executing and Suspending SNMP Data Collection Job: Refer to the “Executing jobs” procedure in *Other job operations*.

Creating a new template

Application

Use this procedure to create a template for both SNMP-based devices and non SNMP-based devices.

Templates are used when creating SNMP-based and non SNMP- based data collection jobs. The attributes defined in these templates determine the list of performance metrics for data collection. Each collection job is associated with a specific type of IEMS managed device. However, a template can be assigned to multiple collection jobs. When creating and assigning these templates to a data collection job, you must ensure that the SNMP-based and the non SNMP-based managed devices support the attributes defined by the respective selected MIBs.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Choose the **Tools-->Configure Templates** menu command to invoke the Data Collection & Reporting Templates window.
3	Click the **New** button to create a new template.
4	Enter the template name in the Template Name field.
5	Select the version from the Template Version list box.
6	Select either **SNMP Devices** or **IEMS Object** from the Template For list box as per the requirement. **SNMP Devices:** On selecting it, the template for an SNMP-based device can be created. Here, SNMP attributes defined by the respective MIBs are used for creating the template. **IEMS Object:** On selecting it, the template for non SNMP-based IEMS can be created. Here, attributes of MIBs supporting IEMS are used for defining the template.

7 Click the **Load MIB** button. and select the required MIB from the list in the Select MIBs dialog box and click Open. The MIBs located in the /opt/nortel/iems/current/mibs directory are listed in the MIB Tree.

Button	Function
	This is the Load Mibs button and is used to browse the template files.
	This button is the Unload Mibs button and is used to remove a template file.

MIBs available in other local directories must be copied to the /opt/nortel/iems/current/mibs directory for successful loading.

8 Select the required MIB from the list in the Select MIBs dialog box and click Open. The MIBs located in the /opt/nortel/iems/current/mibs directory are listed in the MIB Tree.

9 Expand the MIB Tree using the **Expand Tree** button and move the required attributes to the Selected Attributes list using the **>>** button. You can collapse the MIB Tree by using the **Collapse Tree** button.

Button	Function
	This is the Expand Tree button.
	This button is the Collapse Tree button.

10 Click the **Save** button after the required attributes are moved to the Selected Attributes list.

A file with the specified template name is created in the "oidtemplates" directory under the /opt/nortel/iems/current directory.

11 Click the **Close** button to close the Data Collection & Reporting Templates window.

12 You have completed this procedure.

—End—

Modifying a template

Application

Use this procedure to modify an existing SNMP-based or a non SNMP-based template.

It is not possible to modify the default templates of the IEMS (located in the /opt/nortel/iems/current/oidtemplates directory). These templates can only be used for data collection.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Choose the **Tools-->ConfigureTemplates** menu command to open the Data Collection & Reporting Templates window.
3	Click the **Browse** button to invoke the file chooser dialog.
4	Select the required template file from the file chooser and click the **Open** button.
5	Load the required MIB using the **Load MIB** button (if required) in the XML Tree panel.
6	Expand the MIB Tree and move the required nodes to the Selected Attributes list using the **>>** button, and use the **<<** button to remove an attribute from the Selected Attribute list.
7	Click the **Save** button to save the changes to the SNMP template file.
8	Click the **Close** button to close the Data Collection & Reporting Templates window.
9	You have completed the procedure.
	—End—

Adding an SNMP data collection job

Application

Use this procedure to add an SNMP data collection job in IEMS.

The performance details of SNMP-enabled devices in the IEMS can be collected through an SNMP data collection job.

MCS Manager exceptions

CAUTION
Do not configure the FTP PUSH mode for performance management data in the MCS System Manager if IEMS is configured to collect OM data from the MCS System Manager. IEMS will not collect PM data from MCS System Manager when the system is configured in this way.

For MCS Manager, the MCS Manager data collection job collects only the data collected by MCS System Manager from the moment the data collection job is first executed. IEMS ignores the old data collected by MCS System Manager that was collected before the first execution of the MCS data collection job.

The MCS System Manager does not collect operational measurement (OM) data immediately after the MCS System Manager is started. The MCS OM data collection in the System Manager is triggered approximately 30 minutes from the time the System Manager was started.

Example

For a 30-minute collection interval, if the System Manager started at 12:05, the OM collection occurs approximately at 12:35, 1:05, 1:35, and so on.

As IEMS cannot determine when the System Manager was started, the MCS OM data delivery to an OSS system in (I)SN07 can be delayed by as much as a full collection interval. In the above example, for a 30-minute collection interval the data delivery to the OSS could be delayed for more than 30 minutes since the IEMS takes some time to handle this data.

Prerequisites

To perform this procedure you must:

- be a member of the emsadm user group

- already have provisioned a corresponding data collection job for the device type

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111 .
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the **Jobs** node and select the **Add Job** menu item to invoke the Add Job window. You can also add a job using the **Job-->Add Job** menu command to invoke the Add Job window.
4	Select the **Collection Job** item from the Select Job list box.
5	Enter the name for the collection job in the Instance Name field or retain the default name.
6	Click the **Add** button to open the IEMS Performance Metrics Collection Job window. *The IEMS Performance Metrics Collection Job Details window opens and the name of the job is displayed in the Name field.*
7	Select either **Enabled** or **Disabled** in the Status list box. By default, the status selected is **Enabled**. While adding the job details for a device, you can ignore the greyed out fields and their corresponding values in the IEMS Performance Metrics Collection Job Details window.
8	Enter the starting time of the job in the Start Time field. *If start time is not provided, the job is activated immediately.*
9	Select the Stop Time field (if required) and specify the time for stopping the collection job. *If no stop time is specified, the job remains active indefinitely.*
10	Select the device type from the Device Type field. The collection job is to be performed for the selected device type.
11	Select from the Included Device List field, the devices for which you want data to be collected.

12 If required, check the Include newly discovered devices check box.

13 Select the granularity period in minutes from the Granularity Period list box.

14 Enter the offset time in seconds in the Offset field.

The offset is set to prevent any loss in data collection when a Data Collection Job is triggered. The offset allows the user to define a delay for when the IEMS collection job runs. When device processing and IEMS collection are scheduled to run at the same interval, this allows time for the device to complete its work before the IEMS collection is run. This prevents any data loss during the time of execution of the job and the process of data collection.

Example
If a device gathers its PM data on every five minute interval and it takes two seconds to process, you can set the offset in IEMS to three seconds.

15 If required, add the template file to the Template Name field. Use the **Browse** button to select the template file. If using a default template, select the default template that corresponds to the device you want to collect data from.

Button	Function
	This button is used to browse the template files listed in the IEMS Perf Templates dialog box.
	This button is used to remove a template file listed in the Template Name text field.

To support the SAM21_IPOA.xml, the SAM21 shelf must have an ATM PCI card which is attached to the shelf controller card. The SAM21_IPOA.xml template is only applicable if the SAM21 ATM PCI card installed.

The template files are stored in the oidtemplates directory under the /opt/nortel/iems/current directory.

16 Select the next step as follows:

If the selected device is	do
USP	step 17

If the selected device is	do
MAS, MCS Manager, SSLines, SSLines Manager, or FPM Manager	step 18
any other device	step 20

17 Select the time period (5 Min Collection or 30 Min Collection) in the Collection Type list box.

Go to step 20 to continue.

18 Enter the directory name in which the data collection files are stored in the Directory Name field. IEMS retrieves the files from the specified directory using FTP or SFTP (PULL or PUSH mode).

19 Enter any file mask in the File Mask field for searching files from the specified directory.

Example

If you want to retrieve all .csv files whose names start with the alphabetic “a” from the directory, then enter the file mask as a*.csv in the File Mask field.

20 Click the **OK** button to add the data collection job with the provided details.

21 You have completed this procedure.

—End—

Modifying an SNMP data collection job

Application

Use this procedure to modify the existing SNMP data collection job.

The existing SNMP data collection job may require changes in the granularity period, offset period, start or stop time, or template.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111 .
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the required SNMP data collection job from the Jobs table and select the **Modify Job** menu item. This opens the IEMS Performance Metrics CollectionJob window. You can also modify a job using the **Edit-->Modify** Job menu command to open the IEMS Performance Metrics CollectionJob window.
4	If required, modify the properties that are listed below. • Status (Indicates whether the job is enabled or disabled.) • Start Time (The job is activated as soon as the start time is reached. If the start time is not provided, the job is activated immediately.) • Stop Time (The job is deactivated as soon as the stop time (if specified) is reached. If no stop time is specified, the job remains active indefinitely.) • Device Type (The specific devices that are to be included in this collection job.) • Granularity Period (The time interval (in minutes) between the two successive executions of a job.) • Offset (The delay of the period (in seconds) with the time in system clock.) • Template Name (The name of the XML file containing the scalar or columnar OID used to construct SNMP Protocol Data Unit

for which the data is collected. The template files are stored in the oidtemplates directory under the /opt/nortel/iems/current directory). If using default templates, use the default template that corresponds to the device you want to collect data from.

5 Click the **OK** button to update the changes in the IEMS server for the selected data collection job.

The modified job is either executed according to the scheduled start time or it can be restarted to resume collection according to the modified configurations. To restart the job, set the status to disable and then to enable.

6 You have completed this procedure.

—End—

Working with CSV data collection jobs

The performance details of devices with a CSV performance interface can be obtained using the CSV data collection job. The CSV performance interface devices collect data from all other devices of the network and stores them in CSV format files. The CSV format files contain details such as device type, IP address, time of creation of the file, report file name, and the report type. For example: MCS.192.234.110.136-MCS.OMs.qos.2004.04.05_14.45_IST.xml.

This section describes how to add, modify, remove, and execute and suspend the CSV data collection job for the following CSV-enabled devices in the IEMS:

- MAS
- MCS Manager
- FPM
- MG 9000 Manager
- SSLines Manager
- USP

CAUTION
Do not configure the FTP PUSH mode for performance management data in the MCS System Manager if IEMS is configured to collect OM data from the MCS System Manager. IEMS will not collect PM data from MCS System Manager when the system is configured in this way.

IEMS receives the CSV format files from the MAS devices using the FTP push mode. These files are stored in the directory configured while adding a MAS NE. For more details, refer to "Adding a Media Application Server" in *IEMS Configuration*, NN10330-511. The configured directory is created on a rotation basis under the /opt/nortel/iems/current/perfdata directory. IEMS parses these directories and creates the polled data.

The data files of the USP NE in the RAW data format are transferred from the device and stored under the /opt/nortel/iems/current/perfdata directory without converting them to CSV format.

Similarly, for the MCS Manager and the MG 9000 Manager, the IEMS performs an SFTP pull operation and, for the USP NE, an FTP pull operation to retrieve the data collection file. The CSV formatted file is stored in the configured directory on a rotation basis under the /opt/nortel/iems/current/perfdata directory.

The MG 9000 devices send Corba notification to IEMS to process available OM files. The collection jobs configured for the MG 9000 devices are only executed when the granularity period available in the Corba notification matches the granularity period of the collection job in IEMS.

Adding a CSV data collection job

CAUTION
Do not configure the FTP PUSH mode for performance management data in the MCS System Manager if IEMS is configured to collect OM data from the MCS System Manager. IEMS will not collect PM data from MCS System Manager when the system is configured in this way.

Application

Use this procedure to add the CSV data collection job for the following CSV-enabled devices in the IEMS:

- MAS
- MCS Manager
- FPM
- MG 9000 Manager
- USP

For MCS Manager, the MCS Manager data collection job collects only the data collected by MCS System Manager from the moment data collection job is first executed. IEMS ignores the old data collected by MCS System Manager that was collected before the first execution of the MCS data collection job. The MCS System Manager does not collect operational measurement (OM) data immediately after the MCS System Manager is started. The MCS OM data collection in the System Manager is triggered approximately 30 minutes from the time the System Manager was started.

Example
For a 30-minute collection interval, if the System Manager started at 12:05, the OM collection occurs approximately at 12:35, 1:05, 1:35, and so on.

As IEMS cannot determine when the System Manager was started, the MCS OM data delivery to an OSS system in (I)SN07 can be delayed by as much as a full collection interval. In the above example, for a 30-minute collection interval the data delivery to the OSS could be delayed for more than 30 minutes since the IEMS takes some time to handle this data.

For further details on configuring performance management for MAS, refer to *Nortel Media Application Server Performance Management*, NN10455-711.

A CSV data collection job can be added to retrieve the performance details of the devices.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the **Jobs** node and select the **Add Job** menu item to invoke the Add Job window. You can also add a job using the **Job-->Add Job** menu command to invoke the Add Job window.
4	Select the **Collection Job** item from the Select Job list box.
5	Enter the name for the collection job in the Instance Name field or retain the default name.
6	Click the **Add** button to invoke the IEMS Performance Metrics Collection Job window. *When the IEMS Performance Metrics Collection Job Details window opens, the name of the job is displayed for the Name field.* While adding the job details for a device, you can ignore the greyed out fields and their corresponding values in the IEMS Performance Metrics Collection Job Details window.
7	Select either **Enabled** or **Disabled** in the Status list box. By default, the status selected is **Enabled**.
8	Enter the starting time for the job in the Start Time field. If the start time is not provided, the job is activated immediately.
9	Select the Stop Time field (if required) and specify when the collection job needs to be stopped. If no stop time is specified, the job remains active indefinitely.
10	Select the device type for the collection job from the Device Type field. The collection job is to be performed for the selected device type.
11	Exclude the devices listed in the Excluded Device List field for which you do not want data to be collected.
12	Select the granularity period in minutes from the Granularity Period list box.

13 Enter the offset time in seconds in the Offset field. The offset is set to prevent any loss in data collection when a Data Collection Job is triggered.

Example
If a job is scheduled for every 10 seconds with an offset of 2 seconds, then the server takes the scheduled time and the offset time period (that is, 12 seconds), to collect data from the device. This prevents any data loss during the time of execution of the job and the process of data collection.

If the selected device is	Do
MAS and MCS Manager	Follow step 15, step 16, and step 17
USP	Follow step 14 and step 17
MG 9000 Manager	Follow step 17

14 Select the time period (5 Min Collection or 30 Min Collection) of the Collection Job from the Collection Job list box.

15 Enter the directory name in which the data collection files are stored in the Directory Name field. IEMS retrieves the files from the specified directory using FTP or SFTP (PULL or PUSH mode).

16 Enter any file mask in the File Mask field for searching files from the specified directory.

Example
If you want to retrieve all .csv files whose names start with the alphabetic "a" from the directory, then enter the file mask as **a*.csv** in the File Mask field

17 Click the **OK** button to add the CSV Data Collection Job with the provided details.

18 You have completed this procedure.

—End—

Modifying a CSV data collection job

Application

Use this procedure to modify the existing CSV data collection job

The existing CSV data collection job may require changes in granularity period, offset period, start/stop time, or template.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the desired CSV data collection job from the Jobs table in the right-side frame and select the **Modify Job** menu item. You can also modify a job using the **Edit-->Modify Job** menu command to launch the IEMS Performance Metrics Collection Job Details window.
4	Modify the following properties as required. • Start Time (The job is activated as soon as the start time is reached. If the start time is not provided, the job is activated immediately.) • Stop Time (The job is deactivated as soon as the stop time (if specified) is reached. If no stop time is specified, the job remains active indefinitely.) • Granularity Period (The time interval (in minutes) between two successive executions of a job.) • Offset (The delay of the period (in seconds) compared to the time in the system clock.) • Collection Job (A collection job can be executed for a 5-minute or 10-minute interval.) • Directory Name (The location where the CSV data collection files are stored.) • File Mask (Used to specify the criteria for searching a data collection file from a given directory.)

5 Click the **OK** button to update the changes in the IEMS server for the selected CSV data collection job.

The modified job is either executed according to the scheduled start time or it can be restarted to resume collection according to the modified configurations.

For MDM collections, which are TCP stream-based, you must disable and re-enable the modified collection job for the changes to take effect.

6 You have completed this procedure.

—End—

Working with report jobs

The report jobs generate reports of collected data stored in the database by the collection job. The reports are collected in XML or CSV formatted files for all specified devices.

Report job naming convention

The report files are named according to the convention as, *<devicetype>.<deviceIP-displayName>-<devicetype>.OMs.<User configured Report Name>.<Year>.<Month>.<day>_<time>_<TimeZone>.<ReportType>*. The generated report file contains the device type, IP address, display name, configured report file name, generation date and time, and the report type.

For example,
STORM.192.234.110.136-TestStorm-STORM.OMs.qos.2004.04.05_14.45_IST.xml.

The collected data includes scalar or columnar variables of a device agent. The values of the columnar variables are stored in a tabular format so that the OSS reads the file to construct the table. IEMS supports the following devices and platforms to generate the report in XML or CSV format files.

- CICM-IP
- CICM Manager
- ERS 8600
- FPM
- GWC
- IEMS
- MAS
- MCS Manager
- MDM
- MG 3200
- MG 9000
- MS 2000
- SAM21
- Session Server Trunks
- SSLines Manager
- SPFS platform

- STORM
- UAS
- USP

Directory structure and directory rotation for report files

All completed report files reside in the /data/oms directory. The report files for the current day are located in directory /data/oms/1 and the report files for the previous day are located in directory in /data/oms/2. Directory /data/oms maintains a subdirectory for each day of retention. For instance, if the IEMS stores report files for up to seven days, directory /data/oms contains seven subdirectories. Each daily subdirectory contains subdirectory /shortinterval which contains report files with a collection interval of five minutes only, and a subdirectory /longinterval which contains report files with a collection interval greater than five minutes.

Each night at 23:59:00, IEMS rotates the daily subdirectories and performs the following steps:

- IEMS deletes the oldest daily directory.
- IEMS renames subdirectory 6 to 7, 5 to 6, 4 to 5, 3 to 4, 2 to 3, and 1 to 2.
- IEMS creates a new subdirectory "1".

Users who belong to the "emsadmin" group can add, modify, or remove jobs.

Adding a report job

Application

Use this procedure to add a report job.

A report job can be created to generate CSV, XML, or RAW OM file reports in the IEMS.

ATTENTION

The MAS NE supports an FTP push of its CSV files to the IEMS. Caution must be exercised when configuring OM collection in the MAS device to not over burden the OM collection system. The following guidelines should be exercised when configuring OM collection in the MAS device.

- The report must not exceed 99 OM attributes.
- The size of the OM file that the MAS device creates must not exceed more than 50 KB in size.
- The sample rate in the MAS device should not be configured to exceed more then 6000 collected values, that is, when collecting 99 attributes the report sample rate in MAS must not exceed a sample rate of five seconds.

Exceeding these guidelines can impact the IEMS collection sub-system and result in increased delays in forwarding this data to an OSS system.

Prerequisites

To perform this procedure, you must

- be a member of the emsadm user group
- already have provisioned a corresponding data collection job for the device type

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the **Jobs** node and select the **Add Job** menu item to open the Add Job window.

You can also add a job using the**Job-->Add Job** menu command to open the Add Job window.

4 Select **Report Job** from the Select Job list box.

5 Enter the name for the report job in the Instance Name field or retain the default name.

6 Click the **Add** button to open the ReportJob Details window.

In the IEMS Performance Metrics ReportJob Details window, the instance name is displayed in the Name field.

7 Select either **Enabled** or **Disabled** from the Status list box. By default, the status is **Enabled**.

8 Select either **Scheduled** or **Triggered** from the Execution Mode list box.

In scheduled mode, reports of the collected data are created and executed according to the scheduled time.

Triggered Mode: In triggered mode, instantaneous reports are created for the current collected data of the selected collection job. To configure a job in triggered mode, ignore the greyed out fields such as Granularity Period and Offset and their corresponding values.

9 Select your next step.

If you want to create a job	go to
in scheduled mode	the next step
in triggered mode	step 17

10 Enter the starting time for the job in the Start Time field.

If the start time is not provided, the job is activated immediately.

11 Select the Stop Time field (if required) and specify when the collection job needs to be stopped.

If no stop time is specified, the job remains active indefinitely.

12 Select the granularity period in minutes from the Granularity Period list box.

13 Enter the offset period in seconds in the Offset field. (The "offset" period is set to prevent any loss in data collected during the triggering of the report job. For example, if a report job is scheduled for every 10 seconds with an offset of 2 seconds, then the server takes the scheduled time and the offset time period [that is, 12 seconds] for

creating the report file. This prevents any data loss during the execution of the report job and the ongoing data collection process.)

The offset period must be at least 1 second to generate a report for 100 kilobytes of collected data.

Example
If the data that needs to generate the report is for 10 files (total size of 1 megabyte), the offset period must be 10 seconds.

14 Select the required device type from the Device Type field.

15 For scheduled report jobs, select the devices for which the report is to be generated from the device list displayed in the Included Device List field.

16 Go to step 19.

17 Select the required device type from the Device Type field.

18 For triggered mode report jobs, select the collection job from the Collection Job List drop-down list. In the triggered mode, a report job must be associated with a data collection job for successful execution.

19 Enter a report name in the Report Name field. The generated report file contains the device type, IP address, display name, configured report file name, generation date and time, and the report type. It is recommended that you include the granularity period in the report name as the generated report file does not specify this.

Example
If you enter the report name "stormdc5MinData", the IEMS generates the following report file, STORM.192.234.110.136-TestStorm-STORM.OMs.stor-mdc5MinData.2004.04.05_14.45_IST.xml.

20 To view the target directory in which the report file is stored, refer to the Target Directory field. The absolute path of this non configurable target directory is */data/oms/1*.

21 Select the report file format from the Report Type list box. (The two types of formats in which the report files can be generated and stored are XML and CSV.)

For the XML report type, the report file extension is .xml, while for the CSV report type, the report file extension is .csv.

Example
XML type:

<devicetype>.<deviceIP-displayName>-<devicetype>.OMs.<report filename>.<date and time of creation of file>.xml
CSV type:
<devicetype>.<deviceIP-displayName>-<device name>.OMs.<report filename>.<date and time of creation of file>.csv

22 Select the Compress Report field to enable the compression of generated reports. This field is enabled by default.

It is recommended that you enable the Compress Report field so that the generated report files are compressed. If this field is not enabled, disk space can be exhausted depending on the number of devices and type of devices configured for report job.

If the Compress Report field is enabled, select the type of compression from the Compression Type list box. The default value is "GZIP" compression type.

23 Click the **OK** button to create the report job with the provided details.

If the Compress Report field is disabled, the following warning message is displayed: "Report files created without compression can exhaust disk space of /data/oms partition. It is advisable to compress the Report file. Do you want to continue? ". Click the **Yes** *button to continue or click the* **No** *button and return to* step 22.

At a given data collection interval, the report job writes data collected from multiple devices of the same device type. The data can be collected by executing multiple data collection jobs.

24 You have completed this procedure.

—End—

Modifying a report job

Application

Use this procedure to modify an existing report job.

The existing report job may require changes in granularity period, offset period, start or stop time, or other details.

Prerequisites

To perform this procedure, you must be a member of the emsadm user group.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	To invoke the Report Job Details window, right-click the required report job from the Jobs table (in the right-side frame) and select the **Modify Job** menu item. You can also modify a job using the **Edit-->Modify** Job menu command to invoke Report Job Details window.
4	Modify the properties in the table below, if required.

Property	Description
Name	The name of the report job.
Status	Select Enabled or Disabled from the drop-down list.
Execution Mode	Select Scheduled or Triggered from the drop-down list. In the Scheduled mode the job is executed as per the scheduled time, while in the triggered mode the job is executed instantaneously.
Start Time	The job is activated as soon as the start time is reached. If the start time is not provided, the job is activated immediately.
Stop Time	The job is deactivated as soon as the stop time (if specified) is reached. If no stop time is specified, the job remains active indefinitely

Property	Description
Granularity Period	The time interval (in minutes) between the two successive executions of a job.
Offset	The delay of the period (in seconds) with the time in system clock.
Device Type	The type of device for which the report job is required.
Included Device List	The list of devices for which the report job is required.
Report Name	The file name of the report to be generated. For example, if you enter the report name "stormdc", the IEMS generates the following report file, STORM.192.234.110.136-TestStorm-STORM.OMs.stormdc.2004.04.05_14.45_IST.xml. The generated report file contains the device type, IP address, display name, configured report file name, generation date and time, and the report type.
Target Directory	The absolute path of the directory in which the report has to be stored. The absolute path of this non configurable target directory is */data/oms/1*.
Report Type	The format in which the report is to be stored. Report files can be stored either in CSV or in XML format.
Compress Report	This field is used to enable compression of the generated reports. Select this field to compress the generated reports. This field is enabled by default.
Compression Type This field is accessible if **Compression Type** is selected. The type of compression must be selected from the list box. It is recommended that you enable the Compress Report field so that the generated report files are compressed. If this field is not enabled, disk space can be exhausted depending on the number of devices and type of devices configured for the report job.	

5 Click the **OK** button to update the changes.

If the Compress Report field is disabled, the following warning message is displayed: "Report files created without compression can exhaust disk space of /data/oms partition. It is advisable to compress the Report file. Do you want to continue?". Click the **Yes** *button to continue*.

6 You have completed this procedure.

—End—

Working with transfer jobs

Transfer jobs are used to transfer report files of collected data from the IEMS to the OSS or to the northbound of the IEMS. The files can be transferred using either File Transfer Protocol (FTP) or Secured File Transfer Protocol (SFTP).

Users who belong to the "emsadmin" group can add, modify, or remove jobs.

Adding a transfer job

Application

Use this procedure to add a transfer job in the IEMS.

The transfer job can be used to transfer the data files and report files from the IEMS to the OSS or to the northbound feed.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the **Jobs** node and select the Add Job menu item. You can also add a job using the **Job-->Add Job** menu command to open the Add Job window.
4	Select the **Transfer Job** from the Select Job list box.
5	Enter the name of the collection job in the Instance Name field or retain the default instance name.
6	Click the **Add** button to invoke the Performance Metrics TransferJob Details window.
7	Select either **Enabled** or **Disabled** from the Status list box. By default, the status is **Enabled**.
8	Select either **Scheduled** or **Triggered** from the Execution Mode list box. In scheduled mode, reports of the collected data are transferred according to the scheduled time. In triggered mode, reports are transferred instantly. For the triggered mode of execution, ignore the greyed out fields such as Granularity Period and Offset and their corresponding values. The instant execution of the transfer job is based on the completion of the associated report job (if it is in the scheduled mode) and on the completion of the data collection job (if the associated report job is in the triggered mode).

9 Select your next step.

If you want to create a job	go to
in scheduled mode	the next step
in triggered mode	step 15

10 Enter the starting time for the job in the Start Time field.

If the start time is not provided, the job is activated immediately.

11 Select the Stop Time field (if required) and specify when the collection job needs to be stopped.

If no stop time is specified, the job remains active indefinitely.

12 Select the granularity period in minutes from the Granularity Period list box.

13 Enter the offset period in seconds in the Offset field.

14 Go to step 17.

15 For triggered reports, select the report job from the Report Job list box to which you want to associate the transfer job. A transfer Job must be associated with a report job in the triggered mode for its successful execution.

16 For triggered reports, select either FTP or SFTP file transfer protocol from the Transfer Protocol list box.

17 Enter the source directory with absolute path in the Source Directory field in which the data or report file is present.

18 In the File Name field, enter the name of the report file to be transferred. The report files are generally either in XML or in CSV format, for example, STORM.192.234.110.136-TestStorm-STORM.OMs.qos.2004.04.05_14.45_IST.xml

These files can be retrieved by using the filemasks or wild card characters. For example, when all the .csv files are to be transferred, they can be sorted using wildcard *.csv*.

19 Enter the destination IP address in the Destination IP Address field to which the data or report file has to be transferred.

ATTENTION

Do not specify the IP address in the client GUI or the command prompt UI, with an octet which is prefixed with a "zero". An IP address whose octet ranges from 0 to 255, when prefixed with zero, such as 010, is interpreted as an octal number and is passed as an "8", which results in incorrect addressing.

20 Enter the destination directory with absolute path in the Destination Directory field to which the data or report file has to be transferred.

21 Enter the user name in the User Name field.

22 Enter the password in the Password field.

23 Click the **OK** button to create the transfer job with the specified details.

24 You have completed this procedure.

—End—

Modifying a transfer job

Application

Use this procedure to modify the existing transfer job in the IEMS.

You can modify the existing transfer job by changing the start time, stop time, granularity period, file to be transferred, and other properties.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Jobs** node under the Administration Tools node in the IEMS tree.
3	Right-click the required transfer job from the Jobs table in the right-side frame and select the **Modify Job** menu item. You can also modify a job using **Edit-->Modify Job** menu command to open the IEMS Performance Metrics TransferJob Details window.
4	Modify the properties in the table below if required. • Execution Mode (The job can be executed in either *Scheduled* mode or in *Triggered* mode. In the Scheduled mode the job is executed according to the scheduled time, and the in triggered mode the job is executed instantly.) • Start Time (The job is activated as soon as the start time is reached. If the start time is not provided, the job is activated immediately.) • Stop Time (The job is deactivated as soon as the stop time (if specified) is reached. If no stop time is specified, the job remains active indefinitely.) • Granularity Period (The time interval (in minutes) between two successive executions of a job.)

- Offset (The delay of the period (in seconds) compared to the time in the system clock.)

Property	Description
Source Path	The absolute path of the directory in which the data or report file to be transferred is present.
File Name	The name of the data or report file to be transferred.
Destination IP Address	The IP address of the destination PC or system to which the file has to be transferred. Do not specify the IP address in the client GUI or the command prompt UI, with an octet which is prefixed with a "zero". An IP address whose octet ranges from 0 to 255, when prefixed with zero, such as 010, is interpreted as an octal number and is passed as an "8", which results in incorrect addressing.
Destination Directory	The absolute path of the destination directory to which the data or report file has to be transferred.
User Name	The user name for the FTP connection.
Password	The password for the FTP connection.

5 Click the **OK** button to update the transfer job with the provided details.

6 You have completed this procedure.

—End—

Working with thresholds

Threshold is defined as the upper or lower limit of a statistical value. In IEMS, this statistical value is a representation of "polled data". Polled data refers to all data that is polled and retrieved from a device. It is the basic unit of data collection. Polled data usually comprises an OID (to poll), polling period, agent name, and many more entities.

Whenever polled data is collected, its value is compared with that of a pre-defined threshold object value. Based on the severity (obtained on comparing with the threshold value) of the polled data, events or alarms are generated. The threshold object can be configured to parameters such as minimum, maximum, and equal value. For example, if the threshold object (for a specific OID) is set to a 10 maximum and the value of the collected polled data is 11, then an alarm is generated once the polled data value exceeds the threshold value.

ATTENTION

Threshold alarming on tabular data in IEMS is not supported. Do not set thresholds on table-based MIBs on IEMS. In this case, the resulting alarms are not correctly configured.

Adding a threshold

Application

Use this procedure to add threshold values for the configured collections of devices in the IEMS.

To associate a threshold with the configured data, threshold values need to be added.

ATTENTION

Threshold alarming on tabular data in IEMS is not supported. Do not set thresholds on table-based MIBs on IEMS. In this case, the resulting alarms are not correctly configured.

Action

Step	Action

At the IEMS workstation

1 Launch the IEMS Client. For details, refer to "Launching the IEMS Java Web Start Client" in *IEMS Overview*, NN10329-111.

2 Navigate to the **Configured Collection** node under the Performance node in the IEMS tree.

3 Select the **Edit --> Threshold --> Add Threshold** menu to invoke the Threshold Properties window.

4 Enter the name of the threshold in the Name field.

5 Select one of the following steps to associate the threshold with a data type.

If you want to associate the threshold with	Do
long-type data	select the long tab. For details see "Input details of threshold properties for long type data" (page 42). The value you provide for this threshold is compared with the data collected for the identifier. Some examples of data identifiers which have long type collected data are IfAdminStat and IfOperStat in RFC 1213 MIB

If you want to associate the threshold with	Do
string-type data	select the string tab. For details see "Input details of threshold properties for string type data" (page 43). For example, you can monitor a change in the system description (SysDescr) by using string thresholds.
percentage-type data	select the percentage tab. For details see "Input details of threshold properties for percentage type data" (page 44). This tab is SNMP-specific and represents the OID from which the value is obtained to calculate the percentage. For example, if you want to be notified when the toner level is 80% of the number of pages to be loaded in a printer, you can do the following: • Create a percentage threshold with the value of 80% • Collect data for the toner level and number of pages in the printer. • Divide the toner level by the number of pages in the printer to find the percentage.

6 Enter the details in the appropriate tab. For details see the following tables.

Input details of threshold properties for long type data

Property	Input Details
Severity	In the drop-down list, select the severity of the event generated when threshold value is exceeded. By default, Critical, Major, Minor, Warning, and Clear are available.
Category	Specify an appropriate name to categorize the generated events. **Example** For threshold events, specify the category as "Threshold".

Property	Input Details
Threshold Type	In the drop-down list, select any of the following threshold types: • Max: To generate an event if the collected value exceeds the threshold value. • Min: To generate an event if the collected value is less than the threshold value • Equal: To generate an event if the collected value is equal to the threshold value
Threshold Value	Specify an integer that compares with the value of the collected data.
Rearm Value	Specify an integer, which denotes that when the collected value reaches the rearm value, the violated threshold is brought back to normalcy and a clear event is generated.
Message	Specify a string that is displayed in the Event Details panel when threshold value is exceeded.
Clear Message	Specify a string that is displayed in the Event Details panel when threshold is reset (cleared).
Send Clear	In the drop-down list, select true or false • If true is selected, then a clear event is generated upon resetting the threshold • If false is selected, the threshold value is reset and no information is displayed in the Event Details panel.

Input details of threshold properties for string type data

Property	Input Details
Category	Specify an appropriate name to categorize the generated events. **Example** To generate threshold events, specify the category as "Threshold".
Trigger Severity	In the drop-down list, select the trigger severity of the event generated when threshold value is exceeded. By default, Critical, Major, Minor, Warning, and Clear are available.
Reset Severity	Specify the severity when the threshold is reset.

Property	Input Details
Message	Specify a string that is displayed in the Event Details panel when the threshold value is exceeded.
Clear Message	Specify a string that is displayed in the Event Details panel when the threshold value is reset (cleared).
Allowed Values	Specify a string that is compared with the collected data string. If both are matched, then a threshold event is generated. You can specify comma separated as well as wild cards.
Disallowed Values	Specify a string that is compared with the collected data string. If both are matched, then threshold event is generated denoting a reset threshold.

Input details of threshold properties for percentage type data

Property	Input Details
Severity	In the drop-down list, select the severity of the event generated when the threshold value is exceeded. By default, Critical, Major, Minor, Warning, and Clear are available.
Category	Specify an appropriate name to categorize the generated events. **Example** To generate threshold events, specify the category as "Threshold".
Threshold Type	In the drop-down list, select any of the following threshold types: • Max: To generate an event if the collected value exceeds the threshold value. • Min: To generate an event if the collected value is less than the threshold value • Equal: To generate and event if the collected value is equal to the threshold value
Threshold Value	Specify an integer that compares with the value of the OID of the collected data.
Rearm Value	Specify an integer, which denotes that when the collected value reaches the rearm value, the violated threshold is brought back to normalcy and a clear event is generated.

Property	Input Details
Message	Specify a string that is displayed in the Event Details panel when the threshold value is exceeded.
Clear Message	Specify a string that is displayed in the Event panel of the when the threshold is reset (cleared).
Send Clear	In the drop-down list, select true or false • If true is selected, then a clear event is generated upon resetting the threshold. • If false is selected, the threshold value is reset and no information is displayed in the Event Details panel.
ObjectID	Specify the object identifier (OID) for which data is to be collected. This field is applicable to threshold objects that use percentage-type data only and is SNMP-specific. This represents the OID from which the value is obtained to calculate the percentage.
ObjectID Type	In the drop-down list, select one of the following types of data identifier: • node: If you know the fully qualified OID to collect data, then select node. OIDs of this type contains an instance number such as "1". Polled data with the instance "1" is selected for display. For example, if you want to collect data for ifInOctets with instance "1", then select node, and enter the data identifier as .1.3.6.1.2.1.2.2.1.10.1 • interface: The interface type is available only for IF table entries of the RFC 1213 MIB and is used when the object has many instances. For example, if you want to collect data for all instances of an object, select interface, and enter the data identifier as .1.3.6.1.2.1.2.2.1.10. For every instance of the object, polled data is created. • multiple: The multiple type is used to collect data for all instances. For example, if you do not know how many instances exist for an OID, select multiple. Polled data is create for the specified OID, but data collection occurs for all of the instances

Property	Input Details
	The type of identifier must be the same as that of the identifier on which the threshold is being applied. Otherwise, when a division of two values takes place, an invalid value is generated.

7 Click the **Add** button to create a threshold.

If you apply Long type threshold as well as Percentage type threshold to an OID, and if the collected value exceeds both threshold values, then the threshold event is generated for the threshold with the higher severity. If the severity is the same, then two threshold events are generated.

8 You have completed this procedure.

—End—

Modifying a threshold

Application

Use this procedure to modify the threshold in the IEMS.

The existing threshold configuration can be modified when there is the requirement to change certain fields.

ATTENTION

Threshold alarming on tabular data in IEMS is not supported. Do not set thresholds on table-based MIBs on IEMS. In this case, the resulting alarms are not correctly configured.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Configured Collection** node under the Performance node in the IEMS tree.
3	Select the **Edit -->Modify Threshold** menu command to invoke the Threshold Properties window.
4	Modify the required fields in the Threshold Properties window. For more details, refer to step 5 of "Adding a threshold" (page 41).
5	Click the **Modify** button to update the threshold with the provided details.
6	You have completed this procedure.

—End—

Removing a threshold

Application

Use this procedure to remove the existing threshold.

An existing threshold configuration can be removed when it is not required.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Configured Collection** node under the Performance node in the IEMS tree.
3	Select the **Edit -->Remove Threshold** menu command to invoke the Threshold Properties window.
4	Select the threshold to be removed from the left-side pane.
5	Click the **Delete** button to remove the threshold.
6	You have completed this procedure.

—End—

Configuring a threshold for the collected data

Application

Use this procedure to configure the threshold for the collected data.

In IEMS, thresholds can be configured for the collected data of the devices.

ATTENTION

Threshold alarming on tabular data in IEMS is not supported. Do not set thresholds on table-based MIBs on IEMS. In this case, the resulting alarms are not correctly configured.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Configured Collection** node under the Performance node in the IEMS tree to invoke the Configured Collection window.
3	Select the required host from the left-side pane of the Configured Collection window to display the collected data in right-side pane of the Configured Collection window.
4	Double-click the required statistic from the right-side pane of the Configured Collection window to invoke the IEMS Threshold window.
5	Select the Threshold List check box in the IEMS Threshold window, and type the list of thresholds to be added for the data collection. You can add multiple thresholds separated with commas.
6	Click **OK** to configure threshold to the collected data.
7	You have completed this procedure.

—End—

Creating a custom view for a configured collection

By creating custom views, you can easily find or filter out the required output. A custom view is a set of objects or data, which are subsets of a complete set of data or objects, satisfying a given criteria. For example, a custom view for sorting and viewing polled data of a specific device type such as ERS 8600 can be created using the custom view option of the IEMS.

Using features in a custom view

The various features in a custom view are listed below:

- You can view polled data of specific criteria.
- The updates of data are dynamic.
- The same custom view name can be used at different levels.
- The column "properties to view" is customizable.
- You can change the column order, sort the data, and save the states of a custom view.
- A custom view can be modified and renamed.

The following are the steps to navigate to the Configured Data Collection node provided under the IEMS tree.

1. Launch the IEMS Client. For details, refer to "Launching the IEMS Java Web Start Client" in *IEMS Overview*, NN10329-111.
2. Select the **Configured Collection** node in the IEMS tree and proceed with the menu bar options provided in the following table to use the features listed under the "Using Features in custom view".

Custom view features for a configured collection

Tool button in Toolbar	Menu Bar Option	Shortcut	Description
	Custom Views--> Add Custom View	Ctrl+V	To add a new custom view with specific criteria.
	Custom Views--> Remove Custom View	Ctrl+C	To remove a custom view. The parent custom view (Inventory) cannot be removed.

Tool button in Toolbar	Menu Bar Option	Shortcut	Description
	Custom Views--> Modify Custom View	Ctrl+M	To modify any custom view.
	Custom Views--> Save Custom View	Ctrl+S	To save the current state of the custom view, such as column order, sort order, and others.
	Custom Views--> Rename Custom View	F2	To rename any custom view

Adding or modifying a custom view

This option adds a new custom view with the given criteria. When this option of adding a new custom view is chosen, a custom view property sheet is displayed on the screen. After the form is completed with the necessary criteria and submitted, the new custom view is created and you can see the difference in the tree on the left.

Removing a custom view

This option removes the currently selected custom view. If a custom view has one or more custom views as child view, the complete set of parent and child is removed. The main parent custom view (default - Configured Data Collection) cannot be removed. Selecting the Remove custom view option asks for a confirmation.

Saving a custom view

This option saves the current state of the custom view such as the order of the column, the sort order, and the displayed data.

Renaming a custom view

This option helps you to rename the current custom view. While renaming the custom view name, if you wish to revert to the original name, then press the Esc key before completing it.

Setting search criteria for custom views

Application

Use this procedure to set the search criteria for custom views.

Custom views are created to categorize the collected data of the IEMS based on specific matching criteria. The match criteria can be set through the Custom View Object Properties form. The properties form contains details such as filter view name, parent name, class name, and IP address.

Action

Step	Action

At the IEMS workstation

1 Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.

2 Select the **Configured Collection** node from the Performance nodes in the IEMS tree.

3 Select **Custom Views-->Add Custom View** menu command to invoke the Object Properties form.

The following table provides details about the object properties.

Property	Description
Filter View Name	Specify the name for the particular custom view.
ParentName	In the drop-down list, select the object in the Navigation tree under which this custom view is to be added. The default value is Configured Collection node.
name	Specify the name of the data collection job. **Example** If the data collection job name is specified as 'spfs poll', then the devices configured for the job are displayed in the custom view. You can specify multiple data collection job names by using a comma separator.
id	Specify the poll ID which represents a polled data.

Property	Description
dnsName	Specify the host name to retrieve its statistics. For example, if you specify succession-server, then its statistics are retrieved.
oid	Specify the OID to retrieve the statistics based on that OID. For example, 2.2.1.5. More than one OID can be specified for the custom view by using a comma separator.
community	Specify the community string that defines the access type to device, such as read only, write only, or read write.
period	Specify the polling period to retrieve the data at regular intervals.
active	Specify any of the following values to view only those statistics for which data collection is taking place at one time. • All - Retrieves all the statistics irrespective of their active state (enabled or disabled). • true - Retrieves the statistics for which data collection is enabled. • false - Retrieves the statistics for which data collection is disabled.
IsMultiplePolledData	Specify the type used to poll columnar values of the tables.In the drop-down list, select one of the following options: • All - Retrieves all the statistics irrespective of their type (node, interface, or multiple). • true - Retrieves only those statistics which are of type multiple PolledData. • false - Retrieves statistics, which are of type other than multiple PolledData.
saveAbsolutes	Specify the following values only for counter type OIDs: • true - Retrieves the counter type statistics for which the absolute value of the collected data is stored in the database. • false - Retrieves the counter type statistics for which the difference value between latest and previous collected data is stored in database.
snmpVersion	Specify the SNMP Agent's version such as V1, V2, V3 from which the data is to be collected.

Property	Description
agent	Specify the agent name from which data has to be collected.
port	Specify the port number to which the agent is listening for data collection requests. Data is retrieved for statistics associated with that port.
threshold	In the drop-down list, select one of the following options: • All - Retrieves all statistics (those with or without thresholds). • true - Retrieves only statistics which have associated thresholds. • false - Retrieves only statistics which do not have associated thresholds.
lastCounterValue	Specify the last counter value of the OID. This value is used for calculating the differential value with respect to the current counter value and set for the "saveAbsolutes" attribute.
previousSeverity	Specify the last severity level (in number) that the OID statistical value had attained on applying the threshold. Custom views based on the previous severity state of the polled data are created and displayed. The values can be any of following types: • Critical -1 • Major - 2 • Minor - 3 • Warning - 4 • Clear - 5 • Info - 6 • Unknown - 0
numericType	Specify the type of the collected data.The type is specific for every OID in the corresponding MIB. Collected data is retrieved based on the following types • long type - 1 • string type - 2
policyName	Specify the name of the job, which collects the polled data.

Property	Description
groupName	Specify the groupname of the statistics to be retrieved.
save	In the drop-down list, select one of the following options: • All - Retrieves all the statistics irrespective of their save state. • true - Retrieves only the statistics whose collected data is saved in the database. • false - Retrieves the statistics whose collected data is not saved in the database.
logDirectly	In the drop-down list, select one of the following options: • All - Retrieves all the statistics irrespective of the value in this property. • true - Retrieves the statistics for which the collected data is stored in flat files. • false - Retrieves the statistics for which the collected data is not stored in flat files.
logFile	Specify a log filename (string), based on the statistics is to be displayed.
parentObj	Specify the name of the Managed Object based on statistics to be retrieved. **Example** If data for the managed object STORM is to be collected, then specify the device name.
thresholdList	Specify the name of the thresholds, in comma-separated format, to retrieve the statistics that have all of these thresholds associated with them.
currentSaveCount	Specify the current save count value for the PolledData.
failureCount	Specify the numeric value to indicate the statistics of the failure count.
protocol	Specify the name of a protocol to retrieve the collected data. For example, SNMP, TL1, and so on.
pollerName	This property is not applicable for the IEMS user.

Property	Description
statsDataTableName	If you have customized tables (defined your own tables) for storing collected data, specify the table name in this field. All statistics associated with this table name are displayed.
savePollCount	Specify save poll count (numeric value). All statistics with the specified save poll count are displayed.
failureThreshold	Specify save failure threshold value (numeric value). All statistics with the specified failure threshold value are displayed.
suffix	Specify the suffix appended to the Data identifier for "interface" types. For example, if the ID is '2.2.1.10', the corresponding PolledData has the Data identifier as "2.2.1.10.x" where x is the suffix part. For example, 1 (or) 16777219 for 2.2.1.10.
saveOnThreshold	Specify values such as "true" or "false". The value 'true" indicates that the collected data is saved only when it exceeds the threshold. The default value is "false".
webNMS	This property is not applicable for the IEMS user.
ownerName	Specify a string to denote the owner of the statistic.
timeAvg	Specify values such as "true" or "false". The default value is "false". This is calculated for Counter type OIDs where the collected data is incremental and reaches its final value at a given point of time and then resets to zero. As this reset happens very often, it is preferred that a delta value is derived from two consecutive polls.

4 If required, click the **Tree Node Properties** tab in the Object Properties form to enter the tree node properties.

If all the parameters (except filter view name) are left blank, then the default value of 'all' is assigned.

The following table provides details about the tree node properties.

Property	Description
Frame Title	Specify the name to be displayed on the title bar of the custom view's internal frame.
Menu File Name	The panel-specific menu file name for Configured Collection panel. Do not modify this field.
Icon File	Indicate which icon you want to use for the custom view. This icon is visible in the tree as well as in the title bar of the internal frame. The image must be in PNG format. The icon file must be present under the */opt/nortel/iems/current* directory or any subdirectory under the */opt/nortel/iems/current* directory. The */opt/nortel/iems/current* directory is the directory in which the IEMS Server is installed.
Tree Popup Menu	The file name of the menu used to display a contextual menu for the Inventory node in the IEMS tree. Do not modify this field.
Node Index	Specify the position at which the custom view is to be created with respect to its parent node. It is the position index value for the custom view. The custom view is created at the specified position in the tree.

5 Click the **Select Props To View** button displayed in the third screen of the Properties tab to choose the properties that you want to be displayed for the created custom view.

6 Click the **Apply Filter** button to apply the custom view.

7 You have completed this procedure.

—End—

Viewing a data collection

IEMS collects data from an EMS or NE based on the statistics that are defined. In IEMS, performance data collected from devices is monitored and displayed in the Configured Collection node located under the Performance node in the client tree. The screen corresponding to this Configured Collection node lists the agents of the various devices from which data collection (of their OIDs) is performed.

Searching collected data

Application

Use this procedure to search polled data and store them in the database. The search is performed based on the specified criteria. The Search dialog provides an option to search for polled data based on one or more criteria.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to "Launching the IEMS Java Web Start Client" in *IEMS Overview*, NN10329-111.
2	Navigate to the **Configured Collection** panel under **Performance** node in IEMS tree to invoke the Configured Collection window.
3	Select the **Edit-->Search** menu command to invoke the Search dialog. The search option can be opened from the toolbar using the **Find** button.
4	Click either the **Match any of the following** or **Match all of the following** radio button to select whether you need any of the criteria or all the criteria to be matched, respectively.
5	Click the **More** or **Fewer** buttons to specify the criteria. You can add any criterion on which the search can be performed. The first option in the screen popup is a list box. It lists the existing column headers in the Polled Data table of the Configured Collection panel. The second option has the following set of criteria to search with. • Normal set of criteria, which consists of — starts with — doesn’t start with — ends with — doesn’t end with — contains — doesn’t contain — equals — not equals

6 Click the **Search** button.

7 You have completed this procedure.

—End—

Viewing statistics of collected data

IEMS monitors the performance of the succession network periodically by collecting necessary data from each of the devices and provides reports for those devices. The performance is measured based on the number of bytes of data received or sent (over a period) by a particular device interface, the interface's current bandwidth in bits per second, and other factors.

After adding the objects, IEMS begins to collect the data (by default, the collection interval is 5 minutes) from each object in the network and adds it to the database. Hence, the data collection occurs every 300 seconds (default interval). The collected data from objects in the network is referred to as performance data.

There are two types of performance data that can be viewed in the Client.

- Current performance data
- Historical performance data

For the procedure to view the graphs for the statistics, refer to the following:

- "Viewing collected statistics" (page 62)
- "Viewing current statistics" (page 65)

Viewing collected statistics

Application

Use this procedure to view the collected statistics.

IEMS collects data automatically (based on statistics configured) and stores them in the database. Data collected every day is stored separately, that is, every day's data is stored in separate database tables and the current date is appended to the table name.

Historical data that is collected and stored in the database can be viewed using graphs and reports. This facilitates analyzing the performance of the device over a period of time.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to "Launching the IEMS Java Web Start Client" in *IEMS Overview*, NN10329-111.
2	Navigate to the **Configured Collection** panel under Performance node in IEMS tree to invoke the Configured Collection window.
3	Select the required host in the Configured Collection window. *The statistics are displayed in the right-side pane.*
4	Select the statistics from the right-side pane for which you need to view the collected statistics.
5	Select the **View-->Plot-->Collected Statistics** menu command to invoke the CollectedGraphViewer window. *The performance data is displayed in the CollectedGraphViewer window.* You can view the following types: • Line chart graph • Bar chart graph • Tabular chart • Area chart • Scatter chart • XY step chart

6 Depending on what you want to do, select one or more of the following options.

- Last 24 hrs - To plot the graph for the data collected during the last 24 hours
- Today - To plot the graph for the data
- Last One Week - To plot the graph for the data collected for the previous one week.
- Custom - To plot the graph for the data collected during specified duration. Set the From and To range in Month: Date: Year: Hour: Minute:Seconds: AM/PM.

7 Click the **Plot Chart** button for plotting the line or the bar graph. The graph is plotted by fetching the collected data stored in the database. Once the graph is plotted, dynamic updates (plotting) cannot be made in the graph.

Performance metrics using the nnPerfMetricValue table are represented in the nnPerfMetricValue graphic in the IEMS GUI by the numbers 1 to 9. The metrics are described in the following table.

Performance metric identifier in IEMS	Description
9	Transmitted Bytes per Second
8	Received Bytes per Second
7	Logged in Users
6	Half Call Attempts
5	Active Connections
4	Percentage CPU Used
3	Percentage Memory Used
2	Number of Logs
1	Active Sessions

8 You can perform the following operations for the line and the bar graph:

- Save the graph in a file by clicking the **Save** button.

  By default, if file name without extension is entered or file name with extension .jpg is entered, the graph is saved in JPEG format.

  Example

  If file name "mcs_bar_chart" is given as input, IEMS saves the file as "mcs_bar_chart.jpg" (which is in JPEG format).

If the file name is given with the extension .png, the graph is saved in PNG format.

- Clear the existing data and plot a fresh graph by clicking the **Clear Graph** button.

9 Close the CollectedGraphViewer window by clicking the **Exit** button.

10 You have completed this procedure.

—End—

Viewing current statistics

Application

Use this procedure to view the current statistics in the Configured Collection window.

Current performance data is collected from the device and displayed in graphs and reports. On request, IEMS queries the EMS/NE and collects data instantly. The current data is not stored in the database.

The Current statistics graph can only be viewed for SNMP-based devices and not for CSV devices.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Navigate to the **Configured Collection** window under the **Performance** node in the IEMS tree to open the Configured Collection window.
3	Select the required host in the Configured Collection window. *The statistics are displayed in the right-side pane.*
4	Select the **View-->Plot-->Current Statistics** menu command to invoke the CurrentGraphViewer window. *The performance data is displayed in the CurrentGraphViewer window. You can view the following types:* • Line chart graph • Bar chart graph • Tabular chart • Area chart • Scatter chart • XY step chart
5	You can perform the following operations with the current statistics graph:

- Save the graph to a file by clicking the **Save** button.

  By default, if file name without extension is entered or file name with extension .jpg is entered, the graph is saved in JPEG format.

  Example

  If file name "mcs_bar_chart" is given as input, IEMS saves as "mcs_bar_chart.jpg" which is in JPEG format.

  If the file name is given with the extension .png, the graph is saved in PNG format.

- Clear the existing data and plot a fresh graph by clicking the **Clear Graph** button.
- By default, the performance data from the device is plotted in the graph for every 15 seconds. To change this interval, click the **Stop Poller** button and enter the new interval (in seconds) in the spin box. Now click the **Start Poller** button. The performance data is now plotted based on the newly configured time interval.

6 Close the CollectedGraphViewer window by clicking the **Exit** button.

7 You have completed this procedure.

—End—

Using other jobs

An IEMS user with administrator privilege can execute a task or set of tasks at a specified time based on a set of specified conditions using jobs in IEMS. Jobs are tasks that are executed by IEMS at a system level, at a specified time. Jobs are used to control a variety of network activities, such as automated backups, routing and prioritizing the network traffic, bandwidth allocation, cleaning up database tables, deleting failed nodes, and disk space cleanup. Jobs are displayed in the Jobs panel under the Administrative Tools node in the IEMS tree.

Adding and modifying jobs

This section deals with Adding and Modifying Jobs.

Adding jobs

Application

Use this procedure to add jobs.

Jobs can be added or modified using the corresponding menu commands displayed for the Jobs panel (under the Administration Tools node) of the IEMS. An added job is displayed in the Jobs panel and its details are stored in the database. Once a job is added, it remains in the *enabled* state until it is changed to any other state such as execute, suspend, or disable.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Java Web Start Client. For details, refer to Launching IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Select the **Jobs** node under the Administrative Tools node in the IEMS tree
3	Select the **Job-->Add Job** menu command to add a job.
4	Specify a name for the added job in the Instance Name textfield.
5	Click **Add** button to open the IEMS Performance Metrics Collection Job Details dialog. To specify details for data collection, transfer and report jobs, refer to the following sections: 1. Collection job: "Working with data collection jobs" (page 6) 2. Transfer job: "Adding a transfer job" (page 35) 3. Report job: "Adding a report job" (page 28) For details of alarm clearing, table cleanUp, and DB cleanup jobs, refer to the following sections: 1. "Updating the alarms clearing job" (page 75) 2. "Updating the table cleanup job" (page 77) 3. "Using the DB cleanup job" (page 79)

6 You have completed this procedure.

—End—

Modifying jobs

Application

Use this procedure to modify an existing job.

Jobs can be modified using the corresponding menu commands displayed for the Jobs panel (under the Administration Tools node) of the IEMS.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Java Web Start Client. For details, refer to Launching IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Select the **Jobs** node under the Administrative Tools node in the IEMS tree.
3	Select the job to be modified from the Jobs panel. *The screen displays the Jobs panel, listing all the current Jobs.*
4	Select the **Edit-->Modify Job** menu command to modify the existing job. *The modified details of the job are displayed in the Object Properties dialog. The modified details are also stored in the database. Refer to the sections mentioned for **Adding Jobs**, to view the respective job details displayed in the GUI*.
5	Click **OK** button to apply the modifications of the job.
6	You have completed this procedure.

—End—

Other job operations

In general, the word 'Job' refers to a plan of action. In IEMS, Job refers to executing a task or set of tasks at a specified time based on a set of specified conditions. Jobs are also tasks that are executed by IEMS at a system level, and at a specified time. In IEMS, Jobs are used to control a variety of network activities such as automated backups, routing, prioritizing the network traffic, bandwidth allocation, cleaning up database tables, and deleting failed nodes.

This job framework enables administration of the IEMS Server and the network elements managed by it. The primary goal of the job engine is to simplify the administration of complex functions. In IEMS, Jobs are used to customize the behavior of the IEMS and to provide a framework for adding jobs for different network elements.

IEMS jobs can be broadly classified into two categories:

- **Periodic Jobs:** Jobs are triggered periodically by the server after specified time interval. By default, the periodic Jobs are configured to be executed at an interval of 10 seconds.
- **Non-periodic Jobs:** Jobs are executed at a specified time. There is no fixed time interval and you must specify the time at which the Job is to be executed. No default value is assigned for non-periodic Jobs.

Running the rotate.sh script

A crontab entry must be created to set a timer to run a rotation script. The reason for the file rotation script is so the device does not consume the file system on the IEMS.

The use of the file rotation pertains to the configuring of a PM collection for a MAS device. This is because the MAS device pushes files to the IEMS. If the files are not rotated, these files can overload a file system completely and cause disruptions of the IEMS.

Application

The customer has to create a directory named **"1"** under the directory in the command line. Using the first example below, create a directory: /data/oms_shortinterval/1

A file rotation script is already in place in IEMS and is being used as a utility. The command line for the rotate.sh script is:

```
/opt/nortel/iems/current/bin//rotate.sh <dir_to_rotate>
<number_of_rotations>
```

where

<dir_to_rotate> means the directory in which roatation occurs and **<number_of_rotations>** means the number of rotations that are maintained.

This file rotation script is implemented by creating a crontab entry, using the crontab**-e** command.

Examples of crontab entries:

- 59 * * * * su poller -c "/opt/nortel/iems/current/bin//rotate.sh /data/oms_shortinterval 24"
- 59 23 * * * su poller -c "/opt/nortel/iems/current/bin//rotate.sh /data/oms_longinterval 7"

It is recommended that customers set the crontab entries to run at the end of a collection interval, so that there is time allowed for the file to be processed. It is also essential that the MAS device and the IEMS are time synch'd to avoid losing OM data.

Searching jobs

Application

Use this procedure to do a job search.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Java Web Start Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Select the **Job-->Search** menu command from the menu bar. *The Policy Search dialog is displayed.*
3	Specify the criteria and click **Execute Query**. *The jobs matching your criteria are displayed in the Jobs panel.*
4	To view all the jobs again, click **Select all Jobs** in the Search dialog.
5	You have completed this procedure.

—End—

Enabling jobs

Application

Use this procedure to enable a job.

By default, a job is enabled once its added. Any operation can be performed on a job once it is enabled.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Java Web Start Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Double click the job displayed in the Jobs panel or select the **Edit-->Modify Job** menu command in the menu bar.
3	Choose the status as **Enable** in the displayed form. You can disable the job status by choosing the corresponding option in the displayed form. Once a job is disabled, it must be manually *enabled* as it remains in the *disabled* state even after restarting the server.
4	Click the **OK** button to apply the modifications of the job.
5	You have completed this procedure.

—End—

Executing jobs

Application

Use this procedure to execute a job.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Java Web Start Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.

2 Select the **Jobs** node under the Administrative Tools node in the IEMS tree.

3 Select the job to be executed from the Jobs panel.

The screen displays the Jobs panel, listing all the current Jobs.

4 Select the **Edit-->Execute Job** menu command to execute the job.

5 You have completed this procedure.

—End—

Suspending jobs

Application

Use this procedure to suspend a job.

The Suspend Job command can be used to stop the execution of a job temporarily at runtime.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Select the **Jobs** node under the Administrative Tools node in the IEMS tree.
3	Select the job to be suspended in the Jobs panel.
4	Choose the **Edit-->Suspend Job** command to suspend the job. *An Info event is generated on suspending the job, which is displayed in the Network Events browser.* To suspend a job permanently, select Disable in the status field of the dialog, which opens when you double click the job in the Jobs panel.
5	Click the **Yes** button to suspend the job.
6	You have completed this procedure.

—End—

Removing jobs

Application

Use this procedure to delete a job.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.
2	Select the **Jobs** node under the Administrative Tools node in the IEMS tree.
3	Select the job to be deleted in the Jobs panel.
4	Choose the **Edit-->Delete Job** command to delete the job.
5	You have completed this procedure.
	—End—

Understanding colors in jobs

Every job displayed in the Jobs panel is highlighted with a color, which indicates the status of the job.

The following table lists the default color schemes for the jobs and their corresponding significance:

Significance of Colors for Jobs

Color	Significance
Green	Enabled job
Cyan	Executed job
Grey	Disabled job
Orange	Suspended job

Updating the alarms clearing job

Application

Use this procedure to use the alarms clearing job in the Jobs panel.

The alarms clearing job allows you to clear the alarms manually from the devices that have not updated their status for a specified period. This ensures that the alarms table does not continue to increase in size with every change of device state each day. This job specifies how many days the alarms can remain in a non-cleared state. If this job is not used, you must clear the alarms that are in a non-cleared state for a specified period. By default, the job is enabled and is displayed in the Jobs panel of IEMS client.

When this policy is executed, alarms of the objects specified in the EMS/NE Types field are fetched and cleared. A event is generated by IEMS with log number 608.

Action

Step	Action

At the IEMS workstation

1 Launch the IEMS Java Web Start Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.

2 Select the **Jobs** node under the Administrative Tools node in the IEMS tree.

The Jobs panel is displayed.

3 Select the Job named **AlarmClearingPolicy** and double-click it.

The Object Details window opens.

4 Enter the required details in the Object Details window. The following table gives the description of each field in the Object Details window.

Property	Description
helpURL	This field must not be changed. It simply points to the corresponding help file.
EMS/NE Types	This field specifies the type of EMS/NE to which the job applies. Several EMS/NE types can be specified separated with commas. The default value of this field is "NE-PP8600".

Property	Description
period	This field indicates the period in seconds. This field must not be changed.
status	The status can either be enabled or disabled. If the administrator chooses to disable a certain job, the operator is unable to schedule, start, or stop the execution of a job.
name	This field indicates the name of the job.
groupNam e	This is a grouping field that helps you to organize jobs. This field is read-only. You can use the information in this field in a matching jobs query.
Age in Days	This field specifies the age of alarms (in days) to be cleared when the job is executed. The default value is 7 days.

5 Click the **OK** button to update the job.

6 Select the **Edit-->Execute Job** menu command to execute the job.

You can only execute a job if it is enabled. To verify the status of the job, refer to "Other job operations" (page 70). If a job is running and its status is changed to disabled, the job execution is stopped.

7 You have completed this procedure

—End—

Updating the table cleanup job

Application

Use this procedure to manually clean up performance data from the database.

The table cleanup job enables the IEMS administrator to manually clean up performance data from the database after a specified period. This ensures that the data table does not continue to increase in size with the addition of data collected each day. By default, this job is enabled and is displayed in the Jobs panel of the IEMS client.

Action

Step	Action

At the IEMS workstation

1 Launch the IEMS Java Web Start Client. For details, refer to "Launching the IEMS Java Web Start Client" in *IEMS Overview*, NN10329-111.

2 Select the **Jobs** node under the Administrative Tools node in the IEMS tree.

The list of jobs is displayed in the Jobs panel.

3 Select the Job named **TableCleanupPolicy1** from the table and double-click it.

The Object Details window opens.

4 Enter the required details in the Object Details window. The following table gives the description of each field in the Object Details window.

Property	Description
Delete data after (days)	The number of days after which the data must be removed.
Status	The status can either be enabled or disabled. If the administrator chooses to disable a certain job, the operator is unable to schedule, start, or stop the execution of a job.
Name	This field indicates the name of the job.
helpURL	This field must not be changed. It points to the corresponding help file.

Property	Description
RawFile Retention Period	This field indicates the time period (in days) for which the raw files are stored under /opt/nortel/iems/current/perfdata. The raw files are compressed and stored under /opt/nortel/iems/current/perfdata. If the value of this field is ’0’, the raw files are not stored after processing them for Performance jobs. The default value for this field is ’0’.
period	This field indicates the time period (in seconds) after which the job is executed automatically.
Cleanup Hour	This specifies when to clean up the statistics (hour of the day). The cleanup can happen at any time during the hour; the time within the hour cannot be controlled. The default value is ’0’, that is, done between 12 midnight and 1 a.m.
groupName	This is a grouping field that helps you to organize the jobs. This field is read-only. You can use the information in this field in a matching jobs query.

5 Click the **OK** button to update the job.

6 Select the **Edit-->Execute Job** menu command to execute the job.

You can only execute a job if it is enabled. To verify the status or the job, refer to "Other job operations" (page 70). If a job is running and its status is changed to disabled, the job execution is stopped.

7 You have completed this procedure.

—End—

Using the DB cleanup job

Application

Use this procedure to use the DB cleanup job.

The DB cleanup job monitors the tablespace size of IEMS periodically and generates an alarm when the tablespace size exceeds a given threshold value. The threshold value (in percentage) of the tablespace size and the time period (in seconds) for monitoring it, can be set manually through the GUI. By default, the DB cleanup job is enabled and can be viewed in the Jobs panel under the **Administrative Tools** node of IEMS client. The job must be executed to initiate the monitoring of the tablespace size.

Action

Step	Action
	At the IEMS workstation
1	Launch the IEMS Java Web Start Client. For details, refer to "Launching the IEMS Java Web Start Client" in *IEMS Overview*, NN10329-111
2	Select the **Jobs** node under the Administrative Tools node in the IEMS tree. The Jobs Panel is in the right-hand side of the window, with the list of jobs tabulated.
3	Select the Job named **DBCleanupJob** from the table and double-click it. *This opens the DBCleanupJob details window.*
4	Modify the details required and click the **OK** button to update the job. The following table gives a description of each field in the DBCleanupJob details window.

Property	Description
Name	This field indicates the name of the job.

Property	Description
Status	This field indicates the status of the job. By default, the status is “Enabled”. The “Disabled” option can be chosen when the job is to be disabled. You can only execute a job if the job status is enabled. To check whether the job is enabled, refer to "Other job operations". If a job is running and its status is changed to "Disabled", the job execution is stopped.
Period (sec)	This field indicates the time period interval (in seconds) for executing the job, automatically. The default time period is 3600 seconds.
Max No. of Events	This field indicates the upper limit for the event count before the DB cleanup job is triggered.
Delete No. of Events (%)	This field indicates the percentage of events that have to be deleted by the DB cleanup job when the total number of events exceeds value for the configured maximum number of events.
Threshold (%)	This field indicates the threshold value (in percentage) of the database tablespace size. By default, the threshold value is 80%. If the tablespace size exceeds the threshold value, then an alarm is generated. The tablespace can be further extended using the Configure TableSpace tool.

5 You have completed this procedure.

—End—

Configuring the tablespace size

Application

Use this procedure to configure the database tablespace size. Use the **Configure Tablespace** tool accessed from the iems_config.sh tool for configuring the database tablespace size. This tool can be used for querying the tablespace size, extending the tablespace size and for reducing the tablespace size.

Prerequisites

To perform this procedure, you must have root user administration privileges.

Action

Step	Action
	At the IEMS server

1	Run the iems_config.sh file located in the /opt/nortel/iems/current/bin directory.
	The following list of options is displayed.
	`1 Configure OfficeName`
	`2 Configure TableSpace`
	`3 Configure IEMS NB SNMP Agent`
	`X Exit`

2	Enter “2” to select the Configure TableSpace option.
	The following menu appears:
	`1 IEMS_TS`
	`2 IEMS_EVENT_TS`
	`3 IEMS_PERF_TS`
	`X EXIT`
	`Choose a tablespace to proceed:`

3	Enter the number next to the tablespace you want to view or modify.
	The following menu is displayed.
	`Press q to Query <table name>  tablespace size`
	`e to Extend  <table name>  tablespace size`
	`r to Reduce  <table name>  tablespace size`
	`x to Exit`
	`Choose an Option:`

4 Select your next step.

If you want to	go to
query the IEMS table space size	the next step
extend the IEMS table space size	step 8
reduce the IEMS tablespace size	step 12

5 Choose **"q"** to query the IEMS tablespace size.

The IEMS tablespace size is displayed.

```
The <table name> tablespace size - 2000.0 MB.
Do you want to continue?
```

6 Enter **y** to continue.

7 You have completed this procedure.

8 Select **e** to extend the IEMS tablespace size.

The IEMS tablespace size is displayed. The following prompt appears.

```
Warning:  You are attempting to modify the tablespace
size.
Do you want to continue?
```

9 Enter **y** to continue. Enter the value by which the tablespace is to be extended.

An example value is given here.

```
Enter the size (in MB)to be increased - 10
The tablespace size is extended to 2010 MB.
Do you want to continue?
```

10 Enter **y** to continue.

11 You have completed this procedure.

12 Select **r** to reduce the IEMS tablespace size.

The IEMS tablespace size is displayed and the following prompt appears.

```
Warning:  You are attempting to modify the tablespace
size.
Do you want to continue?
```

13 Enter **y** to continue. Enter the value by which the tablespace is to be reduced.

An example value is given here.

```
Current size is - 2005
Enter the size(in MB)to be decreased - 19
The tablespace is reduced to 1986 MB.
Do you want to continue?
```

14 Enter **y** to continue.

15 You have completed this procedure.

—End—

Using the disk space cleanup job

Application

Use this procedure to use the disk space cleanup job .

The disk space cleanup job periodically monitors the space occupied by ’/data’ partition in SPFS. This automatically cleans up the files in the ’/data/oms/’ folder whenever the size exceeds the given threshold value. The report files are stored under the ’/data/oms/1...7’ folders on the day rotation basis (the current day folder is ’/data/oms/1’). The disk space cleanup job has the following characteristics:

- If the disk space occupied by the /data partition exceeds the given threshold value, it removes a oldest report file folder (example: ’/data/oms/7’) from the ’/data/oms’ folder and again checks for the disk space occupied. This process is repeated until the disk space occupied is less than the given threshold value or the only remaining directory is ’/data/oms/1’.

  Example
  If the ’/data/oms’ folder has the report file folders with folder name 7, 6, 5, 4, 3, 2, and 1. If the ’/data’ partition occupies the disk space which exceeds the threshold value, the disk space cleanup job first removes the folder named ’7’ which is the oldest folder.

- If the report file folder named ’1’ is the only folder existing in ’/data/oms’ folder and disk space occupied by ’/data’ partition exceeds the threshold value, it is not removed since it has the report files of the current day.

The threshold value (in percentage) of the disk space and the time period (in seconds) for monitoring it, can be configured through the GUI. By default, the disk space cleanup job is enabled and under execution and can be viewed in the Jobs panel under the Administrative Tools node of the IEMS client.

When the disk space cleanup job completes the execution, it generates an "Info" event for every execution. For more details about events see *IEMS Fault Management*, NN10334-911. The description field in the body text is described in the following table:

Job status	Description
The job lowers the ’/data’ partition below the configured threshold level.	The report dir’s deleted are -<directories removed>. /data Disk partition space now is below <threshold value>
Note: If this occurs, the user must manually remove the files in "/data/oms/1" until the ’/data’ partition space goes below the threshold value.	

Job status	Description
The job is unable to lower the '/data' partition below the configured threshold level even after deleting all sub-folders except '/data/oms/1'.	The report dir's deleted are -<directories removed>. Only /data/oms/1 is left. No further action taken. Partition still exceeds threshold!! See Note.
The '/data/oms' directory is not present.	The report dir's deleted are -. Directory /data/oms is not present. Not able to delete files. Partition exceeds threshold!!
Note: If this occurs, the user must manually remove the files in "/data/oms/1" until the '/data' partition space goes below the threshold value.	

Action

Step	Action

At the IEMS workstation

1 Launch the IEMS Java Web Start Client. For details, refer to Launching the IEMS Java Web Start Client in *IEMS Overview*, NN10329-111.

2 Select the **Jobs** node under the Administrative Tools node in the IEMS tree.

A list of jobs is displayed in the Jobs panel.

3 Select **DiskSpaceCleanupJob** from the table and double-click it.

The Object Details window opens.

4 Enter the required details in the Object Details window. The following table gives the description of each field in the Object Details window.

Property	Description
Threshold	This field indicates the threshold value (in percentage) of the recommended disk space size occupied by the /data partition. By default, the threshold value is 80%.
name	This field indicates the name of the job.
period	This field indicates the time period interval (in seconds) for executing the job automatically. The default time period is 3600 seconds.
status	This field indicates the status of the job. By default, the status is "Enabled".

5 Click the **OK** button to update the job.

6 Select the **Edit-->Execute Job** menu command to execute the job.

You can only execute a job if it is enabled. To verify the status of the job, refer to Setting Oracle replication mode to redundant.

If a job is running and its status is changed to disabled, the job execution is stopped.

7 You have completed this procedure.

—End—

Events generated from performance jobs

Events are generated to notify you of the status of an executing job. They are generated for jobs specific to the Performance Management module of IEMS (data collection job, report job and transfer job). The generated events are displayed in the Network Events panel and can be used to monitor jobs. The events generated for jobs can be distinguished from those generated for devices by the log name 'EMJS'.

For more details on the properties in the Event Details GUI, refer to "Viewing event details" in *IEMS Fault Management*, NN10334-911.

'Info' and 'Minor' are the two types of event generated for all performance jobs. The two types of minor events are raise and clear events.

A minor alarm is generated based on the corresponding minor event.

There are also common events such as 'enabled', 'disabled', 'resumed', and 'suspended', which indicate the status of an executing job.

For more details on events, see *Carrier Voice over IP Fault Management Logs Reference guide*, NN10275-909.

Events generated from a data collection job

These events are categorized into:

- SNMP data collection job events (info and minor events)
- CSV data collection job events (info and minor events)

SNMP data collection job events

Info events are generated when the following situations occur during the execution of a job:

- SNMP OID mismatch
- successful completion of the job
- incomplete or partial success of the job
- complete failure of the job

Minor events are generated whenever a "Request Timeout Exception" occurs. These events are cleared on establishing communication with the device during the execution of the SNMP data collection job.

CSV data collection job events

Info events are generated for both the MAS device and the MCS Manager when a CSV data collection job is executing. These events are generated for the following situations:

- The file format is wrong for MAS and MCS
- Successful completion of the job
- Incomplete or partial success of the job
- Complete failure of the job

Minor events are generated when the IEMS encounters problems with an FTP session to a managed device which is used to collect its associated OM data files.

Events generated from a report job

Info events are generated for the following situations on executing a report job:

- Successful completion of the job
- Partial completion of the job
- Failure in completion of the job
- State change of the job

Minor events are generated when the IEMS encounters a problem creating the CSV or XML output OM data file on the IEMS server.

Events generated from a transfer job

Info events are generated for the following situations on executing a transfer job:

- Execution of the job
- Successful completion of the job
- Failure in completion of the job

This minor log event is generated when the IEMS attempts to transfer the associated CSV or XML output file to a remote system but is unable to login to the remote system. This log is generated for the following two situations:

- When no file is available for transfer
- When a device is unable to establish an FTP connection with the destination host

Carrier VoIP

IEMS Performance Management

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