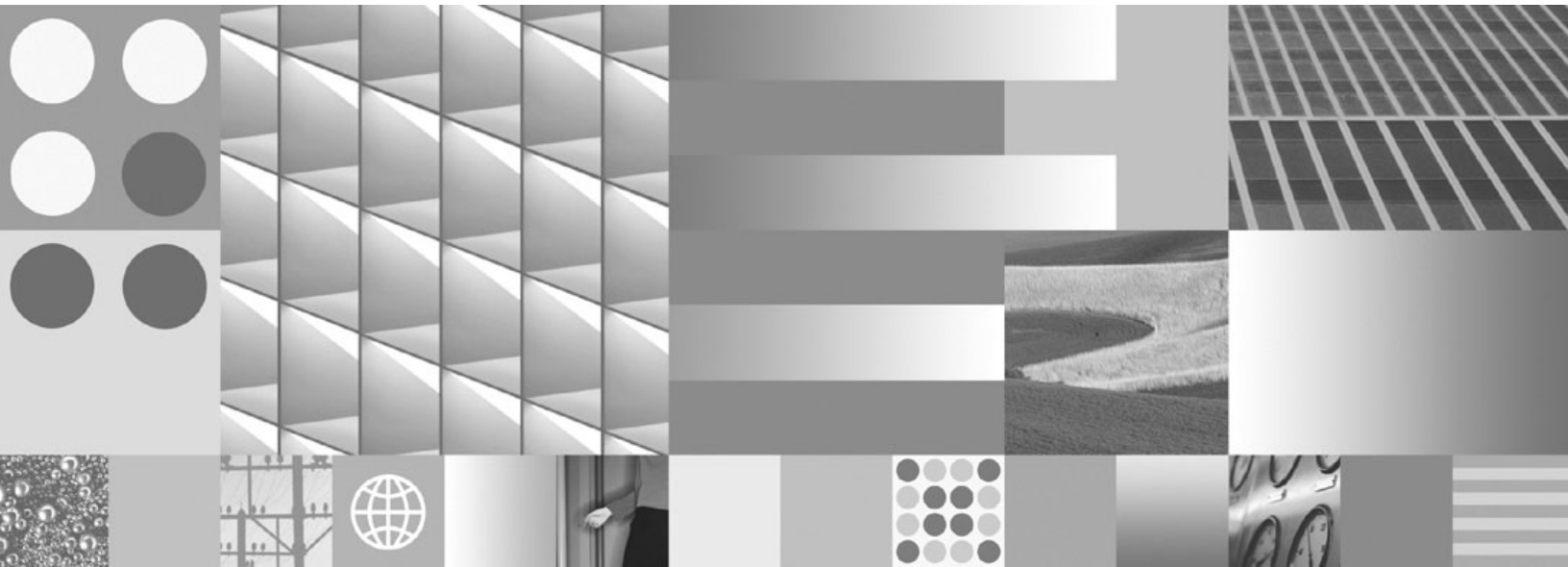




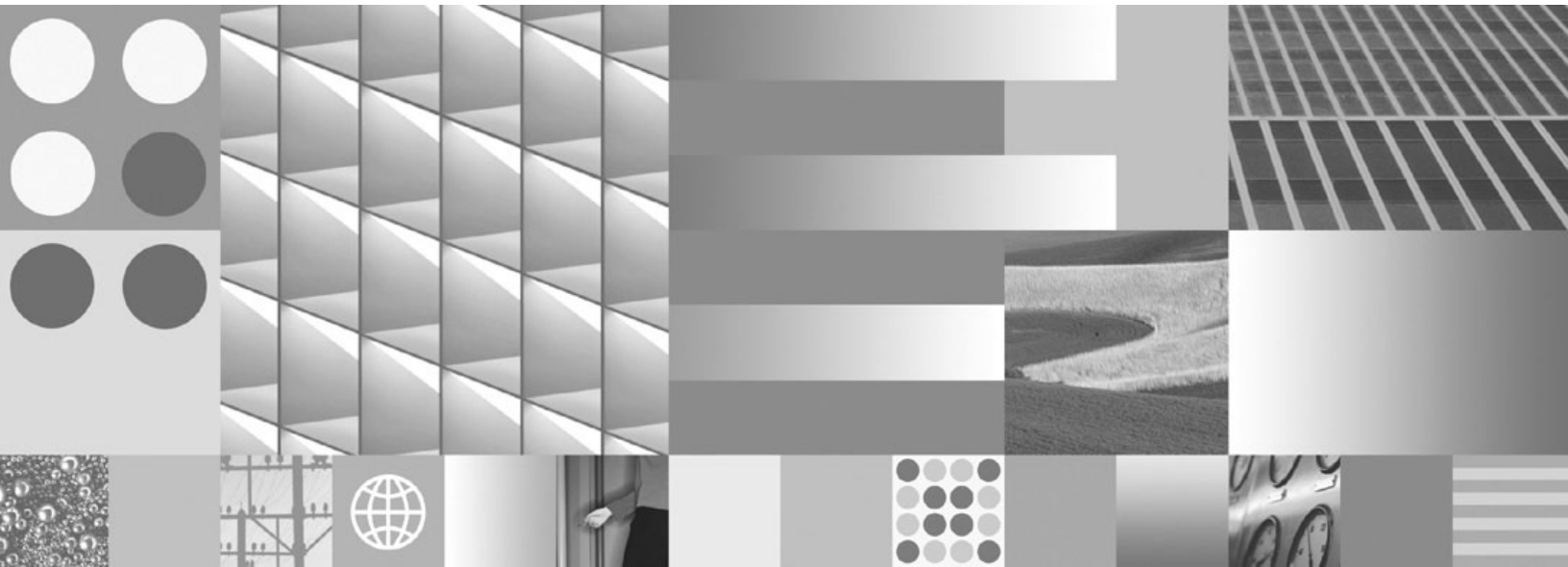
4.5.1



User's Guide



4.5.1



User's Guide

Note:

Before using this information and the product it supports, read the information in "Notices" on page 80.

This edition applies to version 4.5.1 of IBM System Dashboard for Enterprise Content Management (product number 5724-R95) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Document revision history

Version	Date	Comment
4.5.0	March 2009	Initial release.
4.5.0	May 2009	Changed references to the IBM FileNet Dashboard to IBM System Dashboard for Enterprise Content Management. Changed references to the IBM FileNet P8 Usage Reporter to IBM System Usage Reporter. Updated the file names of the Dashboard installers.
4.5.1	August 2009	Added a statement that previous versions of the Dashboard must be uninstalled before installing Dashboard 4.5.1. Added information on silent installation and the options.txt files. Added several Process Engine counters.

IBM System Dashboard for Enterprise Content Management

Overview

The IBM® System Dashboard for Enterprise Content Management is a performance monitoring tool that IBM distributes with many of its FileNet products and suites for both Windows® and UNIX® servers. The Dashboard displays real-time performance data that system administrators and operators can use to proactively identify and resolve potential performance problems before they occur. The performance data can also be archived for management reporting and trend analysis.

In addition, the IBM System Usage Reporter is also installed with the Dashboard. The Usage Reporter is an administrative tool that monitors the number of users who access FileNet products and provides both near real-time and historical usage information. You can find more information about this application in the *IBM System Usage Reporter Reference Guide (Usage_Reporter.pdf)*.

IBM also offers the IBM FileNet System Monitor. While the Dashboard is a performance monitoring tool that tracks information such as application-specific events, the System Monitor continually monitors the health of FileNet systems and alerts administrators to critical errors.

System Dashboard Features

The System Dashboard includes the following features:

- Real-time data from multiple components, such as Content Engine and Process Engine, can be viewed concurrently
- Capture and display of operating system statistics and environmental data:
 - Operating system name and version number
 - Number and architecture of CPUs
 - CPU load
 - Disk I/O
 - Network I/O
 - Memory utilization (amount of memory available)
- Capture and display of FileNet-specific data:
 - RPC counts and durations
 - Application-specific Events, such as "Document Creations" in the Content Engine
 - Application-specific Metrics, such as "Folder Cache Entries" in the Content Engine
- Capture and display of environmental data:
 - Configuration
 - Version and patch level
 - Java® applications will provide information about the Java Runtime version number and maximum memory
- User-defined charts of summary and detailed data
- Alerts tab that displays all urgent messages received from applications and when connection to applications is lost
- Ability to define and run reports and save them into comma-separated value (CSV) files
- Data can be archived/saved for historical analysis and management reporting

- Minimal overhead in production environments – listeners are built into the ECM components
- Listener agents that can gather data from other applications that can be displayed in the Dashboard

System Dashboard components

The **Listener** is a software component that receives a stream of events and other information from an individual FileNet application. It is the equivalent of an “agent” in the SNMP world. Listeners wait passively for Managers to connect to them and inquire about their performance counter values. In the absence of a Manager connection, the presence of the Listener component is nearly invisible to an outside observer. Listeners are implemented in the various FileNet components and products listed below. The Listener API is available in C++ and Java.

The **Dashboard** is a Java-based application that provides a graphical interface of your current FileNet systems. The Dashboard is compatible with the various FileNet suites and products listed in the next section.

Supported products

The following products support the Dashboard:

Product	Components Included
Business Process Manager (BPM)	<ul style="list-style-type: none"> • Listeners for the Application Engine, Content Engine, and Process Engine • Dashboard
Content Federation Services - Image Services (CFS-IS)	<ul style="list-style-type: none"> • Listener for CFS-IS • Dashboard
Content Manager (CM)	<ul style="list-style-type: none"> • Listeners for the Application Engine, Content Engine and Process Engine • Dashboard
Image Manager (IM)	<ul style="list-style-type: none"> • Listener for Image Services (IS) • Dashboard
Image Services Resource Adapter (ISRA)	<ul style="list-style-type: none"> • Listener for ISRA • Dashboard
Records Manager (RM)	<ul style="list-style-type: none"> • Listener for RM • Dashboard
IDM Web Services/Open Client	<ul style="list-style-type: none"> • Listener for Web Services and Open Client • Dashboard
Workplace	<ul style="list-style-type: none"> • Listener for Workplace • Dashboard
Workplace XT	<ul style="list-style-type: none"> • Listener for Workplace XT • Dashboard

Installing the Dashboard

You can install Dashboard 4.5.1 as a fresh installation on a new FileNet server or as an upgrade to a previous version of the Dashboard.

Important: Before you upgrade to Dashboard 4.5.1, you must uninstall the current version. See [Uninstalling the Dashboard](#) for more information.

Dashboard 4.5.1 uses the InstallShield MultiPlatform (ISMP) installer, which relies on the presence of a suitable Java Virtual Machine (JVM) on the target system to support the installation process. JVM version 1.4 or higher is required.

Supported JVMs

The set of JVMs supported by InstallShield varies by operating system. The installer searches only a set of standard locations to find a suitable JVM to use. See the table of [Supported JVMs](#) for each operating system.

If you have a supported JVM installed, but it is not found automatically, you can use a command-line flag to specify the location, which must contain only one of the listed JVM versions. The following example is for Solaris:

```
./SOL_ECMDashboard.bin -is:javahome directory_path
```

where *directory_path* is the root directory of the Java installation, not the bin sub-directory.

Graphical and Silent Installation

You can install the Dashboard in standard graphical mode or in silent mode. In graphical mode, the installation program prompts you for information. In silent mode, the installation program gets the information it needs from an options.txt file—nothing displays on your screen.

To install the Dashboard silently, that is, with no screen output, add the `-silent` and `-options` flags to the command:

```
./SOL_ECMDashboard.bin -silent -options file_path
```

where *file_path* is the full path of the installation options file, including the file name.

The Dashboard software contains two options.txt files: **Unix/options.txt** and **Windows/options.txt**. The options file contains the standard responses to the installation program's prompts.

1. Locate the appropriate file for your server in the Dashboard directory.
2. View the options and their default values, which are fully described in the file.
3. If you decide to modify any of the defaults for your Dashboard installation, copy the file to a temporary directory. (You can rename the file to something shorter, such as opt.txt.) Use your preferred text editor to make the changes and save the file.

Keep in mind that the command you enter depends on the operating system of your server. On Windows servers, the directory separator character is a back slash (\) as opposed to a forward slash (/) for UNIX servers.

Note: The System Usage Reporter is automatically installed with the Dashboard. See the *IBM System Usage Reporter Reference Guide (Usage_Reporter.pdf)* for more information.

UNIX installation procedure

You can be logged in as any user to perform the installation.

However, if you install the Dashboard on an AIX server as a user other than root, you will not be able to use the AIX system management tools, such as SMITTY, to remove the Dashboard or display information about it.

To install in a UNIX environment:

1. If an earlier release of Dashboard is already installed on your server, uninstall it by following the steps in the section, [Uninstalling the Dashboard](#).
2. Locate the installer that matches the operating system on your server.

Graphical installation

Start the installer by entering the appropriate command at the system prompt:

- AIX_ECMDashboard.bin
- HPUX11_ECMDashboard.bin
- Linux_ECMDashboard.bin
- SOL_ECMDashboard.bin

Silent installation

To install the Dashboard silently (with no screen output), add the `-silent` and `-options` flags to the command. The following example is for AIX:

```
./AIX_ECMDashboard.bin -silent -options /Dashboard/Unix/options.txt
```

If you copied and modified the options.txt file, the command might look like this:

```
./AIX_ECMDashboard.bin -silent -options /fnsw/local/tmp/opt.txt
```

Be sure to specify the full path to the options.txt file.

During a silent installation, the following prompts do not display.

3. At the Welcome page, click **Next**.
4. Accept the license agreement terms, and click **Next**.
5. Specify the location where you want to install the Dashboard, and click **Next**.
6. Choose the type of installation, either Typical or Custom, and click **Next**.
7. Review the summary information, and click **Next**.
8. Click **Finish** to complete the installation process.

Windows installation procedure

You must be logged in with sufficient privileges to perform the installation.

To install in a Windows environment:

1. If an earlier release of Dashboard is already installed on your server, uninstall it by following the steps in the section, [Uninstalling the Dashboard](#).
2. **For Silent Installations only**, locate the Windows\options.txt file in the Dashboard installation directory. The options file contains the standard responses to the installation program's prompts.

Copy the file to a temporary directory on your server. (You can rename it to something shorter, like opt.txt.) Use your preferred text editor to make any appropriate changes and save the file. The options and their default values are fully described in the file.

3. Locate WIN_ECMDashboard.exe in the Dashboard folder.

Graphical installation

Double-click the file to start the installation program.

Silent installation

To install the Dashboard silently (with no screen output), enter the following command at a command prompt. Add the `-silent` and `-options` flags to the command:

```
WIN_ECMDashboard.exe -silent -options drive:\Dashboard\Windows\options.txt
```

Where *drive* is the appropriate drive letter.

If you copied and modified the options.txt file, the command might look like this:

```
WIN_ECMDashboard.exe -silent -options drive:\tmp\opt.txt
```

where *drive:\tmp\opt.txt* is the location of the file you copied and modified.

Be sure to specify the full path to the options.txt file.

During a silent installation, the following prompts do not display.

4. At the Welcome page, click **Next**.
5. Accept the license agreement terms, and click **Next**.
6. Specify the location where you want to install the Dashboard, and click **Next**.
7. Choose the type of installation, either Typical or Custom, and click **Next**.
8. Review the summary information, and click **Next**.
9. Click **Finish** to complete the installation process.

Supported JVMs

AIX	Solaris	HP-UX
aix_power\ibm_aix_14.jvm aix_power\ibm_aix_141.jvm aix_power\ibm_aix_142.jvm aix_power\ibm_aix_142_64.jvm aix_power\ibm_aix_14x.jvm aix_power\ibm_aix_14x_64.jvm aix_power\ibm_aix_15x.jvm aix_power\ibm_aix_15x_64.jvm aix_power\ibm_aix_16x.jvm aix_power\ibm_aix_16x_64.jvm	solaris\sun.jdk.1.4.2.solaris.jvm solaris\sun.jre.1.4.0.solaris.jvm solaris\sun.jre.1.4.1.solaris.jvm solaris\sun.jre.1.4.1.solaris64.jvm solaris\sun.jre.1.4.2.solaris.jvm solaris\sun.jre.1.4.2.solaris64.jvm solaris\sun.jre.1.4x.solaris.jvm solaris\sun.jre.1.5.0.solaris.jvm solaris\sun.jre.1.5.0.solaris64.jvm solaris\sun.jre.1.5x.solaris.jvm solaris\sun.jre.1.5x.solaris64.jvm solaris\sun.jre.1.6x.solaris.jvm solaris\sun.jre.1.6x.solaris64.jvm	hpux\hp_hpux_14x.jvm hpux\hp_hpux_15x.jvm

Linux	Windows
linux\ibmjre140.jvm linux\ibmjre141.jvm linux\ibmjre142.jvm linux\ibmjre14X.jvm linux\ibmjre15X.jvm linux\ibmjre16X.jvm linux\sunjdk14.jvm linux\sunjdk141.jvm linux\sunjdk142.jvm linux\sunjdk15.jvm linux\sunjdk16.jvm linux\sunjre14.jvm linux\sunjre141.jvm linux\sunjre142.jvm linux\sunjre15.jvm linux\sunjre16.jvm	win32\ibm_win32_14.jvm win32\ibm_win32_142.jvm win32\ibm_win32_16x.jvm win32\sun_win32_14.jvm win32\sun_win32_141.jvm win32\sun_win32_142.jvm win32\sun_win32_14x.jvm win32\sun_win32_15.jvm win32\sun_win32_15x.jvm win32\sun_win32_16x.jvm

Uninstalling the Dashboard

UNIX uninstall procedure

You can be logged in as any user to uninstall the Dashboard.

To uninstall in a UNIX environment:

Go to `<install_location>/_uninst` and locate the uninstaller program.

- **Graphical uninstallation**

Start the uninstaller by entering the command at the system prompt:

```
./uninstaller.bin
```

If you need to specify the JVM location, run the following command instead:

```
./uninstaller.bin -is:javahome jre_location
```

For example, if your JRE is located at `/opt/java1.4.1/jre`, you would run this command:

```
./uninstaller.bin -is:javahome /opt/java1.4.1/jre
```

- **Silent uninstallation**

To uninstall the Dashboard silently, enter the uninstaller command at the system prompt and add the `-silent` flag:

```
./uninstaller.bin -silent
```

or

```
./uninstaller.bin -is:javahome /opt/java1.4.1/jre -silent
```

Windows uninstall procedure

You must have sufficient privileges to perform the uninstallation.

To uninstall in a Windows environment:

- **Graphical uninstallation**

1. Access the Control Panel, and then double-click **Add/Remove Programs**.
2. In the list of **Currently Installed Programs**, select the version of the Dashboard to remove. For example, **IBM System Dashboard for Enterprise Content Management 4.5.0**, and then click **Change/Remove**.
3. Click **Next** to confirm that you are uninstalling the Dashboard and Usage Reporter in the wizard.
4. Click **Finish** to complete the uninstall process.

- **Silent uninstallation**

1. Open a command prompt and go to `drive:<install_location>_uninst`.
2. Locate the uninstaller program and enter the following command at the command prompt:

```
uninstaller.exe -silent
```

Dashboard views

Dashboard provides the following five views:

Views	Description
Summary	This is the default view. After the appropriate parameters are configured, the Summary view provides “high-level” status of the health of the entire collection of servers being monitored. See Summary view for more information.
Details	This view provides real-time data that is updated at the intervals you have configured. Available data includes both system and application-specific metrics. See Details view for more information.
Clusters	This view is used to configure the servers that you want the Dashboard to monitor. You can define one or more clusters (collections of hosts) to monitor. Each cluster definition can also include an Interval setting, which defines how frequently you want to sample data from the applications within that cluster. Cluster definitions can be saved for future use. See Clusters view for more information.
Alerts	This view displays urgent messages that notify administrators of possible problems, such as a lost connection to a listener. See Alerts view for more information.
Reports	This view allows you to define or modify report templates and run reports against data available in the Details view. The reports are written to comma-separated-value (CSV) files that can easily be imported into other tools, such as spreadsheets, for analysis. See Reports view for more information.

In addition to the five views, a Messages box is always present, regardless of the view you access. The Message box displays messages that identify the Listeners to which the Dashboard connects, fails to connect to, or to which the connection is lost.

Any custom messages, heartbeat results, or up time results received from Listeners are displayed in the Messages box as they are received.

The File menu allows you to save, and open previously configured cluster settings and reports.

Summary view

The Summary view provides a high-level view of the current health of the system. It displays two separate graphs:

- The first graph plots the average response time (in milliseconds) for all the enabled Remote Procedure Calls (RPCs).
- The second graph displays the most recently received average response time and average CPU utilization of the servers within the specified cluster.

Before accessing this view, make sure the Dashboard is [configured](#) to collect data from a system. Use the Cluster view to create and edit existing hosts you want to monitor.

After you configure the Dashboard, you can specify cluster and server information from which you want to chart data in the two graphs displayed on this view. See [Accessing a cluster](#) and [Customizing service selection and time range](#) for more information.

Details view

The Details view provides a hierarchical view of all the performance data received from listeners found within the defined clusters. See [Viewing data](#) and [Accessing Listener tasks](#) for more information.

Note Highlight, and then right-click the Listener type nodes to access additional Listener tasks. See [Accessing Listener tasks](#) for descriptions of the tasks and more information.

This view is set up with the structure:

Cluster node – Corresponds to the clusters created.

Server node – Corresponds to the servers configured for monitoring.

Listener type – Matches the service of the application being monitored.

RPC – List of the available Remote Procedure Calls for monitoring. RPC duration is measured in nanoseconds in the Details view.

DISK – List of the available storage-related metrics.

NETWORK – List of the available network-related metrics.

CPU – List of the available CPU-related metrics.

USER – List of the non-RPC metrics being collected by the application.

Environment – Lists the Environmental and Static data received from this listener.

Clusters view

Use this view to configure the Dashboard and specify the servers that need to be monitored. You define one or more clusters (collections of hosts) that you want to monitor in this view. You can save the cluster definitions for future use.

You also determine the schedule in which information is collected. You define how often (in seconds) and how much data (default is 500 values) is collected from the clusters you are monitoring in this view.

Configure the Dashboard *before* using the other views.

See [Configuring Dashboard](#) and [Defining a cluster](#) for more information.

Alerts view

The Alerts view displays all urgent messages. For example, if a connection to a listener is lost, an alert message in red appears in this view notifying you of the problem. The urgent messages remain in this view until you manually delete them.

In addition to listing lost connections in the Urgent Message section, any critical levels above Info appear in red in the Message section. They also appear in the Urgent Message section with warnings and more information. The importance of each message is also displayed and appear in red or black text.

See [Deleting urgent messages](#) for more information on deleting messages from this view.

Reports view

The Reports view works similarly to the Clusters view. You can:

- create new report templates.
- add and delete metrics from defined templates.
- create reports using a template and data captured from a Listener.
- create a special report that can be used as input to Scout (a system capacity planning tool). This report does not require a custom report template.

Currently, a report must be run against the data from a single Listener. See [Working with a report template](#) for more information on generating reports. For more information on generating a Scout report, see [Running a Scout Report](#).

Configuring the Dashboard

Before you can use the Dashboard, you must first configure it to collect data from a system.

To start the Dashboard:

- In a Windows environment, highlight Programs from the Start menu, click IBM FileNet P8 Platform, and then select Dashboard.
- In a UNIX environment, launch the manager shell script called Dashboard from the directory containing the required jar files.

Use the Clusters view to create and edit existing cluster definitions, which list the hosts you want to monitor.

Defining a cluster

You work with clusters in the Clusters view. Defining a cluster means you can:

- [adding a new cluster](#)
- [adding servers you want to monitor](#)
- [saving a cluster](#)
- [accessing an existing cluster](#)

You can also access the cluster you define from the [Summary view](#) and [Details view](#). See Summary view and Details view for more information.

To add a cluster:

1. Click the Clusters view, and then click **New** to create a new cluster.
2. In the Add Cluster dialog box, enter a name for the cluster for which you are defining, and then click **OK**. The name is usually related to the function of the cluster, such as “Customer Account Self Service”.

To add servers that you want to monitor:

1. Under Defined Clusters, highlight the cluster you just created, and then click **Edit**. You can also double-click the cluster’s name.
2. In the Edit Cluster dialog box, click **Add** to select the servers you want to monitor.

Notes:

- You can enter the collection interval (in seconds) in the Interval (seconds) parameter box. Specifying a collection interval can help make the task of analyzing data for an entire cluster much easier because the times reported will be the same as will the information produced and collected during a specific interval. If you leave this field blank, the Dashboard will not change the aggregation intervals of the Listeners it connects to within this cluster. Instead it will receive data from them on their existing collection schedule.
- The interval setting is ignored by the Image Manager and Process Engine Listeners. Their interval is determined by the polling schedule set in the configuration file `perf_mon.script`.
- You can configure the number of data points, regardless of the collection interval, the Dashboard will save in memory. By default, the Dashboard stores 500 data points. You can configure this parameter by editing the value under the Maximum data points parameter.

3. In the Host Information dialog box, enter the name or IP address of the server you want monitored under the Add Host parameter. Normally, the TCP port number displayed does not need to be changed, as it is the default value used by the Listeners.
4. Click **OK** to add this host to the list of hosts in this cluster. Repeat steps 5 and 6 until all hosts within this cluster are added.

To save a cluster:

Your existing clusters appear under Defined Clusters in the Cluster view. You can save your cluster settings for future use and they can be saved from any of the views. Cluster settings are saved to an XML file. Clusters you save can be accessed later from the [Summary view](#) and [Details view](#). See Summary view and Details view for more information.

- From the File menu, click **Save Clusters**. Enter the name and location to you which you want to save the file.

To access existing clusters:

1. From the File menu, click **Open Clusters**.
2. Navigate to the folder containing the saved Cluster settings.

Highlight the appropriate XML file, and then click **Open**.

Starting the Listener on Image Services servers and Process Engine servers

Most FileNet products that support the Dashboard, such as CM, ISRA, RM, and so on, make the Listener active by default. However, you must activate the Listener explicitly on an Image Services server or a Process Engine server. To turn on the Listener automatically whenever Image Services or Process Engine is started, complete the following steps.

1. Go the `/fnsw/local/sd` directory (UNIX) or `drive:\fnsw_loc\sd` (Windows) to see if a `perf_mon.script` file exists.
 - If a `perf_mon.script` already exists, skip to Step 2.
 - If a `perf_mon.script` does not exist, create one by copying it from `/fnsw/lib/perf/` (UNIX) or `drive:\fnsw\lib\perf` (Windows).

```
cp /fnsw/lib/perf/perf_mon.script /fnsw/local/sd/perf_mon.script
```

(Copy to `drive:\fnsw_loc\sd` on a Windows server.)

2. From the `/fnsw/local/sd` directory (UNIX) or `drive:\fnsw_loc\sd` (Windows), use your preferred editor to edit the `perf_mon.script` file to make the first command line of the script file to be **set listener true**. Your edited file might look similar to this example:

```
# stamp
#
set listener true
schedule 0 0:00:00 2:00:00
schedule 0 6:00:00 0:15:00
schedule 0 19:00:00 2:00:00
schedule 1 0:00:00 2:00:00
link 0 1
link 1 0
link 2 0
link 3 0
link 4 0
link 5 0
link 6 1
poll /fnsw/local/sd/1/perflog
echo done
# stamp d;lkfjpoj;r;wohf
```

3. Save and Exit the file.
4. Restart the Image Services or Process Engine software. The Listener will start automatically.

Customizing the service selection and time range

You customize the service selection and time range from the Summary view. See [Summary view](#) for more information.

Service Selection

Under Service Selection, the two options customize the Summary view as it relates to the clusters and/or servers you want represented in the two charts.

You can change both the cluster from which to view information, as well as the server. The list of choices in the Server box depends on the choice you made in the Cluster box. Therefore, select the cluster first.

The Cluster setting determines which cluster's information is displayed in the two graphs. In addition, it allows you to see an average response time over all servers within the cluster (the default) or to see details of the response times of all listeners on a specific server within that cluster.

To specify the cluster and server:

1. Click the Summary view.
2. In the Cluster list, select the cluster you want represented in the charts.
3. In the Server list, select the server you want represented in the charts or select *All*.

Time Range

You specify a range of time you want reflected in the Average Response Time chart.

To select a time range:

1. Click the *Summary* view.
2. In the Start list, select the starting time.
3. In the End list, select the ending time.

Viewing data

You access data from the Details view. See [Details view](#) for more information.

Note Highlight, and then right-click the Listener type nodes to access additional Listener tasks. See [Accessing Listener tasks](#) for descriptions of the tasks and more information.

To view data:

1. Click the *Details* view.
2. Double-click the cluster node containing the servers from which you want to obtain data.
3. Expand the nodes corresponding to the servers from which you want to obtain data.
4. Expand the Listener node.
5. Expand the Event Classes nodes to view the statistics from the metric of interest.
6. Highlight the metric to view the data.

Nodes in the tree that represent containers (logical groupings of Events and Meters) do not display any data in the window on the right.

Listener, Event, Meter, and Accumulator nodes display data in the window on the right. Notice that Events, Meters, and Accumulators display different columns in the table on the right.

Note: Currently, the implementation of the Listener for Image Services and the Performance Engine do not report min, max, or standard deviation for Meters and Accumulators; therefore, these columns are filled in with values from the Value or Average columns or zeros, as appropriate.

To chart data:

1. Right-click the metric, and then select *Chart <NodeType> Data*.

Notes:

- When rate data is available, you can graph it by selecting *Chart Event Rate Data*.
 - Multiple charts can be displayed concurrently, and they update automatically as new data is received.
2. From the Chart menu, click *Options* to customize your charts.

Accessing Listener tasks

You access Listener tasks from the Details view. See [Details view](#) for more information.

You can perform a number of tasks on a listener and access the tasks from the Listener node.

To access listener tasks:

1. Click the [Details view](#).
2. Right-click a Listener node in the tree and refer to the following table for a list of tasks and descriptions:

Task	Description
Disconnect this Listener	Disconnect from that listener (useful particularly for a listener that has gone down and whose historical data is no longer needed).
Request heartbeat	Query the listener for the health status of its application (heartbeat).
Request uptime	Query the listener for its application's uptime.
Send custom message	Send a custom message to that listener.
Archive History	Allows you to save off the historical data maintained by this listener. To read the archived data, see Opening an archive file .
Request user list	(Content Engine 4.5 or higher only) Display a list of currently logged in users and the number of RPCs.

Deleting urgent messages

You access urgent messages from the Alerts view. The messages remain in this view until you manually delete them. See [Alerts view](#) for more information.

To delete urgent messages:

1. Click the Alerts view.
2. Highlight the messages you want to delete, and then click Dismiss.

Working with a report template

A report template defines the metrics whose values you want to include in your reports. Each template has a name that you can define. You can save in a single XML file, and later reload, a set of report templates that can be used repeatedly.

You define reports from the Reports view. See [Reports view](#) for more information.

To define a report template:

1. Click the Reports view.
2. Click **New** to create a report template.
3. Enter a name for the report, and then click **OK**.
4. Highlight the created report, and then click **Edit**. Alternatively, double-click the report's name.
5. Highlight the Event, Meter, or Accumulator you want to report.
6. Do one of the following actions:
 - o To add only that metric, click **Add to Template**.
 - o To add that metric, as well as any subordinate metrics, click **Add with children**. The **Add with children** button can also be used when an Event Class (such as "CPU") or a Listener name is selected in the tree.
7. Repeat the previous steps until all of the metrics are added.
8. After you add all the metrics to the template, click **OK**.
9. [Save](#) the template.

Saving a report template

To save a report template:

- From the File menu, click **Save Report Templates** to save your new template definition.

Editing a report template

You access a report from the Reports view. See [Reports view](#) for more information.

To edit a report template:

1. Click the Reports view.
2. Highlight the created report, and then click **Edit**. Alternatively, double-click the report's name.
3. In the tree view on the left, find the Event, Meter, or Accumulator that you wish to report and highlight it.
4. To add only that metric, click **Add to Template**. To add that metric, as well as any subordinate metrics, click **Add with children**. The **Add with children** button may also be used when an Event Class (such as "CPU") or a Listener name is selected in the tree.
5. Repeat step the previous step until all metrics are added.
6. Once you've added all the metrics to the template, click **OK**.
7. [Save](#) the revised template. See [Saving a report template](#) for more information.

Running a report

Running a report allows you to export the captured data to a comma-delimited file. Prior to running a report, make sure the data captured covers the time period of interest. For example, if you want to restrict the length of the report to the past 24 hours, specify the 24-hour period you are interested in. The amount of data collected in the report is dependent on the time period you specify prior to running the report and the [schedule in which information is collected](#) defined in the [Clusters view](#).

Note: If you are running the Dashboard on a different system from the host that is being analyzed, Dashboard synchronizes the time, regardless of time zones, for all of the Listeners within a cluster. Specifying a collection interval can help make the task of analyzing data for an entire cluster much easier because the times reported will be the same as will the information produced and collected during a specific interval. Keep in mind that the interval setting defined in the Clusters view is ignored by the Image Manager and Process Engine Listeners. Their interval is determined by the polling schedule set in the configuration file `perf_mon.script`.

You run a report from the Reports view. See [Reports view](#) for more information.

To run a report:

1. From the Reports view, highlight the report template you want to use, and then click **Run**.
2. From the tree view on the left, select the Listener from which you want the report to be run. You can also use the check boxes under the Options parameter to send additional information to the report.
3. On the right side, select the length of the report in hours under Length in hours.
4. Under To, select the end of the time period for which to report the data.

Use both the Length in hours and To fields to restrict the length of the report to focus on a specific time period.

5. Under Output To, specify the path and output file name of the generated report. You can also click the ellipsis button to specify a location. The format of the generated report is a comma-separated-value (CSV) file, so an extension of `.csv` is recommended. If you do not specify an extension for the report you are generating, a default `.csv` extension is used for the reports.
6. To generate the report, click **Run**. The report is created and the Run Report dialog box is closed. If any errors occur, they are reported and the dialog box remains on screen allowing you to fix the errors and try again.

You can open your finished report with software tools from other vendors, such as a spreadsheet program, allowing you to further analyze the information and create charts of the data.

Running a Scout report

Running a Scout report allows you to export the captured data to a comma-delimited file that can be used as input to the FileNet Scout system configuration and output tool. Your IBM FileNet representative can give you more information about the Scout tool, which is used by field service personnel for forecasting and planning system capacity requirements.

You might run a Scout report if you are planning to expand your IBM FileNet system. For example, you might want to determine how many more CPUs you would need if your work load increased by 40% in the next year. The Scout report gives a baseline measurement of your current system configuration that field service personnel can input to the Scout tool to do the projection.

The process of running a Scout report is very similar to the process of running a regular report. However, the Scout report uses a standard template, so you do not define which metrics are collected and you do not use a report template.

Note: If you are running the Dashboard on a different system from the host that is being analyzed, Dashboard synchronizes the time, regardless of time zones, for all of the Listeners within a cluster. Specifying a collection interval can help make the task of analyzing data for an entire cluster much easier because the times reported will be the same as will the information produced and collected during a specific interval. Keep in mind that the interval setting defined in the Clusters view is ignored by the Image Manager and Process Engine Listeners. Their interval is determined by the polling schedule that is set in the configuration file `perf_mon.script`.

You run a Scout report from the Reports view. See [Reports view](#) for more information.

To run a Scout report:

1. From the Reports view, click **Scout**. The Scout report uses a standard report template so you do not need to select a custom report template.
2. When the Scout window displays, select the Listener from which you want the report to be run.
3. On the right side, select the length of the report in hours under Length in hours.
4. Under To, select the end of the time period for which to report the data.

Use both the Length in hours and To fields to restrict the length of the report to focus on a specific time period.

5. Under Output To, specify the path and output file name of the generated report. You can also click the ellipsis button to specify a location. The format of the generated report is a comma-separated-value (CSV) file, so an extension of `.csv` is recommended. If you do not specify an extension for the report you are generating, a default `.csv` extension is used for the reports.
6. To generate the report, click **Run**. The report is created and the Scout dialog box closes. If any errors occur, they are reported and the dialog box remains on screen allowing you to fix the errors and try again.

Your finished report can then be used as input to the Scout tool, which can estimate your future system requirements, based on the current configuration of your system.

Archiving Manager

The Archiving Manager is a command-line utility that gathers data needed for later analysis. Specifically, the Archiving Manager collects data from either a listener or a collection of listeners as defined in a cluster definition. The Archiving Manager can be run from any server able to connect to the specified listeners. It saves data in a format recognized by the Dashboard.

See [Archiving Manager flags](#) and [Opening an archive file](#) for more information.

Archiving Manager syntax

The Archiving Manager uses the following syntax:

```
java -jar archiver.jar [flags] cluster.xml
```

Archiving Manager flags

The following parameters can be passed as flags to the Archiving Manager:

Flag	Definition
cluster.xml	Specifies the path and name of the cluster definition. Data from all the listeners on the hosts specified in this file will be archived.
-d path	Specifies the path of the directory in which the generated archives should be saved. Each listener connection will result in a separate archive file in this directory. The default value is the current directory.
-h	Specifies that the available listener's history should be included in the generated archive file.
-i <i>seconds</i>	Specifies the interval in seconds. If an interval is not defined, the interval remains the same as it was before.
-m <i>MaxTries</i>	Specifies the number of times the archiver tries to reconnect to a host in a specified cluster when connection is lost. It will retry the number of times specified, waiting 5 seconds between each try, before ending the reconnection. The default value for <i>MaxTries</i> is 5.
-n <i>timespec</i>	Specifies the amount of time the Archiving Manager should log data to a file. After the <i>timespec</i> value is satisfied, a new file is created. The <i>timespec</i> can be in the form of hours:minutes or as a real number, such as 3.5. The archiver can gather historical data, data from the current time going forward for some period, or both, depending on which flags you use. The -n flag specifies that you want to record some data starting from NOW (whenever you run the command) for some length of time; -n 1:00 would mean from now till one hour from now. The default value for <i>timespec</i> is 0. The default of -n 0 means the archiver will not wait for further data. If you use the default -n 0, also use the -h flag; otherwise, no data will be collected at all.
-t <i>timespec</i>	Specifies the amount of time for which the Archiving Manager should collect data starting at the time of execution. The <i>timespec</i> can be in the form of hours:minutes or as a real number, such as 3.5. You can also specify -t - to specify you want to continue to collect data until you click Enter. Use this parameter with the -v flag for interactive use. The default value for <i>timespec</i> is 0.

Flag	Definition
-v	Specifies a verbose mode, where you can indicate when an archiver is receiving data. This setting is useful when you use the Archive Manager interactively and identify when an activity is occurring.

Opening an archive file

You can open an archive file for analysis within the Dashboard.

To open an archive file:

- From the File menu, select the **Open Archive** option.

After the archive file is loaded, its data is placed in a virtual cluster named “Archives.” You can then manipulate the data in the same manner as data received from Listener connections. You can also open more than one archive.

Interpreting counters

Dashboard exposes counters that are generated by the various FileNet software products you want to monitor. For each product, related counters and their definitions are listed in the following topics. Use the information for each product to help you interpret the counters that are displayed by the Dashboard.

- [Content Engine counters](#)
- [Dashboard counters](#)
- [Image Services counters](#)
- [Process Engine counters](#)

Content Engine counters

The following CE counters are defined:

- [Centera Counters](#)
- [CBR/Verity counters](#)
- [CFS-IS Import Agent Counters](#)
- [Content Retrieval Counters](#)
- [Content Upload Counters](#)
- [Content Update Counters \(Roll Forward Processing\) Requests Processed](#)
- [Content Update Counters \(Roll Forward Processing\) Requests Queued](#)
- [Database Counters](#)
- [FSB-Snaplock Counters](#)
- [Image Services Counters](#)
- [Independent Repository Object Counters](#)
- [Non-Repository Object Retrieval, Database Calls, and Marking Set Cache Counters](#)
- [Object Stores Counters](#)
- [Roll Forward Dispatcher Counters](#)
- [RPC Counters](#)
- [Snaplock Specific Counters](#)
- [Storage Area Summary Counters](#)

Centera counters

These counters measure the activities for a particular Centera fixed content device.

Counter Name	Type	Definition
Cached Pool Count	Meter	Current number of open Centera Pool connections in the cache.
Pools Added to the Cache	Event	Number of Centera pools created and added to the cache (normally this will be the same as Cached Pool Count, but the value is used to track reconnecting based on bad connections).
C-Clips Created	Event	Total number of C-Clips created.
C-Clip Creation Failures	Event	Total number of failures attempting to create C-Clips.
Tags Created	Event	Total number of Tags created.
Tag Creation Failures	Event	Total number of failures attempting to create Tags.
Total Bytes Written to Tags	Event	Total number of bytes written to all Tags.
C-Clips Deleted	Event	Total number of C-Clips deleted using the normal delete scheme.
C-Clips Deleted with Audit	Event	Total number of C-Clips deleted using audited delete.
C-Clips Deleted with Purge	Event	Total number of C-Clips deleted using the purge delete scheme.
C-Clip Deletion Failures	Event	Total number of failures deletion C-Clips (all deletion types).
C-Clips Opened	Event	Total number of C-Clips opened for content retrieval.
C-Clip Open Failures	Event	Total number of failures opening C-Clips.
C-Clips Closed	Event	Total number of C-Clips closed.
Tags Opened	Event	Total Number of Tags opened for content retrieval.
Tag Open Failures	Event	Total Number of failures opening Tags.
Total Bytes Read From Tags	Event	Total bytes retrieved from all Tags.

CBR/Verity counters

These counters measure the activities for CBR/Verity. The product name is now K2. CE does not expose a counter until it is used, so if your system is not running CBR, the CBR Dispatcher counters are not shown.

Counter Name	Type	Definition
CBR Dispatcher	Event	Dispatch Batch – Batch Duration
	Event	Dispatch Batch – Batch Size.
CBR Executor	Event	Dispatch Batch – Batch Duration

Counter Name	Type	Definition
	Event	Dispatch Batch – Batch Size.
CBR Executor for Verity	Event	Delete Batch – Batch Duration
	Event	Delete Batch Items – Batch Item Duration
	Event	Index Optimization - Duration
	Event	Insert Batch – Batch Duration
	Event	Insert Batch Items – Batch Item Duration
	Event	Verity Index Batch – Batch Duration
	Event	Verity Index Batch Items – Batch Item Duration

CFS-IS Import Agent counters

These counters measure the activities for the CFS-IS Import Agent.

Counter Name	Type	Definition
Documents Processed	Event	Total number of CFS-IS documents processed.
	Inserts	Total number of documents inserted.
	Exports	Total number of documents exported.
	Updates	Total number of documents updated.
	Deletes	Total number of documents deleted.
Annotations Processed	Event	Total number of CFS-IS annotations processed.
	Inserts	Total number of annotations inserted.
	Exports	Total number of annotations exported.
	Updates	Total number of annotations updated.
	Deletes	Total number of annotations deleted.

Content Retrieval counters

These counters measure the content retrieval activities for the life of a server instance for a given storage area.

Counter Name	Type	Definition
Content Elements Retrieved	Event	Total number of content elements retrieved from the Storage Area, by this Virtual Server instance.
Total Size of Content Retrieved	Event	Total size (in KB) of all content elements retrieved from the Storage Area, by this virtual server instance (this should be the actual bytes read, not the size of the content requested).
Abandoned Retrieval Requests	Event	Number of content retrieval requests that were never <i>closed</i> by the client.

Content Upload counters

These counters measure the content upload activities for the life of a server instance for a given storage area.

Counter Name	Type	Definition
Content Elements Uploaded	Event	Total number of content elements successfully uploaded to the Storage Area, by this Virtual Server instance. Note that this count (and size below) is independent of the number of content elements actually committed to the system (aborted transactions are not accounted for).
Total Size of Content Uploaded	Event	Total size (in kilobytes) of all content elements uploaded to the Storage Area by this virtual server instance.
Abandoned Upload Requests	Event	Number of content upload requests that were successfully started but never completed.

Content Update counters (Roll Forward Processing) Requests Processed

These counters measure the Content Roll Forward processing activities (request processed) for the life of a server instance for a given storage area.

Counter Name	Type	Definition
Finalize New Element Count	Event	Total number of content elements finalized (committed to the system) for the Storage Area.
Finalize Moved Element Count	Event	Total number of content elements finalized (committed to the system) as the target of a move content operation for the Storage Area.
Delete Element Count	Event	Total number of independent content elements deleted for the Storage Area. This is the count of elements deleted individually, and not as part of the deletion of the parent document.
Delete All Elements Count	Event	Total number of dependent content elements deleted for the Storage Area. This is the count of elements deleted as part of the deletion of the parent document.
Migrate Element Count	Event	Total number of content elements migrated to a fixed content device for the Storage Area.
Migration Count	Event	Total number of logical or physical document objects created on the fixed device for the Storage Area.
Delete Fixed Element Count	Event	Total number of content elements deleted from a fixed content device for the Storage Area.

Counter Name	Type	Definition
Delete Fixed Count	Event	Total number of logical or physical document objects deleted from the fixed device for the Storage Area.
Federated Lockdown Count	Event	Total number of federated document objects locked down for this fixed device.

Content Update counters (Roll Forward Processing) Requests Queued

These counters measure the Content Roll Forward processing activities (requests queued) for the life of a server instance for a given storage area.

Counter Name	Type	Definition
Finalize New Element Count	Event	Total number of content elements finalized (committed to the system) for the Storage Area.
Finalize Moved Element Count	Event	Total number of content elements finalized (committed to the system) as the target of a move content operation for the Storage Area.
Delete Element Count	Event	Total number of independent content elements deleted for the Storage Area. This is the count of elements deleted individually, and not as part of the deletion of the parent document.
Delete All Elements Count	Event	Total number of dependent content elements deleted for the Storage Area. This is the count of elements deleted as part of the deletion of the parent document.
Migrate Element Count	Event	Total number of content elements migrated to a fixed content device for the Storage Area.
Migration Count	Event	Total number of logical or physical document objects created on the fixed device for the Storage Area.
Delete Fixed Element Count	Event	Total number of content elements deleted from a fixed content device for the Storage Area.
Delete Fixed Count	Event	Total number of logical or physical document objects deleted from the fixed device for the Storage Area.
Federated Lockdown Count	Event	Total number of federated document objects locked down for this fixed device.

Database counters

Group	Variable	Counter	Definition
Database	Select	Event	The total number of database selects.
	Insert	Event	The total number of database inserts.
	Delete	Event	The total number of database deletes.
	Update	Event	The total number of database updates.
	Select Duration	Duration	The time for each select call.
	Insert Duration	Duration	The time for each insert call.
	Delete Duration	Duration	The time for each delete call.
	Update Duration	Duration	The time for each update call.

FSB/Snaplock counters

Counter Name	Type	Definition
Logon Count	Event	Total number of successful logon calls.
Logon Failures	Event	Total number of failures attempting to logon.
Files Created	Event	Total number of Files created.
File Creation Failures	Event	Total number of failures attempting to create Files
Total Bytes Written to Files	Event	Total number of bytes written to all Files
Files Opened	Event	Total number of Files opened for content retrieval.
File Open Failures	Event	Total number of failures attempting to open file for content retrieval.
Total Bytes Read From Files	Event	Total number of bytes read from files
Files Closed	Event	Total number of Files (opened for reading) closed.
Files Deleted	Event	Total number of Files deleted using the Normal delete scheme
Files Deleted with Purge	Event	Total number of Files deleted using the Purge delete scheme
Files Deleted with Destroy	Event	Total number of Files deleted using the Destroy delete scheme
File Deletion Failures	Event	Total number of failures attempting to delete files.

Image Services counters

These counters measure the activities for a particular Image Services fixed content device.

Counter Name	Type	Definition
Number of IS Logons Performed	Event	Total number of logons performed to the IS device. <ssi.logon>
Number of IS Logoffs Performed	Event	Total number of logoffs performed to the IS device. <ssi.logoff>
Documents Created	Event	Total number of IS Documents created. <ssi.saveNewDocument>.
Document Creation Failures	Event	Total number of failures attempting to create IS Documents. <ssi.saveNewDocument>.
Pages Created	Event	Total number of Pages created within IS Documents. (No separate ssi call).
Documents Deleted	Event	Total number of native (to FileNet) IS Documents deleted. <ssi.deleteDocuments>
Federated Documents Deleted	Event	Total number of federated IS Documents deleted. <ssi.deleteDocuments>
Annotations Deleted	Event	Total number of IS Annotations deleted.
Document Deletion Failures	Event	Total number of failures deleting native (to FileNet) IS Documents. <ssi.deleteDocuments>
Federated Document Deletion Failures	Event	Total number of failures deleting federated IS Documents. <ssi.deleteDocuments>
Annotation Deletion Failures	Event	Total number of failures deleting IS Annotations <ssi.deleteAnnotation>
Federated Documents Locked	Event	Total number of federated documents locked down. <ssi.lockdown>
Pages Opened	Event	Total number of IS Document Pages opened for content retrieval. < ssi.getContentElt>
Page Open Failures	Event	Total number of failures opening IS Document Pages. <ssi.getContentElt>
Pages Closed	Event	Total number of IS Document Pages closed. <currentSSI_CE.close>
Total Bytes Read From IS	Event	Total bytes retrieved from all IS Documents. <currentSSI_CE.read>

Independent Repository Objects counters

Group	Variable	Counter
Independent Object Retrieval	Action Loads	Event
	Action Consumer Loads	Event
	Annotation Loads	Event
	Choice List Loads	Event
	Class Definition Loads	Event
	Class Description Loads	Event
	Custom Object Loads	Event
	Document Lifecycle Action	Event
	Event Loads	Event
	Folder Loads	Event
	Link Loads	Event
	Property Template Loads	Event
	Queue Item Loads	Event
	Relationship Loads	Event
	Security Policy Loads	Event
	Storage Policy Loads	Event
	Storage Area Loads	Event
	Table Definition Loads	Event
Version Series Loads	Event	
Versionable Loads	Event	

Non-Repository Object Retrieval, Database calls, and Marking Set cache counters

Group	Variable	Counter
Independent Object Retrieval	Object Store Loads	Event
	Domain Loads	Event
	Marking Set Loads	Event
	Realm Loads	Event
	User Loads	Event
	Group Loads	Event
	Entire Network Loads	Event
Database	Select	Event
	Insert	Event
	Delete	Event
	Update	Event
	Create	Event
	Alter	Event
	Drop	Event
	Other Statements	Event
	Select Duration	Duration
	Insert Duration	Duration
	Delete Duration	Duration
	Update Duration	Duration
	Create Duration	Duration
	Alter Duration	Duration
	Drop Duration	Duration
	Other Statements Duration	Duration
Marking Set Cache	Marking Set Cache Attempts	Event
	Marking Set Cache Hits	Event
	Marking Set Cache Entries	Meter

Object Stores counters

Group	Variable	Counter	Definition
Annotation	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Class Definition	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Content Element	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Custom Object	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Document	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Folder	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Property Template	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
RCR	Creations	Event	The total number of objects created.
	Modifications	Event	The total number of objects modified.
	Deletions	Event	The total number of objects deleted.
	Loads	Event	The total number of objects loaded.
Ad Hoc Query	Ad Hoc Queries	Event	The total number of ad hoc queries executed.

Group	Variable	Counter	Definition
	Ad Hoc Query Continuations	Event	The total number of query continuations.
	Ad Hoc Query Row Results	Event	The total number of result rows returned by ad hoc queries.
	In Progress Queries	Meter	The total number of queries currently in progress.
Changes	Changes Succeeded	Event	The count of each individual execute change that succeeded. (create, update, or delete).
	Changes Failed	Event	The count of each individual execute change that failed. (create, update, or delete).
	Changes In Progress	Meter	The count of each individual execute change in progress. (create, update, or delete).
Repository Object	Repository Objects Created	Event	The total number of repository objects created.
	Repository Objects Deleted	Event	The total number of repository objects deleted.
	Repository Objects Updated	Event	The total number of repository objects updated.
	Repository Objects Loaded	Event	The total number of repository objects loaded.
Security Cache	Security Cache Attempts	Event	The total number of security cache requests.
	Security Cache Hits	Event	The total number of security cache hits.
	Security Cache Entries	Meter	The total number of security descriptors currently in the security cache.
Folder Cache	Folder Cache Total Requests	Event	The total number of folder cache requests.
	Folder Cache Hit Count	Event	The total number of folder cache hits.
	Folder Cache Miss Count	Event	The total number of folder name misses within the Folder Cache.
	Folder Cache Flush Count	Event	The total number of times the Folder Cache has been flushed.
	Folder Cache Entries	Meter	The total number of entries currently in the Folder Cache.
Queue Items	Queue Items Inserted	Event	The total number of queue items inserted.
	Queue Items Processed	Event	The total number of queue items processed.

Group	Variable	Counter	Definition
	Queue Items Failed	Event	The total number of queue items failed.
	Poison Queue Items	Event	The total number of poison queue items.
Database	Select	Event	The total number of DB selects.
	Insert	Event	The total number of DB insertions.
	Delete	Event	The total number of DB deletions.
	Update	Event	The total number of DB updates.
Others	Enumerations	Event	The total number of enumerations performed.
	Enumeration Continuations	Event	The total number of enumeration continuations.
	Synchronous Events	Event	The total number of synchronous events fired.
	Asynchronous Events	Event	The total number of asynchronous events fired.
	Document Classifications Requested	Event	The total number of document classifications requested.

Roll Forward Dispatcher counters

These counters measure the content queue batching process activities for a particular object store.

Counter Name	Type	Definition
Batch Update and Selection Count	Event	Total number of batch update and selection statements issued for the Content Queue table.
Batch Update and Selection Row Count	Event	Total number of rows updated and selected from the Content Queue table.
Batch Update Failure Count	Event	Number of failures encountered updating batches in the Content Queue table.
Batch Selection Failure Count	Event	Number of failures encountered selecting batches in the Content Queue table.
Expired Batch Update Count	Event	Total number of expired batch update statements issued for the Content Queue table.
Expired Batch Update Row Count	Event	Total number of expired rows updated in the Content Queue table.
Expired Batch Update Failure Count	Event	Number of failures encountered updating expired batches in the Content Queue table.
Pending Batch Count	Meter	Current number of pending batches in the dispatcher's queue.
Resolution Pending Batch Count	Meter	Current number of completed batches in the dispatcher's resolution queue.

Counter Name	Type	Definition
Active Worker Thread Count	Meter	Current number of active Content Queue Worker threads.
Batches Added to the Queue	Event	Total batches added to the dispatcher's queue.
Requests Added to the Queue	Event	Total requests added to the dispatcher's queue.
Batches Resolved	Event	Total number of batches resolved.
Requests Resolved	Event	Total number of requests resolved.
Requests Re-Queued for Retry	Event	Total number of requests re-queued for retry (not actually re-added to the queue, simply left in the queue for a future retry attempt).
Requests For Deleted Area Purged	Event	Total number of requests purge due to the storage area being deleted.
Worker Thread Startup Count	Event	Total number of Content Queue Worker Threads started.
Worker Thread Completion Count	Event	Total number of Content Queue Worker Threads that reached the completed state.

RPC counters

Variable	Counter
ExecuteChanges Requests	Event
ExecuteChanges Requests In Progress	Meter
ExecuteSearch Requests	Event
ExecuteSearch Requests In Progress	Meter
GetObjects Requests	Event
GetObjects Requests In Progress	Meter
GetSearchMetadata Requests	Event
GetSearchMetadata Requests In Progress	Meter
ExecuteChanges Requests Failed	Event
ExecuteSearch Requests Failed	Event
GetObjects Requests Failed	Event
GetSearchMetadata Requests Failed	Event
ExecuteChanges Time	Accumulator/Duration
ExecuteSearch Time	Accumulator/Duration
GetObjects Time	Accumulator/Duration
GetSearchMetadata Time	Accumulator/Duration
Queue Items Processed	Event
Queue Items Failed	Event

Variable	Counter
Queue Item processing Time	Accumulator/Duration
LDAP call Time	Accumulator/Duration

Snaplock Specific counters

These counters measure the activities for a particular Snaplock fixed content device.

Counter Name	Type	Definition
Set Retention Time	Event	Total number of successful file-set-snaplock retention-time calls.
Set Retention Time Failures	Event	Total number of failures attempting to Set Snaplock Retention Time.
Get Retention Time	Event	Total number of successful file-get-snaplock retention-time calls.
Get Retention Time Failures	Event	Total number of failures attempting to Get Snaplock Retention Time.

Storage Area Summary counters

These counters reflect the current status of a particular storage area, such as how many content elements or how many KB of content have been added for a storage area.

Counter Name	Type	Definition
Content Element Count	Meter	Total number of content elements contained in the Storage Area. Corresponds to the element_count column of StorageClass table.
Content Elements Added	Meter	Total number of content elements added to the Storage Area over the life of the area. Corresponds to the elements_created column of the StorageClass table.
Content Elements Deleted	Meter	Total number of content elements deleted from the Storage Area over the life of the area. Corresponds to the elements_deleted column of the StorageClass table.
Duplicate Content Added	Meter	Total number of duplicate content elements that were uploaded and then discarded as already present.
Duplicate Content Deleted	Meter	Total number of element deletions that did not reduce the reference count to zero (and hence did not result in the deletion of actual content).
Free Space	Meter	Free space remaining for the Storage Area (computed based on the Total Size of Content value and the Storage Areas Maximum Size kilobytes property).
Total Size of Content	Meter	Total size (in KB) of all content elements contained in the Storage Area. Corresponds to the element_kilobytes column of the StorageClass table.

Dashboard counters

The Listener component automatically gathers information about the operating environment of an application. The counters gathered are the same, with few exceptions, regardless of the operating system in use.

Environmental Information

The environmental information collected by the Listener includes any static data about the application or the computer.

Property	Description
app_name	The name of the application
app_version	The version and patch level numbers of the application
hostname	The primary host name of the system where the application is running
java.runtime.version	(Java only) Version number of the JVM
jvm_max_memory	(Java only, 1.4 or higher JVM) The maximum memory setting for the JVM in bytes
os.arch	The architecture of the computer's processor
os.name	The name of the operating system, such as Windows 2003
os.version	The version number of the operating system
pagesize	(C++ only) The size of a page of memory in bytes
processors	The number of processors, of all types, found in the computer. For Java, reported for JVM 1.4 or higher.
protocol	<p>The internal protocol that the Dashboard uses to communicate with the Listeners.</p> <p>Dashboard 3.5.1 introduced 1.0 Dashboard 4.0.0 introduced 1.1 Dashboard 4.5.0 introduces 1.2.</p> <p>Dashboard 4.5.1 can connect to any previous Listener version; it will communicate with 1.0 and 1.1 listeners simultaneously with 1.2 listeners. In summary, Dashboard 4.5.1 is compatible with all Listeners back to the original 3.5.1 release.</p>
sun.os.patch.level	(Java only; Sun JVM only) Patch level of the operating system
time	The time, in seconds, since Jan 1, 1970 UTC sent by the Listener. The Dashboard computer might have a slightly different time setting, as might other Listeners, so the Dashboard calculates the difference between the Listeners and its own time setting and automatically adjusts its own timestamps. As a result, if the Dashboard is monitoring two or more Listeners, the timestamps of the Listeners are comparable. For example, 1234567890 occurred at 3:31 p.m. on Friday, Feb. 13, 2009.
user.language	(Java only) Default locale for the JVM

CPU counters

The CPU counters include information about the percentage of time spent by the CPU in various states, the number of interrupts and context switches, and memory information as available. The percentage of the CPU's time will total 100% across the following categories. Although these values are represented in the Dashboard as Event counters, they are more properly viewed as Meters, because they represent absolute values between 0 and 100%.

CPU Utilization counters

Property	Description	Windows Counter Name
busy	The percent of time when the CPU is in use	On HP-UX and Windows servers: 100% – idle On other servers: 100% – idle – wait.
idle	The percent of time when the CPU has nothing useful to do	100% – \Processor(_Total)\% Processor Time
interrupt	(Windows only) The percent of time spent in processing interrupts	\Processor(_Total)\% Interrupt Time
nice	(HP-UX only) The percent of time spent executing low priority processes. Other systems return the "Wait I/O" value instead. "Nice" processes run with low priority (they are "nice" to other users). So the nice percentage is how much time the CPU spent running nice processes.	N/A
user	The percent of time spent executing user-level code	\Processor(_Total)\% User Time
system	The percent of time spent executing operating system code	\Processor(_Total)\% Privileged Time

CPU Event counters

Property	Description	Windows Counter Name
interrupts	The number of interrupts sustained by the CPU	\Processor(_Total)\Interrupts/sec
memory	The number of megabytes of memory free	\Memory\Available MBytes
switches	The number of context switches	\System\Context Switches/sec

Java-specific CPU counters

Property	Description
jvm_free_memory	The amount of free memory, in megabytes, in the JVM
jvm_total_memory	The current total memory being used by the JVM. This will be <= the value shown in the environmental information for jvm_max_memory.

Disk counters

The following Disk I/O counters are reported.

Property	Description	Windows Counter Name
pg_in	The number of page-in operations	\Memory\Pages Input/sec
pg_out	The number of page-out operations	\Memory\Pages Output/sec
reads	The number of disk reads	\PhysicalDisk(_Total)\Disk Reads/sec
writes	The number of disk writes	\PhysicalDisk(_Total)\Disk Writes/sec

Network I/O counters

The following Network events are reported.

Property	Description	Windows Counter Name
errors_in	The number of receive errors detected across all interfaces	\Network Interface\Packets Received Errors
errors_out	The number of transmit errors detected across all interfaces	\Network Interface\Packets Outbound Errors
packets_in	The number of packets received across all interfaces	\Network Interface\Packets Received/sec
packets_out	The number of packets transmitted across all interfaces	\Network Interface\Packets Sent/sec
collisions	The number of collisions detected across all interfaces	N/A - UNIX Only

User counters

The Dashboard provides several Garbage Collector counters. Each collector is represented as an event, the count indicates how many times that particular collector was run, followed by the duration accumulator that shows the average amount of time spent running those garbage collections.

Garbage Collectors

Property	Description
Copy duration	(Java only; JVM 1.5 or higher) The amount of time spent running Copy activities.
MarkSweepCompact duration	(Java only; JVM 1.5 or higher) The amount of time spent running MarkSweepCompact collection activities.

Image Services counters

Image Services counters also run on Process Engine (PE) and are identified as IS (mini) counters. The counters that exist on PE are identical to their counterparts on IS. The following IS counters are defined:

- [Disk Counters](#)
- [Document Services Counters](#)
- [Event Logging Abstract \(ELA\) Events](#)
- [File System Counters](#)
- [Miscellaneous Static Variables Counters](#)
- [MKF Counters](#)
- [Network Counters](#)
- [OSAR Server Counters](#)
- [PPM Counters](#)
- [RPC counters](#)
- [System Counters](#)
- [Virtual Memory Counters](#)
- [Workflo Counters](#)

Disk counters

Soft Report Symbol	Definition	Counter	Mapping to an external variable
disk.rdblks	blocks read from magnetic disk	DK_READCNT	FDOS only
disk.rdops	read operations from magnetic disk	DK_READOPS	FDOS only
disk.rderrs	errors reading from magnetic disk	DK_READERRS	FDOS only
disk.wtblks	blocks written to magnetic disk	DK_WRITECNT	FDOS only
disk.wtops	write operations to magnetic disk	DK_WRITEOPS	FDOS only
disk.wterrs	errors writing to magnetic disk	DK_WRITEERRS	FDOS only
disk.ops	total number of operations	DK_OPS	
disk.timeactive	percentage of time disk was busy	DK_TIMEACTIVE	AIX only
disk.KB	KB read and written	DK_KBXFERRED	AIX only
disk.cumseekd		DK_CUMSEEKD	AIX only
disk.KBrd	KB read	DK_KBREAD	AIX only
disk.KBwrt	KB written	DK_KBWRITTEN	AIX only
disk.xfrcap	transfer capacity to device	DK_TRANSFERCAP	AIX only
disk.blocksize	blocksize of device	DK_BLOCKSIZE	AIX only

Document Services counters

Soft Report Symbol	Definition	Counter	Mapping to external variable
ds.AsyncMigCalls	Asynchronous migrate calls	Struct counter AsyncMigCalls	
ds.BGQ_Removes	Background queue removes	Struct counter BGQ_Removes	
ds.CacheHits	total docs found in cache	sum of CacheHits[2,1,0]	CNT_DS_cache_hits(0,1,2)
ds.CacheHitsH	docs of priority 2 found in cache	struct counter CacheHits[2]	CNT_DS_cache_hits(2)
ds.CacheHitsM	docs of priority 1 found in cache	struct counter CacheHits[1]	CNT_DS_cache_hits(1)
ds.CacheHitsL	docs of priority 0 found in cache	struct counter CacheHits[0]	CNT_DS_cache_hits(0)
ds.ClientPages	Pages requested by client application	Struct counter ClientPages	
ds.ClientPageCacheHits	Cache hits of pages requested by client application found in cache.	Struct counter ClientPageCacheHits	
ds.Committals	# documents committed across all osars and drives	struct counter DocsCommitted	CNT_DS_docs_committed
ds.DocsMigrated	total # docs migrated from cache or drive	sum of DocsMigrated[2,1,0]	CNT_DS_docs_migrated(0,1,2)
ds.DocsMigratedH	# docs of priority 2 migrated from cache or drive	struct counter DocsMigrated[2]	CNT_DS_docs_migrated(2)
ds.DocsMigratedM	# docs of priority 1 migrated from cache or drive	struct counter DocsMigrated[1]	CNT_DS_docs_migrated(1)
ds.DocsMigratedL	# docs of priority 0 migrated from cache or drive	struct counter DocsMigrated[0]	CNT_DS_docs_migrated(0)
ds.DriveHits	total docs found on optical disk	sum of DriveHits[2,1,0]	CNT_DS_drive_hits(0,1,2)
ds.DriveHitsH	docs of priority 2 found on disk	struct counter DriveHits[2]	CNT_DS_drive_hits(2)
ds.DriveHitsM	docs of priority 1 found on disk	struct counter DriveHits[1]	CNT_DS_drive_hits(1)

Soft Report Symbol	Definition	Counter	Mapping to external variable
ds.DriveHitsL	docs of priority 0 found on disk	struct counter DriveHits[0]	CNT_DS_drive_hits(0)
ds.FastBatches	# fast batches committed	struct counter FastBatchCount	CNT_DS_fast_batch_count
ds.FastDocs	# fast batch docs committed	struct counter FastBatchDocs	CNT_DS_fast_batch_docs
ds.FastPages	#fast batch pages committed	struct counter FastBatchPages	CNT_DS_fast_batch_pages
ds.HRDQ_Removes	High priority read queue removes		
ds.ImportDocs	Requests for document imports		
ds.Imports	docs inserted in DOCS by import	struct counter ImportInserts	CNT_DS_import_inserts
ds.LRDQ_Removes	Low priority read queue removes		
ds.MigrateCalls	Migrate requests		
ds.MRDQ_Removes	Medium priority read queue removes		
ds.NFailed	notify timeouts, which means that after the migrate was complete, the ds_notify process tried to do a TPISendPEPReq call and it failed.	struct counter NotifyTimeouts	CNT_DS_notify_timeouts
ds.ODrivePageReads [osar=x][drive=y]	total page reads done on drive x and osar y, or across all drives and osars if no params specified	sum of PageHighReads, PageMedReads, and PageLowReads	CNT_DS_DrPageHiReads(os ar,drive)+ CNT_DS_DrPageMidReads(o sar,drive)+ CNT_DS_DrPageLoReads(os ar,drive)
ds.ODrivePageReadsH [osar=x][drive=y]	priority 2 page reads done on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters PageHighReads	CNT_DS_DrPageHiReads(os ar,drive)

Soft Report Symbol	Definition	Counter	Mapping to external variable
ds.ODrivePageReadsM [osar=x][drive=y]	priority 1 page reads done on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters PageMedReads	CNT_DS_DrPageMidReads(o sar,drive)
ds.ODrivePageReadsL [osar=x][drive=y]	priority 0 page reads done on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters PageLowReads	CNT_DS_DrPageLoReads(os ar,drive)
ds.ODrivePageWrites [osar=x][drive=y]	page writes done on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters PageWrites	CNT_DS_DrPageWrites(osar, drive)
ds.ODriveLoads [osar=x][drive=y]	drive loads done on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters Loads	CNT_DS_DrDriveLoads(osar, drive)
ds.ODriveSectorReads [osar=x][drive=y]	sectors read from drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters SectorsRead	CNT_DS_DrNumSectsRead(osar,drive)
ds.ODriveSectorWrites [osar=x][drive=y]	sectors written from drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters SectorsWritten	CNT_DS_DrNumSectsWrit(os ar,drive)
ds.ODriveKBReads [osar=x][drive=y]	Kilobytes read from drive x and osar y, or across all drives and osars if no params specified.		

Soft Report Symbol	Definition	Counter	Mapping to external variable
ds.ODriveKBWrites [osar=x][drive=y]	Kilobytes written to drive x and osar y, or across all drives and osars if no params specified.		
ds.ODriveReadOps [osar=x][drive=y]	read operations on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters Reads	CNT_DS_DrNumReads(osar, drive)
ds.ODriveWriteOps [osar=x][drive=y]	write operations on drive x and osar y, or across all drives and osars if no params specified	struct counter, struct Drive_counters Writes	CNT_DS_DrNumWrites(osar, drive)
ds.PagesCommitted [osar=x][drive=y]	Pages committed to drive x and osar y, or to all drives and osars if no params specified		
ds.PagesDriveHits [osar=x][drive=y]	Pages found in drive, all priorities, on drive x and osar y, or across all drives and osars if no params specified		
ds.PagesDriveHitsH [osar=x][drive=y]	Pages found in drive, all priorities, on drive x and osar y, or across all drives and osars if no params specified		
ds.PagesDriveHitsM [osar=x][drive=y]	Pages found in drive, all priorities, on drive x and osar y, or across all drives and osars if no params specified		

Soft Report Symbol	Definition	Counter	Mapping to external variable
ds.PagesDriveHitsL [osar=x][drive=y]	Pages found in drive, all priorities, on drive x and osar y, or across all drives and osars if no params specified		
ds.PagesCacheHits	total pages migrated from cache or drive	sum of PagesMigrated[2,1,0]	CNT_DS_pages_migrated(0,1,2)
ds.PagesCacheHitsH	# pages of priority 2 migrated from cache or drive	struct counter PagesMigrated[2]	CNT_DS_pages_migrated(2)
ds.PagesCacheHitsM	# pages of priority 1 migrated from cache or drive	struct counter PagesMigrated[1]	CNT_DS_pages_migrated(1)
ds.PagesCacheHitsL	# pages of priority 0 migrated from cache or drive	struct counter PagesMigrated[0]	CNT_DS_pages_migrated(0)
ds.PagesMigrated	total pages migrated from cache or drive	sum of PagesMigrated[2,1,0]	CNT_DS_pages_migrated(0,1,2)
ds.PagesMigratedH	# pages of priority 2 migrated from cache or drive	struct counter PagesMigrated[2]	CNT_DS_pages_migrated(2)
ds.PagesMigratedM	# pages of priority 1 migrated from cache or drive	struct counter PagesMigrated[1]	CNT_DS_pages_migrated(1)
ds.PagesMigratedL	# pages of priority 0 migrated from cache or drive	struct counter PagesMigrated[0]	CNT_DS_pages_migrated(0)
ds.PrefetchCalls	Prefetch calls counted by document services		
ds.WRQ_Removes	Write queue removal requests.		

Event Logging Abstract (ELA) Events

The following table lists the names and short descriptions of ELA event names of remote procedures for which you can collect data on both server and client systems (client procedures are identified with a suffix of 'c'):

ELA Event Name	Description
BES/BESc	Batch Entry Service RPCs
CSM/CSMc	Cache Services Manager RPCs
DOC/DOCc	Document Services RPCs
INX/INXc	Index Services RPCs
PSM/PSMc	Print Services Manager RPCs
PQM/PQMc	Printer Service RPCs
SEC/SECc	Security Service RPCs
WQM/WQMc	WorkFlo Queue Manager RPCs
WQS/WQSc	WorkFlo Services RPCs

File System counters

Soft Report Symbol	Counter	Mapping to an external variable
fileSYS.reads	fs_stat.rds	MPE only
fileSYS.writes	fs_stat.wts	MPE only
fileSYS.rd_miss_rand	fs_stat.rd_miss_rand	MPE only
fileSYS.rd_miss_seq	fs_stat.rd_miss_seq	MPE only
fileSYS.wt_miss_rand	fs_stat.wt_miss_rand	MPE only
fileSYS.wt_miss_seq	fs_stat.wt_miss_seq	MPE only
fileSYS.vmm_open	fs_stat.fss_vmm_open	FDOS only
fileSYS.vmm_close	fs_stat.fss_vmm_close	FDOS only
fileSYS.vmm_read	fs_stat.fss_vmm_read	FDOS only
fileSYS.vmm_write	fs_stat.fss_vmm_write	FDOS only
fileSYS.tot_open	fs_stat.fss_tot_open	FDOS only
fileSYS.tot_close	fs_stat.fss_tot_close	FDOS only
fileSYS.tot_read	fs_stat.fss_tot_fread	FDOS only
fileSYS.tot_write	fs_stat.fss_tot_fwrite	FDOS only
fileSYS.tot_xread	fs_stat.fss_tot_xread	FDOS only
fileSYS.tot_xwrite	fs_stat.fss_tot_xwrite	FDOS only
fileSYS.loc_open	fs_stat.fss_loc_open	FDOS only
fileSYS.loc_close	fs_stat.fss_loc_close	FDOS only
fileSYS.loc_read	fs_stat.fss_loc_fread	FDOS only
fileSYS.loc_write	fs_stat.fss_loc_fwrite	FDOS only
fileSYS.rem_open	fs_stat.fss_rem_open	FDOS only
fileSYS.rem_close	fs_stat.fss_rem_close	FDOS only
fileSYS.rem_read	fs_stat.fss_rem_fread	FDOS only
fileSYS.rem_write	fs_stat.fss_rem_fwrite	FDOS only
fileSYS.cache_read	fs_stat.fss_cache_read	FDOS only
fileSYS.in_cache_hit	fs_stat.fss_in_cache_hit	FDOS only
fileSYS.cl_cache_hit	fs_stat.fss_cl_cache_hit	FDOS only
fileSYS.rdahead	fs_stat.fss_rdahead	FDOS only
fileSYS.text_read	fs_stat.fss_text_read	FDOS only
fileSYS.verups_rcvd	fs_stat.fss_verups_rcvd	FDOS only
fileSYS.verups_init	fs_stat.fss_verups_init	FDOS only
fileSYS.verups_fail	fs_stat.fss_fail_verup	FDOS only

Soft Report Symbol	Counter	Mapping to an external variable
filesystems.depshifts_rcvd	fs_stat.fss_depshifts_rcvd	FDOS only
filesystems.depshifts_init	fs_stat.fss_depshifts_init	FDOS only
filesystems.sync_sent	fs_stat.fss_sync_sent	FDOS only
filesystems.mount_waste	fs_stat.fss_mount_waste	FDOS only
filesystems.stat_cost	fs_stat.fss_stat_cost	FDOS only
filesystems.fail_sync_norec	fs_stat.fss_failsr	FDOS only
filesystems.fail_sync_nobuf	fs_stat.fss_failb	FDOS only
filesystems.overload_freq	fs_stat.fss_overload_freq	FDOS only
filesystems.overload_max	fs_stat.fss_overload_max	FDOS only
filesystems.redirect	fs_stat.fss_redirects	FDOS only
filesystems.iaction_retry	fs_stat.fss_iaction_retry	FDOS only
filesystems.create_retry	fs_stat.fss_create_retry	FDOS only
filesystems.dep_heur	fs_stat.fss_dep_heur	FDOS only
filesystems.iget_loop	fs_stat.fss_x1	FDOS only
filesystems.iget_wait	fs_stat.fss_x2	FDOS only

Miscellaneous Static Variables counters

Soft Report Symbol	Definition	Counter
ic.stanum	station number where perf_mon was run	cap.station_num
ic.t	capture time delta set in perf_report	cap.time
ic.ndisks	number of disks on capture system	n_disks
ic.nqueues	number of workflo queues on capture system	n_queues
ic.nevents	number of ela major events on capture system	n_events
ic.nmkfdbs	number of mkf databases on capture system	n_mkf_databases
ic.sv_root	if capture server is a RootServer	bit_RootServer
ic.sv_boot	if capture server is a BootServer	bit_BootServer
ic.sv_file	if capture server is a FileServer	bit_FileServer
ic.sv_index	if capture server is a IndexServer	bit_IndexServer
ic.sv_doc	if capture server is a DocServer	bit_DocServer
ic.sv_batch	if capture server is a BatchServer	bit_BatchServer

Soft Report Symbol	Definition	Counter
ic.sv_cache	if capture server is a CacheServer	bit_CacheServer
ic.sv_print	if capture server is a PrintServServer	bit_PrintServServer
ic.sv_osar	if capture server is a OsarServer	bit_OsarServer
ic.sv_skf	if capture server is a SKFServer	bit_SKFServer
ic.sv_wfl	if capture server is a WorkFloServer	bit_WorkFloServer
ic.sv_dtars	if capture server is a DTARSServer	bit_DTARSServer
ic.sv_nch	if capture server is a NCHServer	bit_NCHServer
ic.sv_sort	if capture server is a SortServer	bit_SortServer

MKF counters

Soft Report Symbol	Definition	Counter	Mapping to external variable
mkf.find[BaseFile=x]	find operation on the database	MKF_FIND	See MKF.definitions
mkf.sop_find[BaseFile=x]	find on the database that occurred in a single operation	MKF_SOP_FIND	See MKF.definitions
mkf.insert[BaseFile=x]	insert operation on the database	MKF_INSERT	See MKF.definitions
mkf.sop_insert[BaseFile=x]	insert on the database that occurred in a single operation	MKF_SOP_INSERT	See MKF.definitions
mkf.update[BaseFile=x]	update operation on the database	MKF_UPDATE	See MKF.definitions
mkf.delete[BaseFile=x]	delete operation on the database	MKF_DELETE	See MKF.definitions
mkf.set_position[BaseFile=x]	call to set forward or backward find on database	MKF_SET_POSITION	See MKF.definitions
mkf.begin_trans[BaseFile=x]	There are transactions which provide locking around the database operations.	MKF_BEGIN_TRANS	See MKF.definitions

Soft Report Symbol	Definition	Counter	Mapping to external variable
mkf.end_trans[BaseFile=x]	There are transactions which provide locking around the database operations.	MKF_END_TRANS	See MKF.definitions
mkf.abort_trans[BaseFile=x]	There are transactions which provide locking around the database operations.	MKF_ABORT_TRANS	See MKF.definitions
mkf.short_start[BaseFile=x]	A short transaction is one whose buffers fit in the buffer pool. It is very quick and requires no IO.	MKF_SHORT_START	See MKF.definitions
mkf.short_compl[BaseFile=x]	A short transaction is one whose buffers fit in the buffer pool. It is very quick and requires no IO.	MKF_SHORT_COMPL	See MKF.definitions
mkf.short_abort[BaseFile=x]	A short transaction is one whose buffers fit in the buffer pool. It is very quick and requires no IO.	MKF_SHORT_ABORT	See MKF.definitions
mkf.long_start[BaseFile=x]	Long transactions require more buffers and don't fit in the buffer pool so they require IO. A lot of these is not good because IO is expensive.	MKF_LONG_START	See MKF.definitions

Soft Report Symbol	Definition	Counter	Mapping to external variable
mkf.long_compl[BaseFile=x]	Long transactions require more buffers and don't fit in the buffer pool so they require IO. A lot of these is not good because IO is expensive.	MKF_LONG_COMPL	See MKF.definitions
mkf.long_abort[BaseFile=x]	Long transactions require more buffers and don't fit in the buffer pool so they require IO. A lot of these is not good because IO is expensive.	MKF_LONG_ABORT	See MKF.definitions
mkf.short->long[BaseFile=x]	Sometimes a short transaction is converted to a long one, short->long	MKF_SHORT2LONG	See MKF.definitions
mkf.short->longok[BaseFile=x]	Whether short->long transaction conversion was successful	MKF_SHORT2LONGOK	See MKF.definitions
mkf.deadlocks[BaseFile=x]	When two transactions are both locked on each others buffers so one transaction must be aborted to start over. A high number of these is inefficient and occurs when too many maximum concurrent transactions are being used or when the database is very small and the few transactions access the same blocks alot.	MKF_DEADLOCKS	See MKF.definitions

Soft Report Symbol	Definition	Counter	Mapping to external variable
mkf.readblock[BaseFile=x]	blocks read from the B-tree into the buffer pool	MKF_READBLOCK	See MKF.definitions
mkf.cachehits[BaseFile=x]	times the blocks were found in the buffer pool already is called cache hits	MKF_CACHEHITS	See MKF.definitions
mkf.buffer[BaseFile=x]	buffer pool	MKF_BUFFERS	See MKF.definitions
mkf.aij_read[BaseFile=x]	after image journal reads	MKF_AIJ_READ	See MKF.definitions
mkf.b_aij_read[BaseFile=x]	after image journal blocks read	MKF_B_AIJ_READ	See MKF.definitions
mkf.aij_write[BaseFile=x]	after image journal writes	MKF_AIJ_WRITE	See MKF.definitions
mkf.b_aij_write[BaseFile=x]	after image journal blocks written	MKF_B_AIJ_WRITE	See MKF.definitions
mkf.bij_read[BaseFile=x]	before image journal reads	MKF_BIJ_READ	See MKF.definitions
mkf.b_bij_read[BaseFile=x]	before image journal blocks read	MKF_B_BIJ_READ	See MKF.definitions
mkf.bij_write[BaseFile=x]	before image journal writes	MKF_BIJ_WRITE	See MKF.definitions
mkf.b_bij_write[BaseFile=x]	before image journal blocks written	MKF_B_BIJ_WRITE	See MKF.definitions
mkf.data_read[BaseFile=x]	database reads	MKF_DATA_READ	See MKF.definitions
mkf.data_write[BaseFile=x]	database blocks read	MKF_DATA_WRITE	See MKF.definitions
mkf.b_data_read[BaseFile=x]	database writes	MKF_B_DATA_READ	See MKF.definitions
mkf.b_data_write[BaseFile=x]	database blocks written	MKF_B_DATA_WRITE	See MKF.definitions
mkf.shutdown[BaseFile=x]	database shutdown calls	MKF_SHUTDOWN	See MKF.definitions
mkf.open[BaseFile=x]	occur once per startup	MKF_OPEN	See MKF.definitions
mkf.close[BaseFile=x]	occur once per startup	MKF_CLOSE	See MKF.definitions

Soft Report Symbol	Definition	Counter	Mapping to external variable
mkf.open_cursor[BaseFile=x]	occur once per startup	MKF_OPEN_CURSOR	See MKF.definitions
mkf.close_cursor[BaseFile=x]	occur once per startup	MKF_CLOSE_CURSOR	See MKF.definitions
mkf.get_item_number[BaseFile=x]	occur once per startup	MKF_GET_ITEM_NUM	See MKF.definitions
mkf.bind[BaseFile=x]	occur once per startup	MKF_BIND	See MKF.definitions
mkf.open_description[BaseFile=x]	MKF_ddl calls only	MKF_OPEN_DESC	See MKF.definitions
mkf.close_description[BaseFile=x]	MKF_ddl calls only	MKF_CLOSE_DESC	See MKF.definitions
mkf.get_parameters[BaseFile=x]	MKF_ddl calls only	MKF_GET_PARAM	See MKF.definitions
mkf.set_parameters[BaseFile=x]	MKF_ddl calls only	MKF_SET_PARAM	See MKF.definitions
mkf.get_file[BaseFile=x]	MKF_ddl calls only	MKF_GET_FILE	See MKF.definitions
mkf.set_file[BaseFile=x]	MKF_ddl calls only	MKF_SET_FILE	See MKF.definitions
mkf.get_record[BaseFile=x]		MKF_GET_RECORD	See MKF.definitions
mkf.set_record[BaseFile=x]		MKF_SET_RECORD	See MKF.definitions
mkf.get_item[BaseFile=x]		MKF_GET_ITEM	See MKF.definitions
mkf.set_item[BaseFile=x]		MKF_SET_ITEM	See MKF.definitions
mkf.get_aij_bsn[BaseFile=x]		MKF_GET_AIJ_BSN	See MKF.definitions
mkf.update_avsp[BaseFile=x]		MKF_UPDATE_AVSP	See MKF.definitions
mkf.transaction_state[BaseFile=x]		MKF_TRANS_STATE	See MKF.definitions
mkf.set_abortmode[BaseFile=x]		MKF_SET_ABORTMODE	See MKF.definitions
mkf.getbuffer[BaseFile=x]	if readblock calls don't find block in cache, getbuffer gets a buffer.	MKF_GET_BUFFER	See MKF.definitions
mkf.divest[BaseFile=x]	divests and divest completely releases the interlocks on the buffer.	MKF_DIVEST	See MKF.definitions

Soft Report Symbol	Definition	Counter	Mapping to external variable
mkf.divestcompletely[BaseFile=x]	divests and divest completely releases the interlocks on the buffer.	MKF_DIVESTCOMPL	See MKF.definitions
mkf.search[BaseFile=x]	search is the call to walk the B-tree	MKF_SEARCH	See MKF.definitions
mkf.searchfirst[BaseFile=x]	first try is when the find is complete by the end of the search without having to split	MKF_SEARCHFIRST	See MKF.definitions
mkf.searchupdate[BaseFile=x]	for update is when the B-tree search is done to update the B-tree	MKF_SEARCHUPDATE	See MKF.definitions
mkf.searchtable[BaseFile=x]	search table is the number of tables searched in the B-tree	MKF_SEARCHTABLE	See MKF.definitions
mkf.insertkey[BaseFile=x]	insert key and delete key indicate operations to the B-tree	MKF_INSERTKEY	See MKF.definitions
mkf.deletekey[BaseFile=x]	insert key and delete key indicate operations to the B-tree	MKF_DELETEKEY	See MKF.definitions
mkf.mergecalls[BaseFile=x]	merge calls occur when partially full tables are to be merged	MKF_MERGECALL	See MKF.definitions
mkf.tablemerges[BaseFile=x]	table merges are the number that are actually merged	MKF_TABLEMERGE	See MKF.definitions
mkf.tablesplits[BaseFile=x]	table splits are when a table splits because the key did not fit	MKF_TABLESPLIT	See MKF.definitions

Network counters

Soft Report Symbol	Definition	Counter	Mapping to external variable
net.SPPpktsout	Sequenced packet protocol outgoing packets- This is what's used for bulk data transfer (images and such)	net_stat.no_stat.sppPktCount	FDOS only
net.SPPpktsin	Sequenced packet protocol incoming packets- This is what's used for bulk data transfer (images and such)	net_stat.ni_stat.sppPktCount	FDOS only
net.DGPpktsin	DGP = Datagram protocol incoming packets - This was used in FDOS	net_stat.ni_stat.dgpPktCount	FDOS only
net.DGPpktsout	DGP = Datagram protocol outgoing packets- This was used in FDOS	net_stat.no_stat.dgpPktCount	FDOS only
net.ERRpktsin	Error = Error packet incoming packets - Some application errors are reported via this field	net_stat.ni_stat.erpPktCount	FDOS only
net.ERRpktsout	Error = Error packet outgoing packets - Some application errors are reported via this field	net_stat.no_stat.erpPktCount	FDOS only
net.PEPpktsin	PEP = Packet exchange protocol incoming packets- This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.ni_stat.pepPktCount	FDOS only
net.PEPpktsout	PEP = Packet exchange protocol outgoing packets - This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.no_stat.pepPktCount	FDOS only

Soft Report Symbol	Definition	Counter	Mapping to external variable
net.RIPpktsin	RIP = Routing Information protocol incoming packets- Any routing packets would be reported here	net_stat.ni_stat.ripPktCount	FDOS only
net.RIPpktsout	RIP = Routing Information protocol outgoing packets- Any routing packets would be reported here	net_stat.no_stat.ripPktCount	FDOS only
net.SPPbytesin	Sequenced packet protocol outgoing bytes- This is what's used for bulk data transfer (images and such)	net_stat.no_stat.sppNumberBytes	FDOS only
net.SPPbytesout	Sequenced packet protocol incoming bytes- This is what's used for bulk data transfer (images and such)	net_stat.ni_stat.sppNumberBytes	FDOS only
net.DGPbytesin	DGP = Datagram protocol incoming bytes - This was used in FDOS	net_stat.ni_stat.dgpNumberBytes	FDOS only
net.DGPbytesout	DGP = Datagram protocol outgoing bytes- This was used in FDOS	net_stat.no_stat.dgpNumberBytes	FDOS only
net.ERRbytesin	Error = Error packet incoming bytes - Some application errors are reported via this field	net_stat.ni_stat.erpNumberBytes	FDOS only
net.ERRbytesout	Error = Error packet outgoing bytes - Some application errors are reported via this field	net_stat.no_stat.erpNumberBytes	FDOS only
net.PEPbytesin	PEP = Packet exchange protocol incoming bytes - This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.ni_stat.pepNumberBytes	FDOS only

Soft Report Symbol	Definition	Counter	Mapping to external variable
net.PEPbytesout	PEP = Packet exchange protocol outgoing bytes - This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.no_stat.pepNumberBytes	FDOS only
net.RIPbytesin	RIP = Routing Information protocol incoming bytes - Any routing bytes would be reported here	net_stat.ni_stat.ripNumberBytes	FDOS only
net.RIPbytesout	RIP = Routing Information protocol outgoing bytes - Any routing bytes would be reported here	net_stat.no_stat.ripNumberBytes	FDOS only
net.crcErrs		net_stat.ed_stat.numCRCErr	FDOS only
net.FramErrs		net_stat.ed_stat.numFramErr	FDOS only
net.MissErrs		net_stat.ed_stat.numMissErr	FDOS only
net.OverFloErrs		net_stat.ed_stat.numOFloErr	FDOS only
net.RcvBufErrs		net_stat.ed_stat.numBuffErr	FDOS only
net.XTimeErrs		net_stat.ed_stat.numBablErr	FDOS only
net.XBufErrs		net_stat.ed_stat.numXBufErr	FDOS only
net.LostCarErrs		net_stat.ed_stat.numLCarErr	FDOS only
net.LateColErrs		net_stat.ed_stat.numLColErr	FDOS only
net.UFloErrs		net_stat.ed_stat.numUFloErr	FDOS only
net.RtryErrs		net_stat.ed_stat.numRTryErr	FDOS only
net.XRFullErrs		net_stat.ed_stat.numFullXR	FDOS only
net.BadChksum		net_stat.sock_stat.pktsBadChksum	FDOS only
net.NoBCAllow		net_stat.sock_stat.pktsNoBCAllow	FDOS only
net.NoSock		net_stat.sock_stat.pktsNoSocket	FDOS only
net.SockZero		net_stat.sock_stat.pktsSocketZero	FDOS only
net.TotPktsRcvd		net_stat.rip_stat.totalPktsRec	FDOS only
net.RepPktsRcvd		net_stat.rip_stat.numRepPktsRec	FDOS only

Soft Report Symbol	Definition	Counter	Mapping to external variable
net.ReqPktsRcvd		net_stat.rip_stat.numReqPktsRec	FDOS only
net.PktsDisc		net_stat.rip_stat.numPktsDiscard	FDOS only
net.xnsSPPbytesin	Sequenced packet protocol outgoing bytes - This is what is used for bulk data transfer (images and such)	net_stat.xns_stat.erInPktStats.sppNumberBytes	kernel structure
net.xnsSPPbytesout	Sequenced packet protocol incoming bytes - This is what is used for bulk data transfer (images and such)	net_stat.xns_stat.erOutPktStats.sppNumberBytes	kernel structure
net.xnsDGPbytesin	DGP = Datagram protocol incoming bytes - This was used in FDOS	net_stat.xns_stat.erInPktStats.dgpNumberBytes	kernel structure
net.xnsDGPbytesout	DGP = Datagram protocol outgoing bytes - This was used in FDOS	net_stat.xns_stat.erOutPktStats.dgpNumberBytes	kernel structure
net.xnsERRbytesin	Error = Error packet incoming bytes - Some application errors are reported via this field	net_stat.xns_stat.erInPktStats.erpNumberBytes	kernel structure
net.xnsERRbytesout	Error = Error packet outgoing bytes - Some application errors are reported via this field	net_stat.xns_stat.erOutPktStats.erpNumberBytes	kernel structure
net.xnsPEPbytesin	PEP = Packet exchange protocol incoming bytes - This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.xns_stat.erInPktStats.pepNumberBytes	kernel structure
net.xnsPEPbytesout	PEP = Packet exchange protocol outgoing bytes - This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.xns_stat.erOutPktStats.pepNumberBytes	kernel structure

Soft Report Symbol	Definition	Counter	Mapping to external variable
net.xnsRIPbytesin	RIP = Routing Information protocol incoming bytes - Any routing bytes would be reported here	net_stat.xns_stat.erInPktStats.ripNumberBytes	kernel structure
net.xnsRIPbytesout	RIP = Routing Information protocol outgoing bytes - Any routing bytes would be reported here	net_stat.xns_stat.erOutPktStats.ripNumberBytes	kernel structure
net.xnsSPPpktsin	Sequenced packet protocol outgoing packets- This is what is used for bulk data transfer (images and such)	net_stat.xns_stat.erInPktStats.sppPktCount	kernel structure
net.xnsSPPpktsout	Sequenced packet protocol incoming packets- This is what is used for bulk data transfer (images and such)	net_stat.xns_stat.erOutPktStats.sppPktCount	kernel structure
net.xnsDGPpktsin	DGP = Datagram protocol incoming packets - This was used in FDOS	net_stat.xns_stat.erInPktStats.dgpPktCount	kernel structure
net.xnsDGPpktsout	DGP = Datagram protocol outgoing packets- This was used in FDOS	net_stat.xns_stat.erOutPktStats.dgpPktCount	kernel structure
net.xnsERRpktsin	Error = Error packet incoming packets - Some application errors are reported via this field	net_stat.xns_stat.erInPktStats.erpPktCount	kernel structure
net.xnsERRpktsout	Error = Error packet outgoing packets - Some application errors are reported via this field	net_stat.xns_stat.erOutPktStats.erpPktCount	kernel structure
net.xnsPEPpktsin	PEP = Packet exchange protocol incoming packets- This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.xns_stat.erInPktStats.pepPktCount	kernel structure

Soft Report Symbol	Definition	Counter	Mapping to external variable
net.xnsPEPpktsout	PEP = Packet exchange protocol outgoing packets - This would show the Clearinghouse traffic for locating a server or asynchronous responses for doc services	net_stat.xns_stat.erOutPktStats.pepPktCount	kernel structure
net.xnsRIPpktsin	RIP = Routing Information protocol incoming packets- Any routing packets would be reported here	net_stat.xns_stat.erInPktStats.ripPktCount	kernel structure
net.xnsRIPpktsout	RIP = Routing Information protocol outgoing packets- Any routing packets would be reported here	net_stat.xns_stat.erOutPktStats.ripPktCount	kernel structure
net.tcppktsin	packets received by device	net_stat.tcp_stat.tcps_rcvpack	kernel structure
net.tcppktsout	packets received by device	net_stat.tcp_stat.tcps_sndpack	kernel structure
net.tcpbytesin	bytes received by device	net_stat.tcp_stat.tcps_rcvbyte	kernel structure
net.tcpbytesout	bytes transmitted by device	net_stat.tcp_stat.tcps_sndbyte	kernel structure
net.tcppktsrexmts	packets retransmitted	net_stat.tcp_stat.tcps_sndremitpack	kernel structure
net.tcppktoutoforder	out of order packets received	net_stat.tcp_stat.tcps_rcvloopack	kernel structure
net.tcpconnattempts	connection attempts	net_stat.tcp_stat.tcps_connattempts	kernel structure
net.tcpconnaccepts	connection accepts	net_stat.tcp_stat.tcps_accepts	kernel structure
net.tcpconns	connections made	net_stat.tcp_stat.tcps_connections	kernel structure
net.tcpconncloses	connections closed	net_stat.tcp_stat.tcps_closed	kernel structure
net.tcpkeepdrops	connections dropped in keepalive	net_stat.tcp_stat.tcps_keepdrops	kernel structure
net.tcptimeoutdrops	connections dropped in retransmit timeout	net_stat.tcp_stat.tcps_timeoutdrop	kernel structure
net.tcpembconndrops	embryonic connections dropped	net_stat.tcp_stat.tcps_conndrops	kernel structure

OSAR Server counters

Counter	Definition
os.ArmMoves[osar=x]	The number of robotic arm moves made on OSAR x. Multiple moves may be required to load or unload a platter. If no parameters are specified, across all osars.
os.OpLoads[osar=x]	The number of platter loads made by the operator on OSAR x. If no parameters are specified, across all OSARs.
os.OpUnloads[osar=x]	The number of platter unloads made by the operator on OSAR x. If no parameters are specified, across all OSARs.

PPM counters

Soft Report Symbol	Definition	Counter	Mapping to an external variable
ppm.Processes	PPM process starts or server request handler start ups. This number is usually high at the start up of the application but should approach 0 as steady state is reached. If the number spikes up after steady state, it may indicate that processes are being killed and restarted.	counter_data.Processes	CNT_PPM_Process
ppm.NoProcesses	when no service request handlers are available because all are in use. May indicate that the number of handlers in serverConfig is set too low.	counter_data.NoProcesses	CNT_PPM_NoProcess

RPC counters

DOC counters

Property	Description
Allocatelds	The range of contiguous image IDs allocated per system base.
BatchClose	The number of batches closed.
BatchCreate	The number of batches created.
BatchWrite	The number of batches written to media.
DeleteDocuments	The number of documents deleted.
GetServerInfo	Network address and default cache name for a specific storage library server.
Logoff	Major Code: Identifies the service in the Event Logging Abstract (ELA). The major numbers are listed in the /fnsw/lib/perf/ela/elacodes file. Max Minor: The maximum number of minor events (RPCs) within a service. This number is defined in the /fnsw/lbi/perf/ela/elacodes file as the second number on the event line.
Logon	Major Code: Identifies the service in the Event Logging Abstract (ELA). The major numbers are listed in the /fnsw/lib/perf/ela/elacodes file. Max Minor: The maximum number of minor events (RPCs) within a service. This number is defined in the /fnsw/lbi/perf/ela/elacodes file as the second number on the event line.
ModifyDocumentAt	Num Minors:

System counters

Soft Report Symbol	Definition	Counter	Mapping to an external variable
sys.idle	clock ticks whenever the wait process is the current running process	sys_stat.sysinfo.cpu[0]	/usr/include/sys/sysinfo.h structure cpu[0]
sys.kernel	clock ticks when current process is executing in the kernel mode	sys_stat.sysinfo.cpu[2]	/usr/include/sys/sysinfo.h structure cpu[2]
sys.user	clock ticks when current process is executing in the user mode	sys_stat.sysinfo.cpu[1]	/usr/include/sys/sysinfo.h structure cpu[1]
sys.wait	clock ticks when the current process is waiting for a block i/o request to complete	sys_stat.sysinfo.cpu[3]	/usr/include/sys/sysinfo.h structure cpu[3]

Soft Report Symbol	Definition	Counter	Mapping to an external variable
sys.swapins	system requests initiating a transfer to the swap device	sys_stat.sysinfo.swapin	FDOS only /usr/include/sys/sysinfo.h structure swapin
sys.swapouts	system requests initiating a transfer from the swap device	sys_stat.sysinfo.swapout	FDOS only/usr/include/sys/sysinfo.h structure swapout
sys.sysopen	file system opens	fs_stat.fss_sys_open	FDOS only
sys.sysclose	file system closes	fs_stat.fss_sys_close	FDOS only
sys.procs	current processes	sys_stat.sysinfo.numprocs	MPE only
sys.pready	processes in the ready queue	sys_stat.sysinfo.pready	MPE only
sys.pcreates	processes created	sys_stat.sysinfo.pcreates	MPE only
sys.plaunches	process launches	sys_stat.sysinfo.plaunches	MPE only
sys.breads	read operations from block devices	sys_stat.sysinfo.bread	/usr/include/sys/sysinfo.h structure bread
sys.creads	bytes transferred by read system calls	sys_stat.sysinfo.readch	OLI or FDOS only /usr/include/sys/sysinfo.h structure readch
sys.cwrite	bytes transferred by write system calls	sys_stat.sysinfo.writch	OLI or FDOS only /usr/include/sys/sysinfo.h structure writch
sys.readch	bytes transferred by read system calls	sys_stat.sysinfo.readch	not Oli or FDOS /usr/include/sys/sysinfo.h structure readch
sys.writch	bytes transferred by write system calls	sys_stat.sysinfo.writch	not Oli or FDOS /usr/include/sys/sysinfo.h structure writch
sys.lread	logical read requests issued by the system to block devices	sys_stat.sysinfo.lread	/usr/include/sys/sysinfo.h structure lread
sys.sysread	system read calls	sys_stat.sysinfo.sysread	/usr/include/sys/sysinfo.h structure sysread

Soft Report Symbol	Definition	Counter	Mapping to an external variable
sys.bwrite	write operations to block devices	sys_stat.sysinfo.bwrite	/usr/include/sys/sysinfo.h structure bwrite
sys.lwrite	logical write requests issued by the system to block devices	sys_stat.sysinfo.lwrite	/usr/include/sys/sysinfo.h structure lwrite
sys.syswrite	system write calls	sys_stat.sysinfo.syswrite	/usr/include/sys/sysinfo.h structure syswrite
sys.bswapin	bytes of data transferred to the swap device	sys_stat.sysinfo.bswapin	FDOS only /usr/include/sys/sysinfo.h structure bswapin
sys.bswapout	bytes of data transferred from the swap device	sys_stat.sysinfo.bswapout	FDOS only /usr/include/sys/sysinfo.h structure bswapout
sys.pswitches	process switches	sys_stat.sysinfo.pswitch	/usr/include/sys/sysinfo.h structure pswitch
sys.calls	system calls	sys_stat.sysinfo.syscall	/usr/include/sys/sysinfo.h structure syscall
sys.forks	forks	sys_stat.sysinfo.sysfork	/usr/include/sys/sysinfo.h structure sysforkl
sys.execs	system execs	sys_stat.sysinfo.sysexec	/usr/include/sys/sysinfo.h structure sysexe
sys.runque	cumulative total, at one second intervals, of the processes ready to run	sys_stat.sysinfo.runque	/usr/include/sys/sysinfo.h structure runque
sys.runocc	times runque was updated	sys_stat.sysinfo.runocc	/usr/include/sys/sysinfo.h structure runocc
sys.swpque	cumulative total, at 1 second intervals, of processes waiting to be swapped in	sys_stat.sysinfo.swpque	/usr/include/sys/sysinfo.h structure swpque
sys.swpocc	times swpque was updated	sys_stat.sysinfo.swpocc	/usr/include/sys/sysinfo.h structure swpocc
sys.sema	semaphore operations	sys_stat.sysinfo.sema	/usr/include/sys/sysinfo.h structure sema

Soft Report Symbol	Definition	Counter	Mapping to an external variable
sys.msg	message sending and receiving activities	sys_stat.sysinfo.msg	/usr/include/sys/sysinfo.h structure msg
sys.rcvint	hardware interrupts on the receiver	sys_stat.sysinfo.rcvint	/usr/include/sys/sysinfo.h structure rcvint
sys.xmtint	hardware interrupts on the transmitter	sys_stat.sysinfo.xmtint	/usr/include/sys/sysinfo.h structure xmtint
sys.mdmint	hardware interrupts on the modem	sys_stat.sysinfo.mdmint	/usr/include/sys/sysinfo.h structure mdmint
sys.rawch	characters in the raw queue	sys_stat.sysinfo.rawch	/usr/include/sys/sysinfo.h structure rawch
sys.outh	characters in the output queue	sys_stat.sysinfo.outh	/usr/include/sys/sysinfo.h structure outh
sys.phread	read requests issued by the system to raw devices	sys_stat.sysinfo.phread	/usr/include/sys/sysinfo.h structure phread
sys.phwrite	write requests issued by the system to raw devices	sys_stat.sysinfo.phwrite	/usr/include/sys/sysinfo.h structure phwrite
sys.canch	characters in the canonical queue	sys_stat.sysinfo.canch	/usr/include/sys/sysinfo.h structure canch
sys.dirblk	directory block reads	sys_stat.sysinfo.dirblk	/usr/include/sys/sysinfo.h structure dirblk
sys.kprocscreated	kernel processes created	sys_stat.sysinfo.ksched	AIX only /usr/include/sys/sysinfo.h structure ksched
sys.kprocoverflow	times the creation of a kernel process fails because the max forks or processes has been reached	sys_stat.sysinfo.koverf	AIX only /usr/include/sys/sysinfo.h structure koverf
sys.kzombies	times the kernel process has become a zombie	sys_stat.sysinfo.kexit	AIX only /usr/include/sys/sysinfo.h structure kexit

Soft Report Symbol	Definition	Counter	Mapping to an external variable
sys.remreadreqs	remote read requests	sys_stat.sysinfo.rbread	AIX only /usr/include/sys/sysinfo.h structure rbread
sys.remreadsfromcache	reads from remote cache	sys_stat.sysinfo.rcread	AIX only /usr/include/sys/sysinfo.h structure rcread
sys.remwritereqs	remote write requests	sys_stat.sysinfo.rbwrt	AIX only /usr/include/sys/sysinfo.h structure rbwrt
sys.remwritesfromcache	cached remote writes	sys_stat.sysinfo.rcwrt	AIX only /usr/include/sys/sysinfo.h structure rcwrt
sys.deviceintrpts	device interrupts	sys_stat.sysinfo.devintrs	AIX only /usr/include/sys/sysinfo.h structure devintrs
sys.softwareintrpts	software interrupts	sys_stat.sysinfo.softintrs	AIX only /usr/include/sys/sysinfo.h structure softintrs
sys.traps	traps	sys_stat.sysinfo.traps	AIX only /usr/include/sys/sysinfo.h structure traps

Virtual Memory counters

Soft Report Symbol	Definition	Counter	Mapping to external variable
vmm.pagefaults	page faults	vmm_stat.pgexct	AIX only /usr/include/sys/vminfo.h structure pgexct
vmm.reclaims	page reclaims	vmm_stat.pgrclm	AIX only /usr/include/sys/vminfo.h structure pgrclm
vmm.lockmisses	lockmisses	vmm_stat.lockexct	AIX only /usr/include/sys/vminfo.h structure lockexct

Soft Report Symbol	Definition	Counter	Mapping to external variable
vmm.backtracks	backtracks	vmm_stat.backtrks	AIX only /usr/include/sys/vminfo.h structure backtrks
vmm.pageins	pages paged in	vmm_stat.pageins	AIX only /usr/include/sys/vminfo.h structure pageins
vmm.pageouts	pages paged out	vmm_stat.pageouts	AIX only /usr/include/sys/vminfo.h structure pageouts
vmm.pageinsfrompgspc	page ins from paging space	vmm_stat.pgspgins	AIX only /usr/include/sys/vminfo.h structure pgspgins
vmm.pageoutsfrompgspc	page outs from paging space	vmm_stat.pgspgouts	AIX only /usr/include/sys/vminfo.h structure pgspgouts
vmm.startio	start I/Os	vmm_stat.numios	AIX only /usr/include/sys/vminfo.h structure numios
vmm.iosdone	iodones	vmm_stat.numiodone	AIX only /usr/include/sys/vminfo.h structure numiodone
vmm.zerofills	zero filled pages	vmm_stat.zerofills	AIX only /usr/include/sys/vminfo.h structure zerofills
vmm.execfills	exec filled pages	vmm_stat.exfills	AIX only /usr/include/sys/vminfo.h structure exfills
vmm.pagescans	page scans by clock	vmm_stat.scans	AIX only /usr/include/sys/vminfo.h structure scans
vmm.clockcycles	clock hand cycles	vmm_stat.cycles	AIX only /usr/include/sys/vminfo.h structure cycles

Soft Report Symbol	Definition	Counter	Mapping to external variable
vmm.pgsteals	page steals	vmm_stat.pgsteals	AIX only /usr/include/sys/vminfo.h structure pgsteals
vmm.freewaits	free frame waits	vmm_stat.freewts	AIX only /usr/include/sys/vminfo.h structure freewts
vmm.extendwaits	extend XPT waits	vmm_stat.extendwts	AIX only /usr/include/sys/vminfo.h structure extendwts
vmm.pendiowaits	pending I/O waits	vmm_stat.pendiowts	AIX only /usr/include/sys/vminfo.h structure pendiowts
vmm.pings	ping-pongs, source to alias	vmm_stat.pings	AIX only /usr/include/sys/vminfo.h structure pings
vmm.pongs	ping-pongs, alias to source	vmm_stat.pongs	AIX only /usr/include/sys/vminfo.h structure pongs
vmm.pangs	ping-pongs, alias to alias	vmm_stat.pangs	AIX only /usr/include/sys/vminfo.h structure pangs
vmm.wpongs	ping-pongs, alias page delete	vmm_stat.wpongs	AIX only /usr/include/sys/vminfo.h structure wpongs
vmm.dpongs	ping-pongs, alias page writes	vmm_stat.dpongs	AIX only /usr/include/sys/vminfo.h structure dpongs
vmm.cacheflushes	ping-pong cache flushes	vmm_stat.cachef	AIX only /usr/include/sys/vminfo.h structure cachef
vmm.cacheinvalids	ping-pong cache invalidates	vmm_stat.cachei	AIX only /usr/include/sys/vminfo.h structure cachei
vmm.pageins	See Olivetti kernel definitions	vmm_stat.v_pgin	Olivetti only

Soft Report Symbol	Definition	Counter	Mapping to external variable
vmm.pageouts	See Olivetti kernel definitions	vmm_stat.v_pgout	Olivetti only
vmm.pageinsfrompgspc	See Olivetti kernel definitions	vmm_stat.v_pgpgin	Olivetti only
vmm.pageoutsfrompgspc	See Olivetti kernel definitions	vmm_stat.v_pgpgout	Olivetti only
vmm.swapins	See Olivetti kernel definitions	vmm_stat.v_swpin	Olivetti only
vmm.swapouts	See Olivetti kernel definitions	vmm_stat.v_swput	Olivetti only
vmm.pgswapins	See Olivetti kernel definitions	vmm_stat.v_pswpin	Olivetti only
vmm.pgswapouts	See Olivetti kernel definitions	vmm_stat.v_pswput	Olivetti only
vmm.pfaults	See Olivetti kernel definitions	vmm_stat.v_pfault	Olivetti only
vmm.vfaults	See Olivetti kernel definitions	vmm_stat.v_vfault	Olivetti only
vmm.pagesize		lvmm_stat.page_size	FDOS only
vmm.cputype		lvmm_stat.cpu_type	FDOS only
vmm.pagescore		lvmm_stat.core_total	FDOS only
vmm.pagesfree		lvmm_stat.coremap_free	FDOS only
vmm.pagesshared		lvmm_stat.shared_total	FDOS only
vmm.pagessharedfree		lvmm_stat.page_size	FDOS only
vmm.max_pagesused		lvmm_stat.coremap_used_max	FDOS only
vmm.min_pagesfree		lvmm_stat.coremap_free_min	FDOS only
vmm.max_pagesshared		lvmm_stat.shmap_used_max	FDOS only
vmm.min_pagesshared		lvmm_stat.shmap_free_min	FDOS only
vmm.shmem_req		lvmm_stat.shmem_req	FDOS only
vmm.shmem_ret		lvmm_stat.shmem_ret	FDOS only
vmm.stack_grow		lvmm_stat.stack_grow	FDOS only
vmm.proc_exit		lvmm_stat.proc_exit	FDOS only

Soft Report Symbol	Definition	Counter	Mapping to external variable
vmm.absloads		lvmm_stat.absload	FDOS only
vmm.absunloads		lvmm_stat.absunload	FDOS only
vmm.abslinks		lvmm_stat.abslink	FDOS only
vmm.absunlinks		lvmm_stat.absunlink	FDOS only
vmm.absswapins		lvmm_stat.absswapin	FDOS only
vmm.absswapouts		lvmm_stat.absswapout	FDOS only
vmm.rswapins		lvmm_stat.rswapin	FDOS only
vmm.rswapouts		lvmm_stat.rswapout	FDOS only
vmm.rbswapins		lvmm_stat.rbswapin	FDOS only
vmm.rbswapouts		lvmm_stat.rbswapout	FDOS only

WorkFlo counters

Soft Report Symbol	Definition	Counter	Mapping to external variable
wfl.CreateQueue [Queue=x]	calls to create a WorkFlo queue	WQS_create_queue_func	See WQS definitions
wfl.DeleteQueue [Queue=x]	calls to delete a WorkFlo queue	WQS_delete_queue_func	See WQS definitions
wfl.GetQueueDesc [Queue=x]	calls to get queue description	WQS_get_queue_desc_func	See WQS definitions
wfl.UpdateQueue [Queue=x]	calls to update a queue	WQS_update_queue_func	See WQS definitions
wfl.OpenQueue [Queue=x]	calls to open a queue	WQS_open_queue_func	See WQS definitions
wfl.CloseQueue [Queue=x]	calls to close a queue	WQS_close_queue_func	See WQS definitions
wfl.CountEntries [Queue=x]	calls to count the entries in a queue	WQS_count_entries_func	See WQS definitions
wfl.ReadQueue [Queue=x]	calls to fetch an entry in a queue	WQS_read_queue_func	See WQS definitions
wfl.ReadEntry [Queue=x]		WQS_read_entry_func	See WQS definitions
wfl.InsertEntry [Queue=x]	calls to insert an entry in a queue	WQS_insert_entry_func	See WQS definitions
wfl.DeleteEntry [Queue=x]	calls to delete an entry in a queue	WQS_delete_entry_func	See WQS definitions
wfl.UpdateEntry [Queue=x]	calls to update an entry in a queue	WQS_update_entry_func	See WQS definitions

Soft Report Symbol	Definition	Counter	Mapping to external variable
wfl.StartDump [Queue=x]	startdump calls, must be called to run ReadDump	WQS_start_dump_func	See WQS definitions
wfl.ReadDump [Queue=x]	read dump calls to read entries in a queue	WQS_read_dump_func	See WQS definitions
wfl.EndDump [Queue=x]	end dump calls, called after ReadDump calls	WQS_end_dump_func	See WQS definitions

Process Engine counters

Image Services counters also run on Process Engine (PE) and are identified as IS (mini) counters. The IS mini counters on PE are identical to their counterparts on IS. See [Image Services counters](#) for more information.

The following PE counters are also defined:

- Error counters
- RPC counters

Error counters

Property	Description
Authentication errors	The number of authentication errors due to no permission.
Authentication token timeouts	The number of authentication token timeouts.
Database reconnect	The number of times a database reconnection occurred.
E-mail notification errors	The number of errors that have occurred while attempting to send an e-mail notification.
Exceed the isolated region cache	The number of times the system has exceeded the suggested maximum number of cached isolated regions.
Exceed the workspace cache	The number of times the system has had to replace an item in the workspace cache because the cache was full.
Lock work object errors	The number of times an attempt has been made to lock a work item, and that attempt has failed because the work item was already locked, did not exist, or had been updated since the query was done. If this counter increments excessively, try changing the work performers so that they browse and lock in the same API call (use the "query specifier" APIs), instead of reading the work item in one API call and locking it in another. See Help for Process Development for further information.
Move work objects duplicates errors	The number of times an attempt has been made to put a work item into a queue on a different PE server, but the work item already existed on that queue. This error occurs occasionally during normal operation if a work item repeatedly moves between two queues on different PE

Property	Description
	<p>servers. This error occurs rapidly if:</p> <ol style="list-style-type: none"> The databases get out of sync because a database restore was done on one or more PE servers without running the vwverify utility or ... Someone uses a low-level database tool such as Oracle SQL*Plus or Microsoft SQL Server isql and modifies the database. For example, using a low-level database tool to remove the "system locked" status of a work item causes this error. <p>Note: The use of such low-level database tools to modify the database in any way is not supported.)</p> <p>If this error occurs excessively, use the vwverify utility to verify the WorkFlo database.</p>
Move work object to new server errors	<p>The number of times an attempt has been made to put a work item into a queue on a different PE server, but the PE server or database was unavailable.</p> <p>If this error occurs frequently, check that all PE servers are up and the PE software is running on all servers. Fix any errors reported in the system error logs. See Help for Process Task Manager for more information about event logs.</p>
Timer manager update errors	<p>The number of times the timer software tried to time out a work item, but was unable to do so because the work item was locked or missing. This error occurs occasionally during normal operation when the timer software and a user-defined work performer try to access a work item at the same time.</p> <p>If this error occurs excessively, restructure your workflow so that work items do not time out as frequently while they are locked.</p>
Transaction deadlock errors	<p>The number of times a database transaction has been aborted and retried due to a database deadlock error.</p> <p>If this error occurs frequently, report this condition to IBM Software Support. There is no field remedy for frequent occurrences of this error.</p>
Work objects skipped due to security errors	<p>The number of times the timer software tried to time out a work item, but was unable to do so because the work item was locked or missing. This error occurs occasionally during normal operation when the timer software and a user-defined work performer try to access a work item at the same time.</p> <p>If this error occurs excessively, restructure your workflow so that work items do not time out as frequently while they are locked.</p> <p>The number of times a work item was omitted from the results of a query because the caller did not have read or write access. Excessive numbers of these errors result in lower performance because PE is reading significantly more data than is being returned to the user. This error occurs under the following circumstances:</p> <ul style="list-style-type: none"> - A record is read from the event log, but the user does not have read access as defined in the work class for the event log. - A record is read from a queue, but the user does not have read or write access as defined in the work class for the work item. - A record is read from the roster, but the user does not have read access as defined in the work class for the roster record. <p>If this error happens frequently, allow more access rights to work object data by means of the work class, and possibly restrict access to the work item data by means of security on queues or rosters.</p>

RPC counters

Property	Description
Executed regular steps	The number of regular steps completed.
Executed system steps	The number of system steps completed.
External RPCs	The number of RPCs that come only from the client.
Internal RPCs	The number of RPCs that come only from another Process Engine (PE) server (that is, communication to the VWSs process from VWRs, VWKs, vwtool, and others).
Java RMI RPCs	The number of Java API calls that have been processed.
Object Service RPCs	The number of RPCs that come from PE servers and clients, and are used to read objects (such as work classes, work performer classes, or instruction sheets) that are contained in BLOB format.
Work Object Inject RPCs	The number of calls to the work item inject (create) RPC.
Queue Query RPCs	The number of calls to the queue query RPCs.
Roster Query RPCs	The number of calls to the roster query RPCs.
Lock Work Object RPCs	The number of calls to the lock work item RPC
Update Work Object RPCs	The number of calls to the update (or dispatch) Work Object RPCs.
Invoke Web Services Instructions	The number of Invoke Web service instructions executed.
Receive Web Services Instructions	The number of Receive Web service instructions executed.

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This product incorporates technology covered by one or more of the following patents: U.S. Patent Numbers: 6,094,505; 5,768,416; 5,625,465; 5,369,508; 5,258,855.

Glossary

A

accumulator: An Accumulator is a counter which is a defined subordinate to an Event. The application adds values to the Accumulator that typically represent a measured value associated with the transpiring of the Event, and the Listener library automatically computes the total of the squares of the presented values, and the minimum and maximum values presented during each Aggregation Interval. The Manager API will use the count represented by the Event to compute an average value of the item represented by the Accumulator and the standard deviation of the values over the Aggregation Interval. An example of an Accumulator would be the duration of a particular operation; the corresponding Event would count the number of times that operation was performed.

aggregation time: The interval over which the Listener accumulates performance data before sending a summary of it to the Manager. If 0, then the Listener is in pass-through mode and sends all events to the Manager as quickly as possible, without aggregating them. For some event parameters like count, aggregation is a summation, but for other parameters like duration, the aggregation is really an averaging.

application: The FileNet product whose performance is being monitored.

C

cluster: A user-defined collection of servers.

containers: Logical groupings of Events and Meters.

E

event: An "event" is an occurrence that happens in the application that is deemed to be significant. Events can have "duration" (a parameter which tells how long it took the application to perform the action associated with the event, such as a database lookup), or they can be "single" events with no associated duration.

event class: A logical collection of metrics available from a server.

J

JMX: Java Management Extension technology provides the tools for building distributed, web-based, modular and dynamic solutions for managing and monitoring devices, applications, and service-driven networks. By design, this standard is suitable for adapting legacy systems, implementing new management and monitoring solutions, and plugging into those of the future.

L

listener: The Listener is the piece of software that offers the application a standard API for providing performance data, optionally accumulates and aggregates that data, and sends it to the Manager for analysis and storage.

M

message box: A status box at the bottom of the System Manager providing user with a high-level connectivity status.

meter: A Meter represents an absolute value, such as a measurement made by the Application or a current value, rather than a counter. Since there is only a current value, no standard deviation information is maintained, but the minimum and maximum values over each Aggregation Interval are calculated. An example of a Meter would be the amount of RAM allocated to a cache.

P

product: In this context, a "product" is a FileNet application, such as the Content Engine, from which performance data is gathered. That is, the product is the managed resource.

R

RMI: Remote Method Invocation is the standard high-level Java mechanism for working with Java objects on remote machines as if they were local, making it easy to write distributed applications.

S

server: A computer or software application that provides services to other computers connected via a network.

SNMP: The Simple Network Management Protocol, a standard for gathering statistical data about network traffic and the behavior of network components. SNMP uses management information bases (MIBs), which define what information is available from any manageable resource, and management consoles to gather and display the data and alarms. SNMP is not widely used for application management; it is more commonly used to manage hardware devices in a network. SNMP model is more suited to hardware resources, since it requires that operations be represented as configurable attributes. On the other hand, SNMP is very widely deployed.

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