



FILENET®

System Monitor

FSM Monitoring Guide FileNet P8 4.x

FileNet System Monitor 4.0.0

FileNet Corporation

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FileNet System Monitor

(June, 2007)

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Chapter 3. About this document

Who Should Read This Guide

The target audience for this guide are those who use FileNet.

Users of the guide should have some knowledge of the Unix and/or Windows operating system and FileNet.

List of documents

FileNet System Monitor CALA Guide

Datatypes that can be processed by the FSM CALA

FileNet System Monitor Monitoring Guide

Description of all monitors contained in FileNet System Monitor

FileNet System Monitor Task Guide

Description of all tasks contained in FileNet System Monitor

FileNet System Monitor Users Guide

Installation guide

FileNet System Monitor Release Notes

Description of changes and bugfixes

General information

Where you find this guide

You can find this documentation on the FSM installation CDROM in the following folder:

UNIX: <Mount point>/INSTALL/docs

Windows: <Drive letter>:\INSTALL\docs

Typeface Conventions

The guide uses several typeface conventions for special terms and actions. These conventions have the following meaning:

`code` Keywords and code examples occur like this

varname Variable names occur like this

filename File names occur like this

constant Constants and names of tasks, monitors etc. appear like this

command Command names appear like **this**

parameter Parameters and options for commands appear like *this*

userinput Values that the user must provide appear like **this**

Computer output Output from programs appears like *this*

gui label Names of windows, dialogs, and other controls appear like *this*

Program listings appear like this:

```
001 # a program listing
002 echo "This is an example program listing (shell script) with nothing bu ✓
... t an extremely long echo command"
003 exit 0
```

Note: The character ✓ at the end of a line in a *computer output* or program listing shows, that the line has been wrapped and is continued in the next line.

Contacting FileNet Support

We are very interested in hearing from you about your experience with the product. We welcome your suggestions for improvements.

If you encounter difficulties with the FSM please contact the FileNet support (<http://www.filenet.com>).

Chapter 4. Overview FSM Monitoring

Overview

The FSM product (FileNet System Monitor) contains the FileNet P8 monitoring collections.

Monitoring components

The product defines 49 monitors for different parts of FileNet P8 environments. More than 150 FileNet P8 parameters / values can be monitored.

- FileNet PE Core Components (Services, Processes)
- FileNet Listener API Monitors
- FileNet PE Queue and Roster
- FileNet PE PPM and Router
- FileNet PE Memory and Cache Usage
- FileNet PE User (Logon / Logon errors) and MKF statistics
- FileNet PE MSSQL Availability
- FileNet PE MSSQL Details
- FileNet PE Oracle Availability
- FileNet PE Oracle Details
- FileNet CE Core Components (Services, Processes, Apache)
- FileNet CE Router
- FileNet CE File and Object store
- FileNet CE MSSQL Availability
- FileNet CE MSSQL Details
- FileNet CE Oracle Availability
- FileNet CE Oracle Details
- FileNet AE Core Components (Services, Router)
- CALA (FSM CALA) Availability
- FileNet PE ELOG logfile management
- FileNet CE and PE Java, RMI, PPM and Router logfiles management

Monitoring Collections

FileNet Process Engine Monitors

The FileNet Process Engine Monitors collection contains monitors that can only be run on Process Engine servers. The collection contains database monitors for Process Engine

database as well as monitors that check different parameters provided by **vwtool**. The Component Status monitor can be run on any server of a Process Engine System.

FileNet Content Engine Monitors

The FileNet Content Engine Monitors collection contains monitors that can only be run on a Content Engine server. The collection contains mainly database monitors for the Content Engine databases (Object stores).

Overview of Monitor error codes

The numeric monitors return a negative value if an error occurs. The string monitors return error values starting with "ERROR_".

There are seven main error values for the monitors. If one of these general values is returned, you can find more information about the error in the additional information that is available in the message text of the monitoring event.

The following table gives an overview of the main error values. The extended error descriptions can be found in the sections below.

Return value (string / numeric)	Description
ERROR_usage / -10	The monitor configuration is incorrect. Check the parameters and redistribute the monitor profile.
ERROR_logctlcmd_error / -20	CALA related errors
ERROR_installation / -30	The target does not support the function of the monitor or is not configured correctly.
ERROR_rdbms / -40	A database related error occurred.
ERROR_application / -50	This value is returned if a FileNet related error occurred, e.g. if the FileNet system is down.
ERROR_mkfdb / -60	An MKF database related error occurred.
ERROR_system / -70	Any system related error.
ERROR_itm / -99	Internal ITM error. See event details for more information.

The following table lists the error values in ascending order. The table also contains information about the additional information that is available in the message text of the monitoring event for some error conditions.

The following tables list the detailed error descriptions for the general error values.

ERROR_usage / -10

Extended error message	Description
<variable> not specified	A required variable is missing.

Extended error message	Description
<variable> <value> not valid <variable> <value> no directory	The specified value for variable is not valid (out of range, misspelled etc). The second form if this message occurs if the monitor requires a directory but validation failed for the given value.
general usage (Usage: <script> <parm>)	The monitor parameters are incorrect, e.g. an invalid number of parameters was specified or a required parameter is missing.

ERROR_logctlcmd_error / -20

Extended error message	Description
no output file	The execution of logctlcmd did not create an output file.
operation failed	The execution of logctlcmd status returned with exit code 0 but the status report contains the text <code>operation failed</code> . This can be caused by several conditions: network problems, response from components takes too much time...
port in use	The port used for communication between logctlcmd and logctlsrv is already in use. This error can occur if you distribute several monitors to one target and more than one of these monitors starts at the same time. In this case, all monitors will use the port specified in the configuration file. You can avoid this by specifying different port numbers as parameter for each monitor (see detailed monitor description).
no "outbound queue" found for <comp>	The CALA status report is incomplete and contains no <code>outbound queue</code> information for the specified component. The file might be truncated because the file system is full or due to an internal CALA error.
unknown error	The execution of logctlcmd returned a return code <code><>0</code> but none of the conditions described above apply. Try to run logctlcmd status manually or run the corresponding task and check for errors.

ERROR_installation / -30

Extended error message	Description
Command not found: <command>	A FileNet command could not be found. This can be caused by invalid configuration of the Plus Module or by an incomplete FileNet installation.
Environment file not found: <filename>	The environment file for the Plus Module could not be found.
<variable> not set	The variable is missing in the environment file.
Database type <type1> not valid, script requires <type2>	A database monitor was distributed either to a non-database server to a server that host a different type of database.
Invalid platform: <interp>	The monitor was distributed to a platform that it does not support. Some monitors can only be run on Windows platforms.

Extended error message	Description
No storage library defined	A monitor was distributed to a server that has no storage libraries (OSAR or MSAR).
Server is no PPM server	The monitor was distributed to a server that is not configured as a PPM server.

ERROR_rdbms / -40

Extended error message	Description
<command> did not return any result	The SQL tool did not return a result, the output file is empty.
<command> returned invalid result: <result>	The SQL tool returned an unexpected result. It does not contain the requested data or more than one row was selected.
Database error: <errortext>	A database error occurred. errortext is the original error message returned by the SQL tool.
Internal error executing SQL statement: <sqlstatement>	The execution of an SQL statement failed.
Database is currently starting or stopping	The RDBMS system is currently being stopped or started.
Database not running	The RDBMS system is down.
Login to database <dbname> with user <user> failed	The connect to the requested database failed. The database name might be wrong or the environment file contains an invalid database user and / or password.

ERROR_application / -50

Extended error message	Description
<command> did not return any result	The FileNet tool did not return a result, the output file is empty.
<command> returned invalid result: <result>	The FileNet tool returned an unexpected result that does not contain the requested data.
<prog> not running	The FileNet system or a specific program is currently not running.
Service <service> not running	A required Windows service is not running. This may be the FileNet service
Directory not found: <directory>	A directory that is required for correct monitor execution does not exist.
File not found: <file>	A file that is required for correct monitor execution does not exist.
Error analyzing <file>	The given file does not contain the expected information.
Error checking RMI registry	The tool that checks the RMI registry returned an error.

ERROR_mkfdb / -60

Extended error message	Description
-------------------------------	--------------------

Extended error message	Description
Invalid MKF database type: <type>	An invalid MKF database type was specified. Valid MKF database types are Trans, Sec and Perm or the numeric equivalent (1 for Perm, 3 for Trans, 11 for Sec).
MKF database file not found: <file>	The file for a specific MKF database type does not exist or cannot be read.
MKF database not running	The required MKF database(s) is (are) not running.
MKF database type <type> not available on server <server>	The monitor requires an MKF database that is not available on the monitoring target.

ERROR_system / -70

Extended error message	Description
Command not found: <command>	A tool could not be found.
Tools directory not found: <directory>	The directory for the tools could not be found.
Cannot change to directory <directory>	The monitor cannot access the given directory.
Cannot convert <file> to UNIX format	The conversion of the given file to UNIX format failed.
Cannot create temporary file <file>	The given file cannot be created. This can happen if the filesystem is full or due to access restrictions.
Internal error while processing file <file>	An internal error occurred.
Product name <product> not valid	The monitor was started for a product for which it is not valid. This is an internal error.

Chapter 5. FileNet P8 4.x Monitors

The following monitors can only be used with P8 4.x systems. For older P8 versions please use the monitors of the related chapters

ApplicationServerMonitoring

Description

This monitor checks for processes (or Windows Services), that indicate a running Application server. Additionally the monitor checks whether a specific WebPage of the Server can be loaded (HTTP load status OK).

Monitoring Frequency

No default schedule

Parameters

Windows Service or UNIX process

Comma separated list of Windows services (use the Display name of the service) or UNIX processes

Port

Port of the Application server.

Web page

Full qualified web page, that should be loaded to verify Application server status

Return Values

ok

Processes / Services are running, specified Web page can be accessed (optional)

not_ok

At least one process / service is not running or the Web page cannot be accessed (optional).
Check detailed output for more detailed information.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage

- general usage
- Variable not specified
- Component not installed

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Cache Record Size

Description

This monitor returns the size of a specified record in the cache. The cache contains pre-build records that the Process Engine software uses to read rows from the database.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Isolated Region

Number of isolated region to check.

Record Name

Comma-separated list of record types whose cache size is monitored, (e.g. `vwobject,Inbox`) or `ALL_RECORDS` (default). The record name is case-insensitive.

Return Values

`>=0`

Size of largest record in cache. The sizes for all records are listed in the additional info.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - Variable not valid
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Centera Status

Description

This monitor checks the connection to the configured EMC Centera system or a specific node.

Monitoring Frequency

Default is once every hour.

Parameters

EMC Centera Configuration String

Specify the complete EMC Centera connection string or only one separate node to check

Tools to check status

Valid values are: `cping`, `centeraping`.

Return Values

ok

EMC Centera or a node of a Centera system is connected.

not_ok

EMC Centera cannot be reached using the configured tool.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- ERROR_system
 - Command not found
 - Tools directory not found

Component Manager Queue Statistic

Description

This monitor checks a specific statistical value for a specified Component Manager queue.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Queue Name

Comma-separated list of queue names whose number of entries is monitored or ALL_QUEUES (default). The queue name entered here is case-insensitive.

Statistic Type

Name of the statistic type. Valid values are:

avg_calls_per_min	Average calls per minute
millisecs_per_call	Average duration time (in milliseconds) per call

Return Values

≥ 0

Statistical (average) value of the selected statistic.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)

- Variable not specified
- Variable not valid
- general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Component Status

Description

This monitor checks the status of one, a list or all components on a specific server of a Process Engine system.

The checks that are performed depend on the specified component:

IS	analyze output of <code>initfnsw status</code>
PPM	check if PPM is registered in the RMI registry check if Java process is running
ROUTER	check if router is registered in RMI registry check if corresponding PPM is registered in the RMI registry check if Java process is running
WEB	check if the processes and Services specified during configuration of the Web Application Server are running
EPROCESS	check if the Service <code>vwService</code> is running
CM	check if Component Manager is running (CM queues will be checked automatically)
QUEUE	check if Component Manager is running
PA	check if Process Analyzer is running

Note: Due to size limitations, this monitor is not available for Tivoli Classic Monitoring. Use the component specific monitors described below instead.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Component

Comma-separated list of component names or `ALL_COMPONENTS` (default)

Valid component names are: IS, PPM, ROUTER, WEB, EPROCESS, CM, PA

Return Values

ok

All specified components are running.

not_ok

At least one of the specified components is stopped. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Variable not specified
 - Component not installed

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Courier Statistic

Description

The Courier Statistic monitor checks statistic information of Server and client Courier requests. Check the FileNet IS / IM documentation about CORH state details.

Note: This monitor should not be started in Windows based IS / Mini IS servers.

Monitoring Frequency

Default is once every 10 minutes.

Parameters

CORH states

Supported CORH states checking Server and Client connections status:

- BLKGET --- Receiving bulk data
- BLKPUT --- Sending bulk data
- DBYTES --- Deserialize bytes from the Courier network buffer
- DCSS --- Deserialize a sequence from the Courier network buffer
- DESER --- Internal Courier deserialization
- DLWORD --- Deserialize a long word from the Courier network buffer
- DLWORDS --- Deserialize long words from the Courier network buffer
- DMOVE --- Move the Courier network buffer pointer
- DSTRUCT --- Deserialize a structure from the Courier network buffer
- DWORD --- Deserialize a word from the Courier network buffer
- DWORDS --- Deserialize words into the Courier network buffer
- ISSUE --- Send a message on the network
- NOSTATE --- Unknown; probably a connection being established
- PEEK --- Check network for out-of-band attention
- RCV --- Blocked, waiting for network data
- RCVTO --- Same as RCV with a timeout
- SBYTES --- Serialize bytes into the Courier network buffer
- SERIAL --- Internal Courier serialization
- SLWORD --- Serialize a long word into the Courier network buffer
- SLWORDS --- Serialize long words into the Courier network buffer
- SNDATT --- Send an out-of-band attention on the network
- SSTRNG --- Serialize a string into the Courier network buffer
- SSTRUCT --- Serialize a structure from the Courier network buffer

- SVER --- Serialize the Courier version into the Courier network buffer
- SWORD --- Serialize a word into the Courier network buffer
- SWORDS --- Serialize words into the Courier network buffer

Supported CORH states checking Server ONLY connections status:

- CHLDAL --- COR_Listen child received an ALARM signal
- CHLDEX --- COR_Listen child has exited
- CLOSEMSG --- Close the connection
- CRAPC --- Request handler is getting the connection
- CRPIPE --- Create a named pipe
- DCALL --- Deserialize a Courier Call message
- DELETE --- Delete the handle and close the connection
- DELMSG --- Delete the handle and close the connection
- FLUSHMSG --- Flush the Courier network buffer
- GETPPM --- Looking for an available request handler
- GETRPC --- Blocked, waiting to get an RPC over the network
- IDLEMSG --- Obsolete - no longer used
- INITH --- Initialize handle
- PEEKMSG --- Check network for out-of-band attention
- QUEUED --- Connection is queued
- RCVFD --- Request handler is receiving the connection file descriptor
- RCVFDE --- Error occurred while getting the connection file descriptor
- RCVFDN --- Notify sender of connection file descriptor
- RCVMSG --- Blocked, waiting for network data
- RELMSG --- Connection termination sequence has started
- RXATTNMSG --- Out-of-band attention has been received
- RXDATAMSG --- Network data has been received
- SABORT --- Serialize a Courier Abort message
- SNDBLKMSG --- Sending bulk data
- SNDFD --- Send a connection file descriptor
- SNDFDW --- Wait for completion of the SNDFD state
- SNDMSG --- Send a message on the network
- SREJ --- Serialize a Courier Reject message
- SRET --- Serialize a Courier Return message
- TXDATAMSG --- Network data has been sent
- TXEXDATAMSG --- Out-of-band attention has been sent
- WREQH --- COR_Listen child is waiting for the request handler
- ZOMBIEMSG --- Connection is in an unstable state

Supported CORH states checking Client ONLY connections status:

- CLOSE --- Close the connection
- CONN --- Received an open reply
- CONNE --- Error occurred waiting for an open reply
- CONNW --- Wait for the open reply
- DABORT --- Deserialize a Courier Abort message
- DREJ --- Deserialize a Courier Reject message
- DRET --- Deserialize a Courier Return message
- FLUSH --- Flush the Courier network buffer
- OPEN --- Establish a connection
- SCALL --- Serialize a Courier Call message

Return Values

≥ 0

Number of connections of the specified CORH state(s).

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Invalid platform
- -70 (system error)
 - Command not found
 - Tools directory not found

DB2 Statistic

Description

The DB2 Database Statistic monitor checks any numeric statistic information that the DB2 command tool 'DB2' function 'GET SNAPSHOT for DATABASE <DBNAME>' provides. Only 1 parameter can be specified for one instance here. If the specified parameter doesn't exist '-30' is returned, if a alphanumeric value is returned '-99' is returned. Note: Only values that are unique within the DB2 output are allowed. '(' or ')' cannot be used. Please shorten the (unique) parameter strings in this case.

This monitor can only be run on local DB2 Server. The used DB2 command cannot be executed on a system, where only the DB2-Client is installed.

Monitoring Frequency

Default is once every 30 minutes.

Parameters

Statistic parameter (parameter sets)

This parameter defines which DB2 statistic parameter that will be checked. Each monitor instance contains one or more parameter sets, which are separated by semicolon (;). All other parameter are formatted like:
<Statistic DB2 parameter to check>,<comparison sign>,numeric threshold
Example: Log space available to the database,<,1[;next parameter set]

DB2 statistic parameters

Possible statistic parameters are:

- Catalog database partition number
- High water mark for connections
- Application connects
- Secondary connects total
- Applications connected currently
- Appls. executing in db manager currently
- Agents associated with applications
- Maximum agents associated with applications
- Maximum coordinating agents
- Locks held currently
- Lock waits
- Time database waited on locks

- Lock list memory in use
- Deadlocks detected
- Lock escalations
- Exclusive lock escalations
- Agents currently waiting on locks
- Lock Timeouts
- Number of indoubt transactions
- Total Private Sort heap allocated
- Total Shared Sort heap allocated
- Shared Sort heap high water mark
- Total sorts
- Total sort time
- Sort overflows
- Active sorts
- Buffer pool data logical reads
- Buffer pool data physical reads
- Buffer pool temporary data logical reads
- Buffer pool temporary data physical reads
- Asynchronous pool data page reads
- Buffer pool data writes
- Asynchronous pool data page writes
- Buffer pool index logical reads
- Buffer pool index physical reads
- Buffer pool temporary index logical reads
- Buffer pool temporary index physical reads
- Asynchronous pool index page reads
- Buffer pool index writes
- Asynchronous pool index page writes
- Total buffer pool read time
- Total buffer pool write time
- Total elapsed asynchronous read time
- Total elapsed asynchronous write time
- Asynchronous data read requests
- Asynchronous index read requests
- No victim buffers available
- LSN Gap cleaner triggers
- Dirty page steal cleaner triggers
- Dirty page threshold cleaner triggers

- Time waited for prefetch
- Unread prefetch pages
- Direct reads
- Direct writes
- Direct read requests
- Direct write requests
- Direct reads elapsed time
- Direct write elapsed time
- Database files closed
- Data pages copied to extended storage
- Index pages copied to extended storage
- Data pages copied from extended storage
- Index pages copied from extended storage
- Vectored IOs
- Pages from vectored IOs
- Block IOs
- Pages from block IOs
- Physical page maps
- Host execution elapsed time
- Commit statements attempted
- Rollback statements attempted
- Dynamic statements attempted
- Static statements attempted
- Failed statement operations
- Select SQL statements executed
- Update/Insert/Delete statements executed
- DDL statements executed
- Internal automatic rebinds
- Internal rows deleted
- Internal rows inserted
- Internal rows updated
- Internal commits
- Internal rollbacks
- Internal rollbacks due to deadlock
- Rows deleted
- Rows inserted
- Rows updated
- Rows selected

- Rows read
- Binds/precompiles attempted
- Log space available to the database
- Log space used by the database
- Maximum secondary log space used
- Maximum total log space used
- Secondary logs allocated currently
- Log pages read
- Log read time
- Log pages written
- Log write time
- Number write log IOs
- Number read log IOs
- Number partial page log IOs
- Number log buffer full
- Log data found in buffer
- Appl id holding the oldest transaction
- Log to be redone for recovery
- Log accounted for by dirty pages
- File number of first active log
- File number of last active log
- File number of current active log
- File number of log being archived
- Package cache lookups
- Package cache inserts
- Package cache overflows
- Package cache high water mark
- Application section lookups
- Application section inserts
- Catalog cache lookups
- Catalog cache inserts
- Catalog cache overflows
- Catalog cache high water mark
- Workspace Information
- Shared high water mark
- Corresponding shared overflows
- Total shared section inserts
- Total shared section lookups

- Private high water mark
- Corresponding private overflows
- Total private section inserts
- Total private section lookups
- Number of hash joins
- Number of hash loops
- Number of hash join overflows
- Number of small hash join overflows

Return Values

ok

None of the checked DB2 parameters reached the specified thresholds (multiple parameters checked).

numeric value greater than 0

Numeric result of the (single) checked DB2 parameter.

not_ok

At least one checked DB2 parameters reached the specified thresholds.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)/ERROR_usage
 - Variable not specified
 - general usage
- -30 (installation error)/ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Invalid database name
- -40 (database error)/ERROR_database
 - Database error
 - Database not running

- -70 (system error)/ERROR_system
 - Command not found
 - Tools directory not found

DB2 Tablespace Free

Description

This monitor checks the amount (in KBytes or pages) or the percentage of the space free of one DB2 tablespace (depending on the parameter settings).

This monitor can only be run on a FileNet Root Index Server or Combined Server (local DB2 Server or DB2-Client installed).

Monitoring Frequency

Default is once every 30 minutes.

Parameters

Tablespace

Name of the tablespaces.

Result type

Supported values are: percentage, amount_kbytes or amount_pages

Return Values

≥ 0

Amount of free space (in KBytes or pages) or percentage used tablespace (depending on the parameter settings).

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform

- Invalid database name
- -40 (database error)
 - Database error
 - Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found

DB2 Tablespace Status

Description

This monitor checks status of DB2 tablespaces.

This monitor can only be run on a FileNet Root Index Server or Combined Server (local DB2 Server or DB2-Client installed).

Monitoring Frequency

Default is once every 10 minutes.

Parameters

Tablespace(s)

List of tablespaces (comma or semicolon separated) or 'ALL_TABLESPACES'.

Return Values

ok

All checked tablespaces are in 'normal' mode.

not_ok

At least one checked Ttablespace in not in 'normal' mode. See monitor details for more information.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage
- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System

- Server is no Property Manager
- Invalid database name

- ERROR_database
 - Database error
 - Database not running

DB2 Tablespace Used

Description

This monitor checks the amount (in KBytes or pages) or the percentage of the space used of one DB2 tablespace (depending on the parameter settings).

This monitor can only be run on a FileNet Root Index Server or Combined Server (local DB2 Server or DB2-Client installed).

Monitoring Frequency

Default is once every 30 minutes.

Parameters

Tablespace

Name of the tablespaces.

Result type

Supported values are: percentage, amount_kbytes or amount_pages

Return Values

≥ 0

Amount of used space (in KBytes or pages) or percentage used tablespace (depending on the parameter settings).

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform

- Invalid database name
- -40 (database error)
 - Database error
 - Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found

FileNet Listener for Licences

Description

The FileNet Listener API provides functionality to request the number of users who did at least one RPC call (licence request) in a period of 15 minutes and counts all requests which were made within this period by all users. The users are handled as licences in monitoring context, because every user finally needs a licence. This is called usage. The FileNet Listener for Licences can request the number of users and the number of usage and wether return the maximum of a fix defined period or compare the values against a threshold.

Monitoring Frequency

No default schedule defined, but it is recommended to run the monitor once a day, to request the licences and usage for the day before.

Parameters

System (Mandatory)

This is the FileNet P8 4.x system name

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Request Type

There are two different values which can be requested by the monitor. (mandatory)

- LICENCE will request how many different users used a licence in a period of 15 minutes. The maximum of these values can be analyzed with the monitor.
- USAGE will request how many requests on licences have been made within 15 minutes

TimeMode (mandatory)

This parameter field can handle some pre defined time configuration options. The following options are available.

- TODAY - Request data from the actual day 00:00:00 till the actual time
- YESTERDAY - Request data from 00:00:00 until 23:59:59 the day before (This shall be used as the most common option)
- THIS_WEEK_START_SUNDAY - Request data from sunday 00:00:00 of the actual week until the actual time.
- THIS_WEEK_START_MONDAY - Request data from monday 00:00:00 of the actual week until the actual time.

- LAST_WEEK_START_SUNDAY - Request data from sunday 00:00:00 of the last week until saturday 23:59:59 of the last week.
- LAST_WEEK_START_MONDAY - Request data from monday 00:00:00 of the last week until sunday 23:59:59 of the last week.
- THIS_MONTH - Request data from the first day 00:00:00 of the actual month till the actual time
- LAST_MONTH - Request data from the first day 00:00:00 of the last month till the last day 23:59:59 of the last month.
- THIS_FIRST_QUARTER - Request data from January 1st 00:00:00 till March 31st 23:59:59 of the actual year.
- THIS_SECOND_QUARTER - Request data from April 1st 00:00:00 till June 30th 23:59:59 of the actual year.
- THIS_THIRD_QUARTER - Request data from July 1st 00:00:00 till September 30th 23:59:59 of the actual year.
- THIS_FOURTH_QUARTER - Request data from October 1st 00:00:00 till December 31th 23:59:59 of the actual year.
- LAST_FIRST_QUARTER - Request data from January 1st 00:00:00 till March 31st 23:59:59 of the last year.
- LAST_SECOND_QUARTER - Request data from April 1st 00:00:00 till June 30th 23:59:59 of the last year.
- LAST_THIRD_QUARTER - Request data from July 1st 00:00:00 till September 30th 23:59:59 of the last year.
- LAST_FOURTH_QUARTER - Request data from October 1st 00:00:00 till December 31th 23:59:59 of the last year.
- THIS_FIRST_HALF - Request data from January 1st 00:00:00 till June 30th 23:59:59 of the actual year.
- THIS_SECOND_HALF - Request data from July 1st 00:00:00 till December 31st 23:59:59 of the actual year.
- LAST_FIRST_HALF - Request data from January 1st 00:00:00 till June 30th 23:59:59 of the last year.
- LAST_SECOND_HALF - Request data from July 1st 00:00:00 till December 31st 23:59:59 of the last year.
- THIS_YEAR - Request data from January 1st 00:00:00 till December 31st 23:59:59 of the actual year.
- LAST_YEAR - Request data from January 1st 00:00:00 till December 31st 23:59:59 of the last year.

Threshold

The threshold parameter is a numeric value and can be used in the LICENCE request type as well as in the USAGE request type. The threshold value should be the value of the licences (or less) the customer is allowed to access. If a threshold is given, the monitor will return not_ok if one of the returned values is greater than the threshold. Else it will return ok. If no threshold is given, the monitor will return the maximum (numeric) value of all requested values.

Return Values

ok

None of the checked parameters (Listener path) reached the specified thresholds (multiple parameters checked).

numeric value greater than 0

Numeric result of the (single) checked parameter (Listener path).

not_ok

At least one checked parameters (Listener Path) reached the specified thresholds.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- ERROR_system
 - Command not found
 - Tools directory not found

FileNet Listener request

Description

The monitor checks FileNet Listener API parameters of the

Monitoring Frequency

No default schedule defined.

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Port (optional)

The port to which shall be connected can be entered here. If nothing is entered here, the port from the P8 4.x installation configuration is used.

JAVA Path

Specify a Java installation path here (unusual) or leave unset (monitor uses the pre-configured Listener Java Path)

Listener threshold (parameter sets)

This parameter defines which Listener paths values will be checked

Each monitor instance contains one or more parameter sets, which are separated by semicolon (;).

Two specific Listener paths exist, that are checked in general: '/<application name>/heartbeat' and

'/<application name>/uptime', which indicate the status and how long the application is running. All other parameter are formatted like:

<Listener path to check<,<comparison sign>,numeric threshold Example: /Image Services/USER/fnsw/dev/1/sec_db0/forupdate,<,1[;next parameter set]

You can list all available Listener paths for the server you want to monitor by executing the

FSM Task/Job: 'Execute/Run Listener request'.

Return Values

ok

None of the checked parameters (Listener path) reached the specified thresholds (multiple parameters checked).

numeric value greater than 0

Numeric result of the (single) checked parameter (Listener path).

not_ok

At least one checked parameters (Listener Path) reached the specified thresholds.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- ERROR_system
 - Command not found
 - Tools directory not found

FileNet Process Analyzer Statistic

Description

The monitor checks Statistical values of the process Analyzer.

Monitoring Frequency

No default schedule defined.

Parameters

System

Specify the FileNet P8 4.x system name.

Product

Required. This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server

Required. This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Statistic Value

Required. Name of the statistic value. Valid values are:

1 DIM_CACHE	Dimension cache hit ratio
2 FACT_TAB_CACHE	Fact table cache hit rate
3 EVT_SINCE_START	Events published since start
4 EVT_SINCE_RESET	Events published since reset
5 EVT_PER_SEC	Average events published per second
6 EVT_COMMIT	Events committed since start
7 EVT_QUARANT	Number of quarantined events
8 DB_UPD_SEC	Average database update time in seconds
9 DB_UPD_INT	Average database updates per interval
10 WORK_ITEM_TIME	Average work item cube processing time in sec
11 WORK_CUBE_TIME	Average workflow cube processing time in sec
12 FULL_CUBE_TIME	Average full cube processing time in sec

Return Values

>=0

Selected statistical value.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - Variable not valid
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

FileNet WebApplication Status

Description

Hint: This chapter is written for JMX experienced users. For an introduction to JMX and further information about necessary parameters check the chapter "Preparing JMX Support" of the installation guide.

This monitor checks the status of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. The monitor checks the overall status of the Web Application and compares pre-defined parameter sets of the Application server sets against thresholds. The following servers are supported:

- WebLogic 7
- WebLogic 8.1
- WebLogic 9
- WebSphere 5
- WebSphere 6.0.1

Where to find the connection data:

The first argument of the argument list is called "Connection Data". This parameter needs several information about the application server. The following steps can help finding the attributes.

- WebLogic 7:

Weblogic 7 requires the information domain and server. These parameters can be found in the WebLogic administrative console in the hierarchy tree. The **domain** is the highest level in this tree hierarchy (globe-symbol). Expand the <domain> -> Deployments -> Web Application Modules. The **deployed applications** are listed here. The monitor can check only one application at the same time. Open the desired application, open the tab "Deploy". In the displayed table you'll find a column called "target" which contains the **server**.

- WebLogic 8.1:

Weblogic 8.1 requires the information domain and server. These parameters can be found in the WebLogic administrative console in the hierarchy tree. The **domain** is the highest level in the tree hierarchy (globe-symbol). Expand the <domain> -> Deployments -> Web Application Modules. The **deployed applications** are listed here. The monitor can check only one application at the same time. Open the desired application, open the tab "Deploy". In the displayed table you'll find a column called "target" which contains the **server**.

- WebLogic 9:

WebLogic 9 requires the information domain and server. These parameters can be found in the WebLogic administrative console. In the main frame there is a "**Domain**" link. It leads to the available domains. On the first tab there is a list of several attributes. One of them is the name of the domain. The entry site also contains a link to the **servers**. If you want to see the Deployments there is a link in the left navigation frame (The deployment is not necessary, but it can show the relation between deployed application and the server on which they are deployed.)

- WebSphere 5:

WebSphere 5 needs three hierarchy depending types of data. Server, cell and node. Expand "Server" and click on "Application Server". An overview of all available **servers** will appear. Click on the application server name. The click on the "RunTime" tab. The **cell** and **node** name will appear. To find the application name expand "applications" and click on "enterprise applications". A list of **all deployed applications** will appear. Click on the application which shall be monitored. At the bottom on the actual displayed site, there is the link "Webmodule". When clicking on it, the **war file of the deployed** application will be displayed. Finding out the version is some kind of complicated, because the displayed version in the admin console overview which is 5.1.0 in most WebSphere 5 standard installations is not the same version which is used for the MBeanNames. The **version** can be found out by expanding "servers", click on "applicatio server" -> Click the "Runtime" tab and then "product information". There click the "components"-link. There will be a list of installed components and its versions. Take the versions of the components, which should be mostly the same. In standard environments these components all have version 5.0. MBeans use these type of version.

- WebSphere 6.0.1:

WebSphere 6.0.1 needs three hierarchy depending types of data. Server, cell and node. These can be found in the WebSphere administrative console. Expand "Server", click "Application Server". In the right frame all available application **servers** are shown. In one column of this table the **version** is shown. Click on the server, where the application is deployed on. Click the tab "Runtime". There the **node** and **cell** are listed. To find the application name and the application war-file expand "Applications" in the navigation frame and click on "Enterprise Applications". Click on the **application name**. Click on the link "Webmodules". It is on the bottom right of the right frame. There is the **name of the war-file**. Click it to get the URI. The **ThreadPool IDs** can be found out with the JMX Task by entering "#ThreadPool" as search criteria. At the very end of the listing, there will be three additional lines looking like the following three lines, which are one line in the task output. It was seperated only for better readability:

```
WebSphere:platform=dynamicproxy,cell=w2kfsmenNode01Cell,version=6.0.0.1,name=MessageListenerTH
mbeanIdentifier=cells/w2kfsmenNode01Cell/nodes/w2kfsmenNode01/servers/server1/server.xml↔
#ThreadPool_1154934251809,type=ThreadPool,node=w2kfsmenNode01,process=server1
```

The third line contains the ThreadPooIID. In this case it is the number 1154934251809. At the end of the first line there is the name of the ThreadPool. In this case it is "MessageListenerThreadPool". The task will return three of these lines. The other two contain the ID for the ORBThreadPool and the WebcontainerThreadPool.

- General Hint for experienced users:

It does take a very long time to go throug the admin consoles some times. It is also possible to request the task to get all MBean names. In every case, the required information can be read unique from the MBeanNames, which consist of passages like "version=5.0" or "node=myServer" or "domain=myDomain". So the values also can be read out of the MBean names from the task output.

Monitoring Frequency

No default schedule

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

Thresholds (case dependent)

The results from the monitor requests are compared against these thresholds. Some of the thresholds can be given as absolute value or a relative value (percentage) to the application servers maximum value. If no value shall be used for comparison, an underscore "_" can be used. So the value from the server will be taken as threshold.

To use the percentage option give the number with a 'p' as prefix. For example "p80" to use 80 % of the application server's maximum as threshold. Attributes which have this option are prefixed with a (p) in the list below.

If a value escalates when it is lower than the threshold, it is signed with (l), which stands for "lower".

If not all parameters which are requested should be compared to a threshold the "x" can be used instead of a numeric threshold value.

There are two types of notation of parameters for each application server. Both lists have the same content in a different terminology. "Generic notation" uses a speaking terminology which makes it easy to understand what the threshold which is defined means. The "specific notation" uses the Application server's own terminology, which makes it more easy to find the values in the output of the "View JMX Parameters" Task. WebSphere has some special "specific notation". Many parameters have the prefix "stats_" which means, that the following term is included in a stats object.

Warning: DO NOT USE "_" and the p-prefix for parameters which are not marked as p-compatible. These attributes can only compare against absolute values.

Hint "heap size": The heap size's unit is byte. So the threshold usually is a very huge number.

Hint "free heap": The threshold of "FreeHeap" has to be greater than the threshold to pass the test. All other values have to be less than the threshold to pass the test. At least "FreeHeap" and "FreeMemory" mean the same with a different terminology.

Examples: The examples can be used for orientation and do not guarantee an out of the box configuration, which can be used for every Application server. They only should be used as template to get a feeling which values can be very large (e.G. FreeMemory) or small (QueueCounters).

- WebLogic 7:

generic notation

<(l)FreeHeap>;<TotalHeap>;<(p)ThreadCount>;<OpenSessionsHighCount>;↔
<OpenSessionsCurrentCount>;<ConnectionsCurrentCount>;<ConnectionsHighCount>

specific notation

<(l)HeapFreeCurrent>;<HeapSizeCurrent>;<(p)ThreadCount>;<OpenSessionsHighCount>;↔
<OpenSessionsCurrentCount>;<ConnectionsCurrentCount>;<ConnectionsHighCount>

Example:

100000000;300000000;p70;10;10;10;10

- WebLogic8:

generic notation

<(l)FreeHeap>;<TotalHeap>;<(p)ThreadCount>;<OpenSessionsHighCount>;↔
<OpenSessionsCurrentCount>;<ConnectionsCurrentCount>;<ConnectionsHighCount>

specific notation

<(l)HeapFreeCurrent>;<HeapSizeCurrent>;<(p)ThreadCount>;<OpenSessionsHighCount>;↔
<OpenSessionsCurrentCount>;<ConnectionsCurrentCount>;<ConnectionsHighCount>

Example:

100000000;300000000;p70;10;10;10;10

- WebLogic9:

The (jr) stands for (JRockit). This means that these values only are used when JRockit is running. They are ignored when default JVMRuntime is used, but all parameters must be given. Check the example.

generic notation

<(l)(jr)FreeHeap >;<(jr)TotalHeap>;<(jr)UsedHeap>;<HeapSizeCurrent >;↔
<HeapFreeCurrent >;↔
<HeapFreePercent >;<(p)(jr)FreePhysicalMemory>;<(p)(jr)UsedPhysicalMemory>;<(jr)TotalNumberOfThreads>;↔
<(jr)AllProcessorsAverageLoad>;<(jr)JvmProcessorLoad >;↔
<PendingUserRequestCount>;<ExecuteThreadIdleCount>;↔
<HoggingThreadCount>;<ExecuteThreadTotalCount>;<MinThreadsConstraintsPending>;<ThreadQueueLength>

specific notation

<(l)(jr)FreeHeap >;<(jr)TotalHeap>;<(jr)UsedHeap>;<HeapSizeCurrent >;↔
<HeapFreeCurrent >;↔
<HeapFreePercent >;<(p)(jr)FreePhysicalMemory>;<(p)(jr)UsedPhysicalMemory>;<(jr)TotalNumberOfThreads>;↔
<(jr)AllProcessorsAverageLoad>;<(jr)JvmProcessorLoad >;↔
<PendingUserRequestCount>;<ExecuteThreadIdleCount>;↔
<HoggingThreadCount>;<ExecuteThreadTotalCount>;<MinThreadsConstraintsPending>;<QueueLength>

Example:

JRockit JVM:

100000000;400000000;300000000;400000000;100000000;10;p20;p80;80;0.9;0.2;10;10;30;10;10;10

JVMRuntime:

x;x;x;400000000;100000000;10;x;x;x;x;10;10;30;10;10;10

- WebSphere 5:

generic notation

<(l)FreeHeap>;<HeapHighWaterMark>;<CurrentHeap>;<UsedMemory>;↔
<ORBPoolSizeHighWaterMark>;<ORBPoolSizeCurrent>;<ORBActiveThreadsHigh>;<ORBActiveThreadsC
<MessageListenerPoolSizeHiWaterMark>;<MessageListenerPoolSizeCurrent>;<MessageListenerActiveTh
<SOAPConnectorPoolSizeHighWaterMark>;<SOAPConnectorPoolSizeCurrent>;<SOAPConnectorActiveT
<ServletEnginePoolSizeHighWaterMark>;<ServletEnginePoolSizeCurrent>;<ServletEngineActiveThreadsh
<SessionsInvalidateSessions>;<SessionsExternalWriteSize>;<SessionsCacheDiscards>;<SessionsActive
<SessionsActiveSessionsCount>;<SessionsReadSizeCount>;<SessionsReadSizeTotal>;<SessionsCreate
<SessionsExternalInvalidatedViaTimeout>;<SessionsExternalReadTimeCount>;<SessionsExternalReadT
<SessionsLiveSessionsHighWaterMark>;<SessionsLiveSessionsCurrent>;<SessionsExternalWriteTimeCo

specific notation

<(l)stats_jvmRuntimeModule.freeMemory_count>;<stats_jvmRuntimeModule.totalMemory_highWaterMark
<stats_threadPoolModule.poolSize_highWaterMark(ORB)>;<stats_threadPoolModule.poolSize_current(OR
<stats_threadPoolModule.poolSize_highWaterMark(MessageListener)>;<stats_threadPoolModule.poolSize
<stats_threadPoolModule.poolSize_highWaterMark(SOAPConnector)>;<stats_threadPoolModule.poolSize
<stats_threadPoolModule.poolSize_highWaterMark(ServletEngine)>;<stats_threadPoolModule.poolSize_c
<stats_servletSessionsModule.invalidatedSessions_count>;<stats_servletSessionsModule.externalWriteS
<stats_servletSessionsModule.activeSessions_current>;<stats_servletSessionsModule.externalReadSize_
<stats_servletSessionsModule.invalidatedViaTimeout_count>;<stats_servletSessionsModule.externalRea
<stats_servletSessionsModule.liveSessions_highWaterMark>;<stats_servletSessionsModule.liveSessions

Example:

100000000;300000000;400000000;40;50;60;70;80;90;100;110;120;130;140;150;160;170;180;190;200;210

- WebSphere 6:

generic notation

<(l)FreeHeap>;<TotalHeap>;<HeapHighWaterMark>;<MessageListenerPoolSizeCurrent>;↔
<MessageListenerPoolSizeHighWaterMark>;<ORBPoolSizeCurrent>;<ORBPoolSizeHighWaterMark>;↔
<WebcontainerPoolSizeCurrent>;<WebcontainerPoolSizeHighWaterMark>;<LiveSessionsCountCurrent>;↔
<LiveSessionsCountHighWaterMark>

specific notation

<(l)freeMemory>;<heapSize>;<stats_HeapSize_highWaterMark>;<stats_PoolSize_current_MessageLister
<stats_PoolSize_highWaterMark_MessageListener>;<stats_PoolSize_current_ORB.Thread.Pool>;<stats_
<stats_PoolSize_current_WebContainer>;<stats_PoolSize_highWaterMark_WebContainer>;<stats_LiveCo
<stats_LiveCount_highWaterMark>

Example:

100000000;300000000;400000000;40;50;40;50;40;50;40;50

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Parameters not defined or invalid

- ERROR_installation
 - An error while trying to connect to the server occurred

- ERROR_application
 - The Java program returned an error
 - The Web Application was not deployed

FileNet WebLogic7 Status

Description

This monitor is a specialized form of the JMX WebApplication Status monitor.

This monitor checks the status of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. The monitor checks the overall status of the Web Application and compares pre-defined parameter sets of the Application server sets against thresholds. The following servers are supported:

Monitoring Frequency

No default schedule

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

(l)FreeHeap

This is the amount of memory in the Java virtual machine which is still free. If the real value is less than the threshold, the monitor will return an error.

TotalHeap

This is the threshold for the total available memory of the Java virtual machine. It can be used to check if Java uses more memory than expected.

ThreadCount

The number of threads that this execute queue can currently have.

ThreadsMaximum

The maximum number of threads this execute queue can have.

OpenSessionsHighCount

Returns the high water mark of the total number of open sessions in this server. The count starts at zero each time the server is activated. Note that this is an optimization method for a highly useful statistic that could be implemented less efficiently using change notification.

OpenSessionsCurrentCount

Returns the current total number of open sessions in this component.

ConnectionsCurrentCount

Returns the current number of connections to this WebLogic Server.

ConnectionsHighCount

Returns the peak number of connections to this WebLogic Server since the last reset.

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Parameters not defined or invalid

- ERROR_installation
 - An error while trying to connect to the server occurred

- ERROR_application
 - The Java program returned an error
 - The Web Application was not deployed

FileNet WebLogic8 Status

Description

This monitor is a specialized form of the JMX WebApplication Status monitor.

This monitor checks the status of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. The monitor checks the overall status of the Web Application and compares pre-defined parameter sets of the Application server sets against thresholds. The following servers are supported:

Monitoring Frequency

No default schedule

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

(l)FreeHeap

This is the amount of memory in the Java virtual machine which is still free. If the real value is less than the threshold, the monitor will return an error.

TotalHeap

This is the threshold for the total available memory of the Java virtual machine. It can be used to check if Java uses more memory than expected.

ThreadCount

The number of threads that this execute queue can currently have.

ThreadsMaximum

The maximum number of threads this execute queue can have.

OpenSessionsHighCount

Returns the high water mark of the total number of open sessions in this server. The count starts at zero each time the server is activated. Note that this is an optimization method for a highly useful statistic that could be implemented less efficiently using change notification.

OpenSessionsCurrentCount

Returns the current total number of open sessions in this component.

ConnectionsCurrentCount

Returns the current number of connections to this WebLogic Server.

ConnectionsHighCount

Returns the peak number of connections to this WebLogic Server since the last reset.

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Parameters not defined or invalid

- ERROR_installation
 - An error while trying to connect to the server occurred

- ERROR_application
 - The Java program returned an error
 - The Web Application was not deployed

FileNet WebLogic9 Status

Description

This monitor is a specialized form of the JMX WebApplication Status monitor.

This monitor checks the status of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. The monitor checks the overall status of the Web Application and compares pre-defined parameter sets of the Application server sets against thresholds. The following servers are supported:

Monitoring Frequency

No default schedule

Parameters

If JRockit Runtime is used, then all thresholds must be given. If JVMRuntime

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

(l)FreeHeap

This is the amount of memory in the Java virtual machine which is still free. If the real value is less than the threshold, the monitor will return an error.

TotalHeap

This is the threshold for the total available memory of the Java virtual machine. It can be used to check if Java uses more memory than expected.

UsedHeap

This is the amount of memory in kByte which is in use by Java.

HeapSizeCurrent

This is the amount of memory in kByte which Java has allocated for usage.

HeapFreeCurrent

This is the amount of memory in kByte which is free for Usage.

HeapFreePercentage

This is the percentage of free memory. The result is in between 0 up to 1.0 which is 100 percent.

(p)FreePhysicalMemory

This is the amount of physical memory in kByte which is free for all kind of processes.

(p)UsedPhysicalMemory

This is the amount of physical memory in kByte which is in use by different processes.

TotalNumberOfThreads

The number of Java threads (daemon and non-daemon) that are currently running in the Virtual Machine across all processors.

AllProcessorsAverageLoad

A snapshot of the average load of all processors in the host computer. If the computer has only one processor, this method returns the same value as `getJvmProcessorLoad(0)`. The value is returned as a double, where 1.0 represents 100% load (no idle time) and 0.0 represents 0% load (pure idle time).

JvmProcessorLoad

A snapshot of the load that the Virtual Machine is placing on all processors in the host computer. If the host contains multiple processors, the value represents a snapshot of the average load. The value is returned as a double, where 1.0 represents 100% load (no idle time) and 0.0 represents 0% load (pure idle time).

PendingUserRequestCount

The number of pending user requests in the priority queue. The priority queue contains requests from internal subsystems and users. This is just the count of all user requests.

ExecuteThreadIdleCount

The number of idle threads in the pool.

HoggingThreadCount

Returns the threads that are being hogged by a request right now. These threads will either be declared as stuck after the configured timeout or will return to the pool before that. The self-tuning mechanism will backfill if necessary.

ExecuteThreadTotalCount

The total number of threads in the pool.

MinThreadsConstraintsPending

Number of requests that should be executed now to satisfy the min threads requirement

ThreadQueueLength

The number of pending requests in the priority queue. This is the total of internal system requests and user requests.

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Parameters not defined or invalid

- ERROR_installation
 - An error while trying to connect to the server occurred

- ERROR_application
 - The Java program returned an error
 - The Web Application was not deployed

FileNet WebSphere5 Status

Description

This monitor is a specialized form of the JMX WebApplication Status monitor.

This monitor checks the status of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. The monitor checks the overall status of the Web Application and compares pre-defined parameter sets of the Application server sets against thresholds. The following servers are supported:

Monitoring Frequency

No default schedule

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

(l)FreeHeap

This is the amount of memory in the Java virtual machine which is still free. If the real value is less than the threshold, the monitor will return an error.

HeapHighWaterMark

The amount of memory in kBytes which was maximal initialized by Java

CurrentHeap

The amount of memory in kByte that Java can use at the moment

UsedMemory

The amount of memory in kByte that Java is using at the moment

ORBPoolSizeHighWaterMark

The high water mark count for the ORB thread pool

ORBPoolSizeCurrent

The count of the current ORB thread pool size

ORBActiveThreadsHighWaterMark

The count of the ORB thread pool high water mark

ORBActiveThreadsCurrent

The count of the ORB thread pool current

MessageListenerPoolSizeHiWaterMark

The high water mark count for the Message Listener thread pool

MessageListenerPoolSizeCurrent

The count of the current MessageListener thread pool size

MessageListenerActiveThreadsHighWaterMark

The count of the Message Listener thread pool high water mark

MessageListenerActiveThreadsCurrent

The count of the Message Listener thread pool current

SOAPConnectorPoolSizeHighWaterMark

The high water mark count for the SOAP Connector thread pool

SOAPConnectorPoolSizeCurrent

The count of the current SOAP Connector thread pool size

SOAPConnectorActiveThreadsHighWaterMark

The count of the SOAP Connector thread pool high water mark

SOAPConnectorActiveThreadsCurrent

The count of the SOAP Connector thread pool current

ServletEnginePoolSizeHighWaterMark

The high water mark count for the Servlet Engine thread pool

ServletEnginePoolSizeCurrent

The count of the Servlet Engine thread pool current

ServletEngineActiveThreadsHighWaterMark

The count of the Servlet Engine thread pool current

ServletEngineActiveThreadsCurrent

The count of the Servlet Engine thread pool current

SessionsInvalidateSessions

The count of invalidated sessions

SessionsExternalWriteSize

External write size

SessionsCacheDiscards

Count of session cahche discards

SessionsActiveSessionsHighWaterMark

The high water mark of active sessions

SessionsActiveSessionsCount

The actual count of active sessions

SessionsReadSizeCount

The sessions read size count

SessionsReadSizeTotal

The total ammount of read size

SessionsCreatedSessions

The count of created sessions

SessionsExternalInvalidatedViaTimeout

The count of sessions which have been invalidated because of a timeout

SessionsExternalReadTimeCount

The count of sessions read time

SessionsExternalReadTimeTotal

The count of sessions read time total

SessionsLiveSessionsHighWaterMark

The high water mark of live sessions

SessionsLiveSessionsCurrent

The current count of live sessions

SessionsExternalWriteTimeCount

The count of sessions write time

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Parameters not defined or invalid

- ERROR_installation
 - An error while trying to connect to the server occurred

- ERROR_application
 - The Java program returned an error
 - The Web Application was not deployed

FileNet WebSphere6 Status

Description

This monitor is a specialized form of the JMX WebApplication Status monitor.

This monitor checks the status of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. The monitor checks the overall status of the Web Application and compares pre-defined parameter sets of the Application server sets against thresholds. The following servers are supported:

Monitoring Frequency

No default schedule

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

(l)FreeHeap

This is the amount of memory in the Java virtual machine which is still free. If the real value is less than the threshold, the monitor will return an error.

TotalHeap

This is the amount of memory which is reserved for Java

HeapHighWaterMark

The amount of memory in kBytes which was maximal initialized by Java

MessageListenerPoolSizeCurrent

The count of the current MessageListener thread pool size

MessageListenerPoolSizeHighWaterMark

The high water mark count for the Message Listener thread pool

ORBPoolSizeCurrent

The count of the current ORB thread pool size

ORBPoolSizeHighWaterMark

The high water mark count for the ORB thread pool

WebContainerPoolSizeCurrent

The count of the current WebContainer thread pool size

WebContainerSizeHighWaterMark

The high water mark count for the WebContainer thread pool

LiveSessionsCountCurrent

The number of active sessions at the moment

LiveSessionsCountHighWaterMark

The maximum of simultaneous active sessions

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - Parameters not defined or invalid

- ERROR_installation
 - An error while trying to connect to the server occurred

- ERROR_application
 - The Java program returned an error
 - The Web Application was not deployed

FileNet WebApplication Thresholds

Description

Hint: This chapter is written for JMX experienced users. For an introduction to JMX and further information about necessary parameters check the chapter "Preparing JMX Support" of the installation guide.

This monitor checks the thresholds of deployed FileNet Web Applications. It connects to an Application server and gathers information via JMX. It is possible to monitor the value of single values (numeric), compare one single value to a threshold (numeric, alpha numeric). Further on it is possible to compare multiple attributes against a threshold or find the maximum, minimum or build the sum of multiple attributes of the same kind of data.

Monitoring Frequency

No default schedule

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Instance (Mandatory)

This finally is the instance which contains the JMX specific data like connection data, user data, Java path and some more.

Object name (Mandatory)

The ObjectName(s) of the MBeans which shall be monitored. If multiple ObjectNames are specified they need to be separated with semicolon. The ObjectName parameter require quotes, because ObjectNames may contain spaces which would lead to a missinterpreting during monitor execution.

Action (Mandatory)

The action that shall be performed. The following actions are valid:

- attribute - To call the MBean's attribute
- operation - To invoke an MBean's operation
- stats_attribute - To call stats attributes. In a stats_attribute request only attributes from the type "stats" can be requested. Further information about special rules is listed in the "Preparing JMX Support" chapter

- stats_operation - To invoke stats operations. In a stats_operation request only operations with the return type "stats" can be requested. Further information about special rules is listed in the "Preparing JMX Support" chapter

Action name (Mandatory)

The name of the action that shall be performed. There is a restriction on action names for operations. Only operations beginning with the following prefixes are allowed. This is to prevent a non reading operation from being invoked.

- check...
- find...
- get...
- has...
- is...
- list...
- lookup...

The following prefixes are forbidden

- findOr...

The action names are separated via semicolon (;)

Action names can be given in the following variations:

- <actionname> - single action name
- <actionname1>;;<actionname1>;;<actionname1>... - This syntax is used for the analyzation type mode (MIN, MAX, SUM). In this mode many actionnames (1 per request) can be given. Only values having the same action name can be used with this mode. As every ObjectName only can have one action with the action name "actionname1", the delimiters (::) are necessary to differ between the several ObjectNames.
- <actionname>,<operator>,<threshold> - single action name with comparison against threshold.
- <actionname1>,<operator1>,<threshold1>;<actionname2>,<operator2>,<threshold2> ... - multiple actions with comparison against threshold

If several action names are given for several ObjectNames, they are separated with two colons (::). The delimiter (::) tells the monitor, that the following action name belongs to the next ObjectName.

- <actionnames_objectname1>;;<actionnames_objectname2>... - multiple actions

Example: hitCount,<,2000;memory,>=,4000;::;hitCount,<,3000

This request requires that two ObjectNames are given. Of the first ObjectName the actions hitCount and memory are requested, and compared to their thresholds. 2000 for hitCount and 4000 for memory. The two colons define, that the following action names are used for the next (in this case the second) ObjectName. The second ObjectName will be requested for hitCount, which is compared with 3000. These rules define the bad case. For example (hitCount,<,2000) will return OK when hitCount is 4000, but Not_OK when the hitCount is 1000.

Valid operators: "=", "!=", "<", ">", ">=", "<="

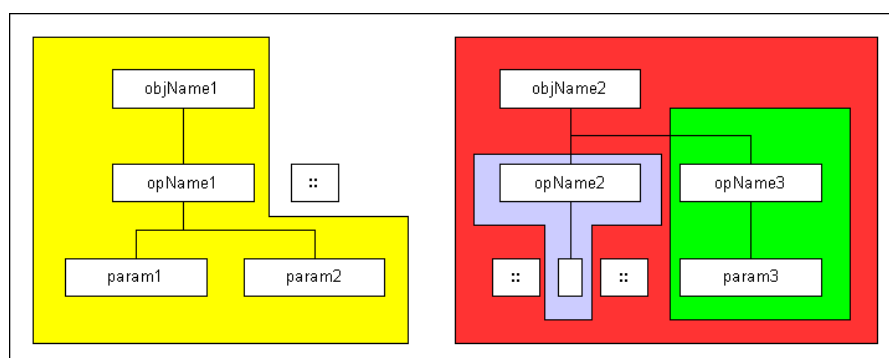
Parameters (Case dependent)

The operation's parameters, if the action is "operation". Several parameters are separated with semicolon (;). Several parameters for different ObjectNames are separated with two colons (::). The parameters can be numeric or alphanumeric.

Signatures (Case dependent)

The operation's signatures, if the action is "operation". Several signatures are separated with semicolon (;). Several signatures for different ObjectNames are separated with two colons (::). The signature is the class-type in Java notation. For example "java.lang.Integer" for int.

Example for parameters and signatures with multiple operation calls and multiple ObjectNames:



Example - parameters and signatures

- ObjectNames: "objName1;objName2"
- operation names: "opName1;;;opName2;opname3"
- parameters: "param1;param2;;;;param3"
- signature: "sig1;sig2;;;;sig3"

Analysis Type (Optional)

The analyzation type is used to find the minimum, maximum or the sum of a set of action names with the same name (In this way, the maximum of several UpTime values can be found). This option can only be used, if the same attribute is asked from different ObjectNames. The following options are available:

- MIN - Find the minimum
- MAX - Find the maximum
- SUM - add up all results

Hint: Do not use the MIN, MAX or SUM analyzation type, when running the monitor in threshold comparison mode.

Label (Optional)

The label gives the opportunity to add additional information to the output. It may be used for debugging, but is not necessary to use the monitor.

Return Values

ok

All values passed threshold checking.

not_ok

At least one result did not pass threshold checking.

An error occurred

numeric value

If a single value was requested or the analyzation type option is used, a numeric value is returned as result.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
 - parameters were not defined or were defined not valid
- ERROR_installation
 - An error while trying to connect to the server occurred
- ERROR_application
 - The Java program returned an error

FileNet Object Store Monitor

Description

The monitor checks FileNet Object Store Listener Parameters

Monitoring Frequency

No default schedule defined.

Parameters

System (Mandatory)

Specify the FileNet P8 4.x system name.

Product (Mandatory)

This is the product name (of the Content Engine or Application Engine) which shall be monitored.

Server (Mandatory)

This is the server for which the instance was defined, which contains the configuration (connection data, user data, Java path) for the web application.

Object Store name

Specify a Object Store name here or `ALL_OBJECTSTORES` (default).

Wildcard '*' can be used to check more than one Objectstore, for instance 'Myobjectstore*' that matches for all Objectstores starting with 'Myobjeststore'.

Objectstore parameters (parameter sets)

List of Object Store parameter sets to check. One parameter set contains either the Listener parameter itself, e.g. 'Folder Creations' or the parameter with a comparison sign and the threshold. Example: Document Modifications,>,2
Parameter sets are separated by ';'. Possible comparison signs are '<', '<=', '>' and '>='.

If parameter sets are specified the monitor returns 'ok', if the returned value doesn't conflict with the associated threshold.

Otherwise 'not_ok' is returned. If only the Listener parameter (without threshold and comparison sign) is specified the numeric value is returned. Note: Use wildcard '*' carefully when you define parameters.

You can list all available Listener paths for the server you want to monitor by executing the

FSM Task/Job: 'Execute/Run Listener request'.

Analyzation type

Possible values: `MAX`, `MIN`, `SUM`: Checks for the highest, lowest or sum of all detected values (if more than one Object Store or wildcards are specified)

PathHeader

This is a part of the path. The path is build up as follows:

`/<appliactionName>/*/*/<pathheader>/`

Application name is taken from the installation. The actual parameter is PathHeader.

Return Values

ok

None of the checked parameters (Listener path) reached the specified thresholds (multiple parameters checked).

numeric value greater than 0

Numeric result of the (single) checked parameter (Listener path).

not_ok

At least one checked parameters (Listener Path) reached the specified thresholds.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- `ERROR_usage`
 - Variable not specified
 - general usage

- `ERROR_installation`
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- `ERROR_system`
 - Command not found
 - Tools directory not found

Index Database Availability

Description

This monitor checks the availability of the Index Database.

Monitoring Frequency

Default is once every hour.

Parameters

None

Return Values

available

The Index database is available.

unavailable

The Index database is not available.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Invalid database name
- ERROR_rdbms
 - Sqltool did not return any result
 - Database error
 - Login to database failed
- ERROR_application

- Error executing database command
- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid
 - Cannot create temporary file

Locked Queue Work Objects

Description

This monitor check for Work objects of a queue, that are locked longer than a specified timeframe (in seconds).

Monitoring Frequency

No default schedule.

Parameters

System

Name of the Process Engine System

Product (Mandatory)

This is the configured product environment which shall be monitored.

Server (Mandatory)

This is the server instance that should be monitored.

Isolated Region

Number of isolated region to check.

Queue Name

Comma-separated list of queue names whose number of entries is monitored or `ALL_QUEUES` (default). The queue name entered here is case-insensitive.

Time frame

Timeframe in seconds to check for locked Work objects. It is important that the system time and time zone are specified properly. Otherwise the timeframe cannot be calculated correctly.

Return Values

ok

The specified queue(s) do not contain Work Objects locked longer than the timeframe.

not_ok

At least one specified queue contains locked work objects older than the timeframe. Check the output for further information.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable/parameter not specified
 - general usage

- ERROR_installation
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- ERROR_application
 - Error executing vwtool command

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Locked Roster Work Objects

Description

This monitor check for Work objects of a roster, that are locked longer than a specified timeframe (in seconds).

Monitoring Frequency

No default schedule.

Parameters

System

Name of the Process Engine System

Product (Mandatory)

This is the configured product environment which shall be monitored.

Server (Mandatory)

This is the server instance that should be monitored.

Isolated Region

Number of isolated region to check.

Queue Name

Comma-separated list of roster names whose number of entries is monitored or ALL_ROSTERS (default). The roster name entered here is case-insensitive.

Time frame

Timeframe in seconds to check for locked Work objects. It is important that the system time and time zone are specified properly. Otherwise the timeframe cannot be calculated correctly.

Return Values

ok

The specified roster(s) do not contain Work Objects locked longer than the timeframe.

not_ok

At least one specified roster contains locked work objects outside the timeframe. Check the output for further information.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable/parameter not specified
 - general usage

- ERROR_installation
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- ERROR_application
 - Error executing vwtool command

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Logged On Users

Description

This monitor returns the number of users actually logged on to the specific FileNet server. This monitor can be used for SLU usage analysis.

Monitoring Frequency

Default is once every hour.

Parameters

FileNet Domain

domain or server to check; default is the local domain

Return Values

≥ 0

number of users logged in at selected server or domain

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
- -50 (application error)
 - Tool did not return any result
 - Tool returned invalid result
 - Program not running
- -60 (MKF database error)
 - Invalid MKF database type

- MKF database file not found
 - MKF database not running
 - MKF database type not available on server
-
- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Memory Usage

Description

This monitor shows information about memory usage on a Process Engine server.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Memory Type

Type of memory usage to monitor. Valid values are:

- **allocated** for the total OS memory in bytes in use
- **used** for the total VW memory in bytes in use
- **blocks** for the number of OS blocks in use
- **sharedavail** for the total shared memory available in MB
- **allocseg** for the current number of allocated segments
- **freeseq** for the current number of free segments

Return Values

>=0

Memory usage in bytes or blocks

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified

- Variable not valid
- general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

MKF Non Virgin Blocks

Description

Monitors the percentage of "non-virgin" record blocks in MKF databases.

Monitoring Frequency

Default is once every 20 minutes.

Parameters

DB name

Comma-separated list of MKF database names. Valid values are `Permanent`, `Security` and `Transient` or `ALL` (default).

Return Values

≥ 0

Numeric value representing the highest percentage of non-virgin blocks in the specified MKF databases. The additional info contains a list of all specified MKF databases and the respective values.

Suggested thresholds are $>85\%$ for a Critical event, $>75\%$ for a Warning event and $<70\%$ for a Harmless event.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - Variable not valid
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
- -50 (application error)
 - Tool returned invalid result

- -60 (MKF database error)
 - Invalid MKF database type
 - MKF database file not found
 - MKF database not running
 - MKF database type not available on server

- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Database Size

Description

This monitor checks the database size for the index database.

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 20 minutes.

Parameters

Dataspace

Check size of dataspace (yes / no)

Logspace

Check size of logspace (yes / no)

Return Values

≥ 0

Database size in MB. Depending on the selection, this is the size of dataspace or logspace or the total size (dataspace + logspace).

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager

- Invalid database name
- -40 (database error)
 - Database error
 - Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Database Status

Description

This monitor checks the database status for the index database

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 5 minutes.

Parameters

None

Return Values

available

The database is in normal processing mode.

unavailable

The database is in an error state. See additional info for the actual state information.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage
- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name

- ERROR_rdbms
 - Database error
 - Database not running

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Dataspace Used

Description

This monitor checks the amount of used dataspace for the index database.

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 30 minutes.

Parameters

None

Return Values

≥ 0

amount of used dataspace in MB

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - Database error

- Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Dataspace Used Pct

Description

This monitor checks the percentage of used dataspace for the index database.

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 30 minutes.

Parameters

None

Return Values

≥ 0

Percentage used database space \leftrightarrow total database space

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - Database error

- Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Logspace Used

Description

This monitor checks the amount of used logspace for the index database.

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 30 minutes.

Parameters

None

Return Values

≥ 0

amount of used dataspace in MB

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - Database error

- Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Logspace Used Pct

Description

This monitor checks the percentage of used logspace for the index database.

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 30 minutes.

Parameters

None

Return Values

≥ 0

Percentage used logspace \leftrightarrow total logspace

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - Database error

- Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Number Of Processes

Description

This monitor checks the number of processes for the index database.

This monitor can only be run on a Database Server (MSSQLServer) on Windows systems.

Monitoring Frequency

Default is once every 10 minutes.

Parameters

None

Return Values

≥ 0

number of active processes

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Invalid platform
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - Database error

- Database not running
- -70 (system error)
 - Command not found
 - Tools directory not found
 - Product name not valid

MSSQL Processes

Description

Monitors the MSSQLServer service.

Monitoring Frequency

Default is once every 5 minutes.

Parameters

None

Return Values

up

The MSSQLServer is running.

down

The MSSQLServer is not running.

remote

The MSSQLServer is installed on a remote server.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Invalid platform

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name invalid

Oracle Datafile Available

Description

Checks whether a specified Oracle datafile is available

Monitoring Frequency

Default is once every 20 minutes.

Parameters

Datafile

Comma-separated list of full-qualified datafile names (e.g.
`/usr/ora/920/oradata/IDB/fntmp_ts.dbf,/usr/ora/920/oradata/IDB/fnusr_ts.dbf`)
or `ALL_DATAFILES` to check all datafiles (default)

Return Values

available

All specified datafiles are available.

unavailable

At least one of the specified datafiles is not available. The additional info contains a list of all datafiles that are offline.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- Invalid database name

- ERROR_rdbms
 - SQL tool did not return any result
 - SQL tool returned invalid result
 - Database error
 - Internal error executing SQL statement
 - Database is currently starting or stopping
 - Database not running
 - Login to database failed

- ERROR_application
 - Program not running
 - Service not running

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Oracle Free Tablespace

Description

This monitor returns the total amount of freespace in Kbyte for all datafiles in the specified tablespace.

Monitoring Frequency

Default is once every hour.

Parameters

Tablespace Name

Tablespace name (e.g. `SYSTEM`)

Return Values

≥ 0

Numeric value representing the total amount of freespace in Kbyte.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - SQL tool did not return any result

- SQL tool returned invalid result
- Database error
- Internal error executing SQL statement
- Database is currently starting or stopping
- Database not running
- Login to database failed

- -50 (application error)
 - Program not running
 - Service not running

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not running

Oracle Next Extent

Description

This monitor checks if there is enough freespace available for the next extent. This check is performed against the largest contiguous block of freespace.

The OracleNextExtend monitor checks for each object in the given tablespace if there is enough freespace for two extents of the object. This check is performed against the largest contiguous block of freespace.

The following objects are checked: tables, indexes, clusters and rollback segments.

The check is performed for every single object. The status `available` does NOT imply that there is enough space if all objects request two extents at the same time.

In addition, it is checked if an object has already reached its maximum number of extents.

Monitoring Frequency

Default is once every hour.

Parameters

Tablespace Name

Tablespace name (e.g. `SYSTEM`)

Return Values

`available`

There is enough free space for the next extent in the specified tablespace.

`unavailable`

There is not enough freespace one or more objects to extend twice or one or more objects have reached their maximum number of extents. The additional info contains a list of these objects and a specific description of the error.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- `ERROR_usage`
 - Variable not specified
 - general usage
- `ERROR_installation`

- Command not found
- Environment file not found
- Environment variable not set
- Database type not valid
- Server not configured for Library System
- Server is no Property Manager
- Invalid database name

- ERROR_rdbms
 - SQL tool did not return any result
 - SQL tool returned invalid result
 - Database error
 - Internal error executing SQL statement
 - Database is currently starting or stopping
 - Database not running
 - Login to database failed

- ERROR_application
 - Program not running
 - Service not running

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Oracle NonActive Redologs

Description

Returns the number non active Oracle Redologs. Non active redologs are redologs with state `STALE`, `CURRENT` OR `INACTIVE`.

Monitoring Frequency

Default is once every 20 minutes.

Parameters

None

Return Values

≥ 0

Number of non-active redologs.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name
- -40 (database error)
 - SQL tool did not return any result
 - SQL tool returned invalid result
 - Database error

- Internal error executing SQL statement
- Database is currently starting or stopping
- Database not running
- Login to database failed

- -50 (application error)
 - Program not running
 - Service not running

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Oracle Processes

Description

Monitors FileNet Oracle processes or Oracle NT services if FileNet is configured to run against Oracle.

Monitored processes are: **ora_pmon_<database ID>**, **ora_smon_<database ID>**, **ora_lgwr_<database ID>**, **ora_dbwr_<database ID>**.

Monitoring Frequency

Default is once every 5 minutes.

Parameters

Check Listener With Tools

Specify **Y** to check the listener with the tools **lsnrctl** and **tnsping**. Specify **N** to skip this check.

Listener Name

Listener name.

Listener Password

Encrypted password of the listener. Leave this field empty or enter **__UNSET__** if no password exists.

Return Values

up

The Oracle database is running.

down

The Oracle database is not running.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage
- ERROR_installation

- Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager
-
- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Oracle Rollback Segment Online

Description

Checks whether a specified FileNet Oracle Rollback Segment is online or not.

Monitoring Frequency

Default is once every 20 minutes.

Parameters

Rollback Segment

Comma-separated list of rollback segment names (e.g. `RS0,RS1,SYSTEM`) or `ALL_SEGMENTS` to check all rollback segments (default)

Return Values

online

All specified rollback segments are online.

offline

At least one of the specified rollback segments is offline. The additional info contains a list of all rollback segments that are offline.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- ERROR_rdbms
 - SQL tool did not return any result
 - SQL tool returned invalid result
 - Database error
 - Internal error executing SQL statement
 - Database is currently starting or stopping
 - Database not running
 - Login to database failed

- ERROR_application
 - Program not running
 - Service not running

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Oracle Tablespace Available

Description

Monitors a specified FileNET Oracle Tablespace for availability.

Monitoring Frequency

Default is once every 20 minutes.

Parameters

Tablespace

Comma-separated list of tablespace names (e.g. `SYSTEM,FNTMP_TS,FNSYS_TS`) or `ALL_TABLESPACES` to check all tablespaces (default)

Return Values

available

All specified tablespaces are available.

unavailable

At least one of the specified tablespaces is not available. The additional info contains a list of all tablespaces that are offline.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager
 - Invalid database name

- ERROR_rdbms
 - SQL tool did not return any result
 - SQL tool returned invalid result
 - Database error
 - Internal error executing SQL statement
 - Database is currently starting or stopping
 - Database not running
 - Login to database failed

- ERROR_application
 - Program not running
 - Service not running

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Oracle User Account Status

Description

Monitors whether a specified Oracle account will expire within the next days.

Monitoring Frequency

Default is once every 20 minutes.

Parameters

User Account

name of user account to check

Days

number of days to check from current date

Return Values

ok

The Oracle account will not expire within specified number of days.

not_ok

The Oracle account will expire within the specified number of days.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - general usage

- ERROR_installation
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Database type not valid
 - Server not configured for Library System
 - Server is no Property Manager

- Invalid database name

- ERROR_rdbms
 - SQL tool did not return any result
 - SQL tool returned invalid result
 - Database error
 - Internal error executing SQL statement
 - Database is currently starting or stopping
 - Database not running
 - Login to database failed

- ERROR_application
 - Program not running
 - Service not running

- ERROR_system
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Process Status

Description

This monitor returns the number of VW processes with the specified status.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Status List

List of states separated by `,` or `;`. The entries of this list are case-insensitive. The entries cannot be abbreviated, e.g. `listen` does not match processes with status `Listening`.

All processes that have a status that is listed here will be counted. If the list starts with a `!`, all processes that do not have a status that is listed here will be counted.

Example: `!sleeping,listening` counts all processes that are neither sleeping nor listening.

Process Name

Optional. If you specify a process name, only processes that match the given name will be counted. The process name is case-insensitive and is treated as a wildcard. For example, if you specify `vws`, the monitor checks for `vwsS` as well as for `vwstat` entries.

Return Values

`>=0`

Number of processes

The additional info contains a list of all processes that matched the search criteria.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Queue Length

Description

This monitor returns the number of entries currently in memory for a specified queue.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Isolated Region

Number of isolated region to check.

Queue Name

Comma-separated list of queue names whose number of entries is monitored or `ALL_QUEUES` (default). Valid system queue names are `Instruction Sheet Interpreter` and `Delay`. The queue name entered here is case-insensitive.

Return Values

≥ 0

Largest number of queue entries; the values for all specified queues are listed in the additional info.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - Variable not valid
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Queue Statistic

Description

This monitor checks a specific statistical value for a given queue.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Isolated region

Isolated Region number

Queue Name

Comma-separated list of queue names whose number of entries is monitored or ALL_QUEUES (default). The queue name entered here is case-insensitive.

Statistic Value

Name of the statistic value. Valid values are:

1 AVG_DELAY	Average Queue Delay
2 AVG_QUEUE_DEPTH	Average Queue Depth
3 AVG_THROUGHPUT	Average Throughput
4 AVG_WO_PROCESSED	Average Processed Wos
5 AVG_WO_LOCKED	Average WO Locked
6 AVG_WO_PROC_TIME	Average WO Processing Time
7 CURR_QUEUE_DEPTH	Current Queue Depth
8 CURR_WO_LOCKED	Current WOs Locked
9 RATE_QUEUE_GROW	Queue Grow Rate
10 RATE_QUEUED	Queued Rate
11 RATE_DEQUEUED	Dequeued Rate
12 SUM_TIME_SERVICE	Total Service Time
13 SUM_TIME_ABORTED	Total Aborted Time

14 SUM_QUEUE_DEPTH	Summation Queue Depth
15 SUM_WO_PROCESSED	Summation WO Processed
16 SUM_WO_LOCKED	Summation WO Locked
17 SUM_WO_QUEUED	Total WOs Queued
18 SUM_WO_DEQUEUED	Total WOs Dequeued
19 SUM_WO_ABORTED	Total WOs Aborted
20 SUM_WO_DURATION	Summation Duration WOs in Queue
21 WO_INITIAL	Initial Number of WO Queued
22 WO_REMAINING	Number of Remaining Queued
23 WO_PROCESSED	WO Processed

You can specify either the text or the corresponding numerical value.

Return Values

>=0

Largest selected statistical value; the values for all specified queues are listed in the additional info.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - Variable not valid
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Rejected Users

Description

Monitors the number of rejected user logins since last reboot.

Monitoring Frequency

Default is once every hour.

Parameters

License type

specific license type (1..16) or ALL

Return Values

≥ 0

Rejected user login count.

If all license types are checked, the highest number is returned. The additional info contains a list of all license types and corresponding values.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not valid / no directory
 - general usage
- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
- -50 (application error)
 - Tool did not return any result
 - Tool returned invalid result
 - Program not running

- -60 (MKF database error)
 - Invalid MKF database type
 - MKF database file not found
 - MKF database not running
 - MKF database type not available on server

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Roster Statistic

Description

This monitor checks a specific statistical value for a given roster.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Isolated region

Isolated Region number

Roster Name

Comma-separated list of roster names whose number of entries is monitored or ALL_ROSTERS (default). The roster name entered here is case-insensitive.

Statistic Value

Name of the statistic value. Valid values are:

1 AVG_WO_ACTIVE	Average Number of Active WOs
2 AVG_WO_ACTIVE_PARENT	Average Number of Active Parents
3 AVG_WO_ACTIVE_CHILD	Average Number of Active Children
4 AVG_WO_LIFESPAN	Average Life Span of WOs
5 AVG_WO_LIFESPAN_PARENT	Average Life Span of Parents
6 AVG_WO_LIFESPAN_CHILD	Average Life Span of Children
7 CURR_WO_ACTIVE	Current Total Number of Active WOs
8 CURR_WO_ACTIVE_PARENT	Current Number of Active Parents
9 CURR_WO_ACTIVE_CHILD	Current Number of Active Children
10 RATE_CREATE	Total Creation Rate
11 RATE_CREATE_PARENT	Parent Creation Rate
12 RATE_CREATE_CHILD	Children Creation Rate
13 RATE_TERMINATE	Total Termination Rate

14 RATE_TERMINATE_PARENT	Parent Termination Rate
15 RATE_TERMINATE_CHILD	Children Termination Rate
16 RATE_GROWTH	Total Growth Rate
17 RATE_GROWTH_PARENT	Parent Growth Rate
18 RATE_GROWTH_CHILD	Children Growth Rate
19 SUM_WO_REMAINING	Total Number of Remaining WOs
20 SUM_WO_REMAINING_PARENT	Number of Remaining Parents
21 SUM_WO_REMAINING_CHILD	Number of Remaining Children
22 SUM_WO_CREATED	Total Number of Created WOs
23 SUM_WO_CREATED_PARENT	Number of Created Parents
24 SUM_WO_CREATED_CHILD	Number of Created Children
25 SUM_WO_TERMINATED	Total Number of Terminated WOs
26 SUM_WO_TERMINATED_PARENT	Number of Terminated Parents
27 SUM_WO_TERMINATED_CHILD	Number Of Terminated Children
28 SUM_WO_LIFESPAN	Summation WOs Life Span
29 SUM_WO_LIFESPAN_PARENT	Summation Parents Life Span
30 SUM_WO_LIFESPAN_CHILD	Summation Children Life Span
31 SUM_WO_ACTIVE	Summation Active WOs
32 SUM_WO_ACTIVE_PARENT	Summation Active Parents
33 SUM_WO_ACTIVE_CHILD	Summation Active Children
34 WO_INITIAL	Initial Number of WOs
35 WO_INITIAL_PARENT	Number of Initial Parents
36 WO_INITIAL_CHILD	Number of Initial Children

You can specify either the text or the corresponding numerical value.

Return Values

>=0

Largest selected statistical value; the values for all specified rosters are listed in the additional info.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- -10 (usage error)
 - Variable not specified
 - Variable not valid
 - general usage

- -30 (installation error)
 - Command not found
 - Environment file not found
 - Environment variable not set
 - Server not configured for System
 - Server is no PPM server

- -50 (application error)
 - Program not running
 - Service not running
 - Error executing tool

- -70 (system error)
 - Cannot create temporary file
 - Command not found
 - Tools directory not found
 - Product name not valid

Security Database Availability

Description

Monitors availability of the MKF Security Database

Monitoring Frequency

Default is once every 20 minutes.

Parameters

None

Return Values

up

The Security MKF database is running.

down

The Security MKF database is not running.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - general usage
- ERROR_installation
 - Command not found
 - Environment file not found
- ERROR_application
 - Tool did not return any result
- ERROR_mkfdb
 - Invalid MKF database type
 - MKF database file not found
 - MKF database type not available on server

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Status Component Manager

Description

This monitor checks the status of the Component Manager on a specific server of a FileNet P8 4.x system.

Note: For Tivoli ITM and the non-Tivoli based version, you can use the monitor ComponentStatus with component CM as well.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x (Component Manager) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Return Values

ok

Component Manager is running.

not_ok

Component Manager is stopped. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - Component not installed
 - general usage

- ERROR_installation
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- ERROR_application
 - Error checking RMI registry

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Status Image Manager

Description

This monitor checks the status of the Mini IS on a specific server of a FileNet P8 4.x system (Process Engine).

Note: For Tivoli ITM and the non-Tivoli based version, you can use the monitor `ComponentStatus` with component `IS` as well.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Return Values

ok

Image Manager is running.

not_ok

Image Manager is stopped. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - Component not installed
 - general usage

- ERROR_installation
 - Environment file not found
 - Environment variable not set
 - Server not configured for System

- ERROR_application
 - Interpreter not set

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Status PPM

Description

This monitor checks the status of the PPM on a specific server of a FileNet P8 4.x system.

Note: For Tivoli ITM and the non-Tivoli based version, you can use the monitor `ComponentStatus` with component `PPM` as well.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Return Values

ok

PPM is running.

not_ok

PPM is stopped. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - Component not installed
 - general usage
- ERROR_installation

- Environment file not found
- Environment variable not set
- Server not configured for System

- ERROR_application
 - Error checking RMI registry

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Status Router

Description

This monitor checks the status of all routers on a specific server of a FileNet P8 4.x system.

Note: For Tivoli ITM and the non-Tivoli based version, you can use the monitor `ComponentStatus` with component `ROUTER` as well.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Return Values

ok

All routers are running.

not_ok

One or more routers are not running. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - Component not installed
 - general usage
- ERROR_installation

- Environment file not found
- Environment variable not set
- Server not configured for System

- ERROR_application
 - Error checking RMI registry

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Status VWServices

Description

This monitor checks the status of the Windows service VWServices on a specific server of a FileNet P8 4.x system.

Note: For Tivoli ITM and the non-Tivoli based version, you can use the monitor ComponentStatus with component EPROCESS as well.

Monitoring Frequency

No default schedule.

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Return Values

ok

VWServices is running.

not_ok

VWServices is stopped. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - Component not installed
 - general usage

- ERROR_installation
 - Environment file not found
 - Environment variable not set
 - Invalid platform
 - Server not configured for System

- ERROR_application
 - Interpreter not set

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Status Web Server

Description

This monitor checks the status of the Web Server on a specific server of a FileNet P8 4.x system.

Note: For Tivoli ITM and the non-Tivoli based version, you can use the monitor ComponentStatus with component WEB as well.

Monitoring Frequency

No default schedule

Parameters

System

Name of the FileNet P8 4.x system

Product

Name of the FileNet P8 4.x product environment (Process Engine) which shall be monitored.

Server

Name of the server (as given in the FileNet P8 4.x installation) which shall be monitored.

Return Values

ok

Web Server is running.

not_ok

Web Server is stopped. See additional info for details.

List of possible error conditions

For details see [Overview of Monitor error codes](#).

- ERROR_usage
 - Variable not specified
 - Component not installed
 - general usage
- ERROR_installation

- Environment file not found
- Environment variable not set
- Server not configured for System

- ERROR_application
 - Interpreter not set

- ERROR_system
 - Command not found
 - Tools directory not found
 - Product name not valid

Chapter 6. Using CalaMoMa

Using CalaMoMa to modify and create calamon command tables

Starting the CalaMoMa

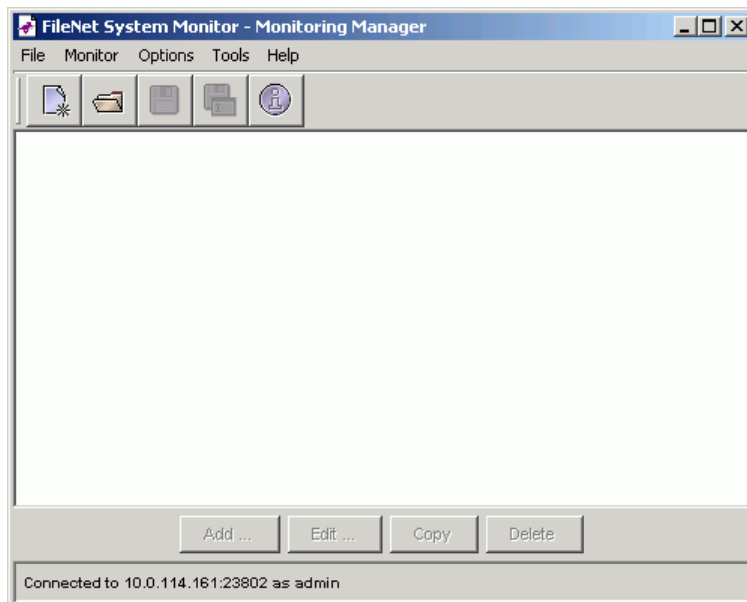
Start the CalaMoMa using Java WebStart. via the WebConsole.

If you installed CalaMoMa locally, you will find a file `calamoma.sh` (or `calamoma.bat` for users of Microsoft Windows) in the installation directory which starts the CalaMoMa program.

If `java` is not in the `PATH` environment, please set the environment variable `JDK` before executing the script/batch-file.

The main window

After starting the CalaMoMa you get the following window:

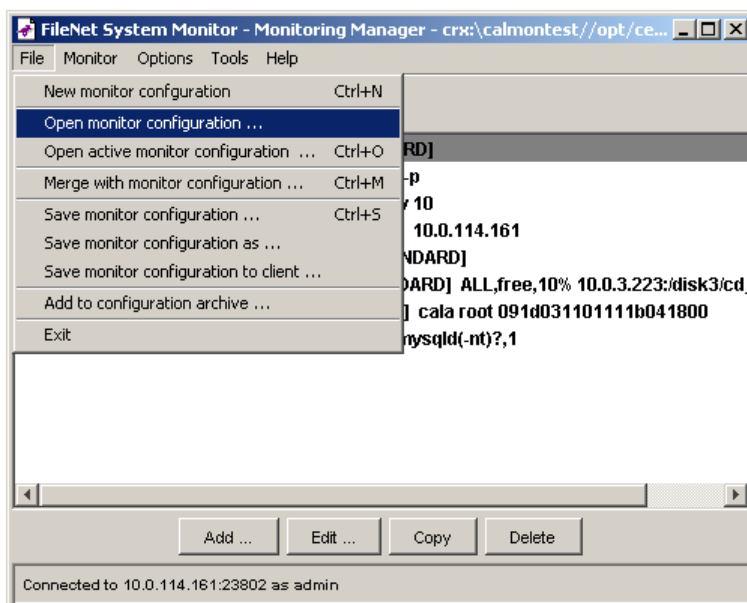


CalaMoMa main window

Note: The screenshots in this guide were taken from a CalaMoMa using the Windows look & feel. If you are using any other look & feel manager, the look of your user interface may differ in some details.

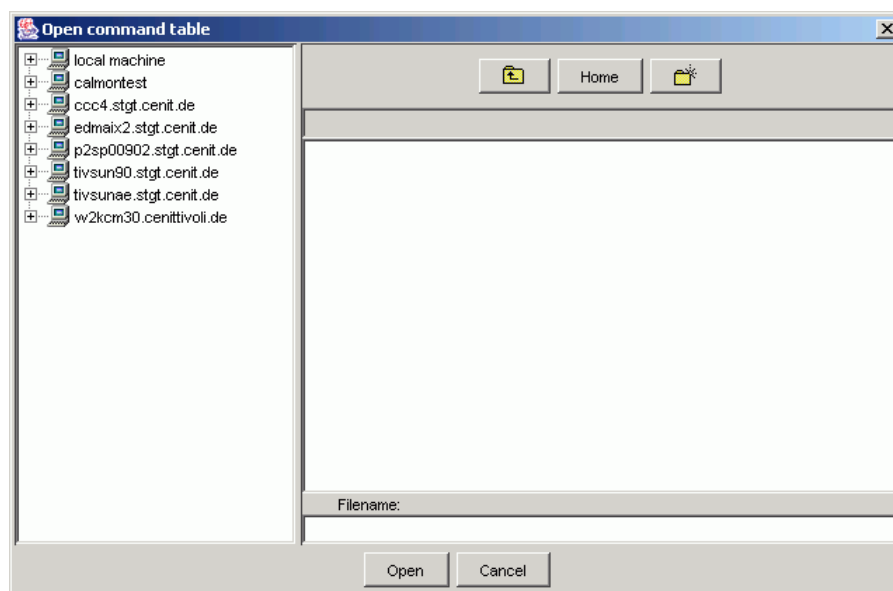
The center part of the window contains a listbox showing all configured monitors. Because there is currently no configuration loaded, this listbox is empty and the edit buttons are all disabled.

An existing configuration can be loaded by selecting File→Open monitor configuration ... from the menu.



Menu Open monitor configuration

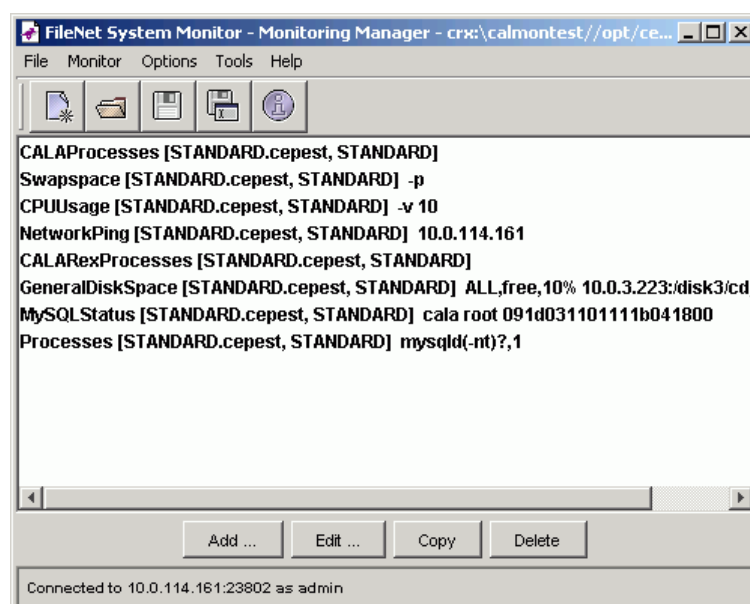
This opens a file dialog box, which can handle local files as well as files on remote systems which are available via cala_rex.



File open dialog

After selecting a command table file and pressing the Open button from the file dialog, the main

window looks a little more interesting:



CalaMoMa main window with loaded monitor configuration

Each line shows a summary of the configured monitor. The selected monitor is marked with a gray background.

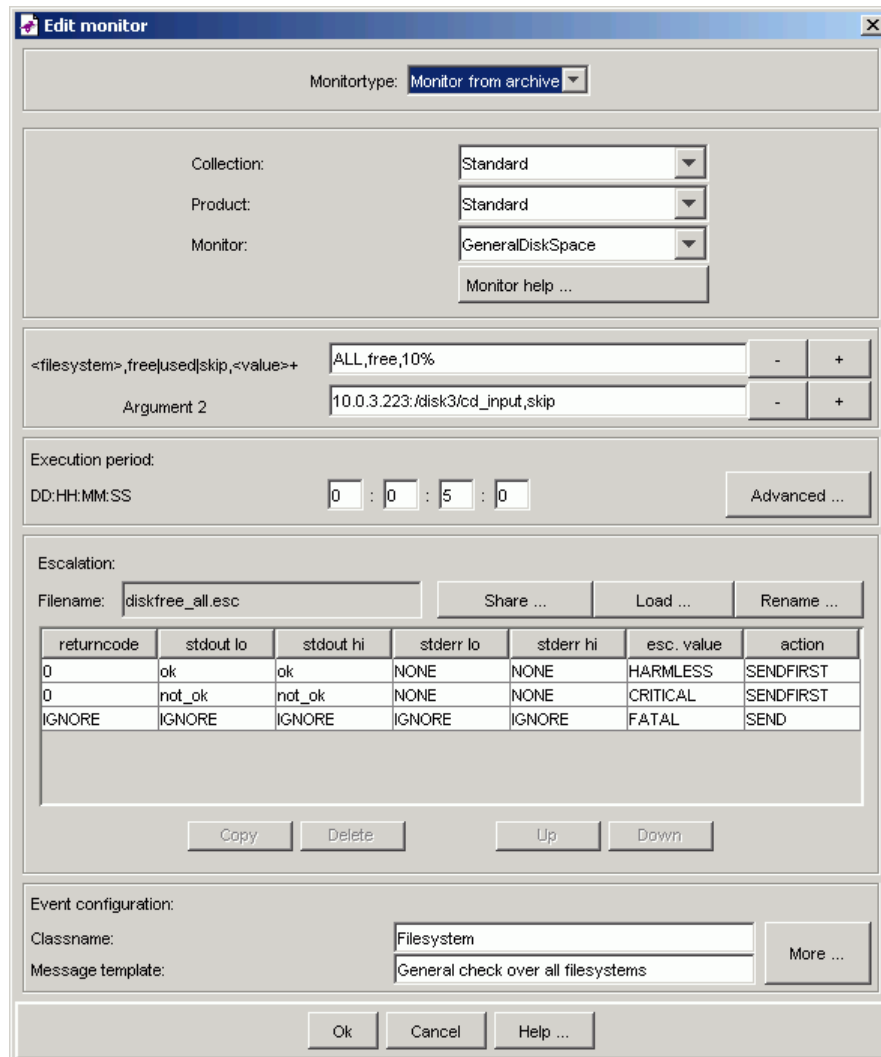
There are four buttons at the bottom of the window:

- the New ... button is used to add a new monitor
- the Edit ... buttons is used to change the configuration of the selected monitor
- the Copy button creates a copy of the selected monitor (useful if two monitor configurations differ only in a few parameters)
- the Delete button removes the selected monitor

If New ... or Edit ... is selected, the monitor configuration window is opened:

The monitor configuration window

The main monitor configuration window shows the details of a configured monitor:



Monitor configuration window

Monitortype

Defines whether to define a custom monitor or to use a monitor from a CEPEST archive

Collection

Defines the collection of the selected archive

Product

Defines the product name of the selected archive

Monitor

Defines the Monitor name (if archive) or the name of the script , which will be executed

<Argument n>

A list of predefined parameters (if archive mode) or free list of parameters, which can be defined (added or removed) by the user

Execution period

DD:HH:MM:SS

These fields (day, out minute, second) are used to specify the schedule of the monitor. Example: If you define 0:00:10:00, the monitor will be started every 10 minutes. Use the Advanced ... button to specify advanced scheduling parameters like execution from Monday to Friday between 5pm and 6am.

Escalation

Filename

Specify the name of the escalation file which will be created or will be shared with any other monitor. Use the Share ... to share the escalation file of another monitor. Use the Load ... button to load an existing escalation file. Use the Rename ... button to rename the escalation file, either for all monitors that use this file or only for the monitor that you are currently editing.

<each escalation line>

defines one monitoring level (indicated by the severity). This level is reached, when the numeric return value of the monitor is within the range of field stdout lo and stdout hi . The stderr output of the monitor can be used for triggering, too. In this case an event will be generated with the defined severity, if action is set to SEND, otherwise it will be discarded. If action is set to SENDFIRST, only the first event matching this line will be sent. All other events that match this line will be suppressed until an event is generated that matches another line in the escalation file.

In the example escalation file above, only the first HARMLESS event will be sent. Subsequent HARMLESS events will be suppressed until a WARNING or FATAL event is generated.

If a monitor has terminated, the escalation table is processed top-down using the monitor's output to stdout, stderr and its return code. The first matching line is executed, so be aware of the sequence of the escalation rows.

To change the sequence of an escalation table, select a row by clicking on one field within this row and use the Up and Down buttons to move the row across the table. To remove a row select it and press the Delete button, to copy it press the Copy button.

Area

Defines the area where events that are generated from this monitor will be displayed (can be changed in the window which appears if the More button is pressed).

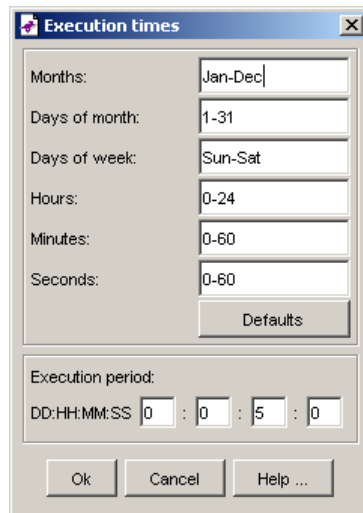
Message template

A message template to create an user-readable message. The message template can contain links to other fields (e.g. the stdout and stderr fields). Links to other fields are indicated by writing the field name enclosed with < and >.

For more information about the message fields refer also to the appendix *The command table file format*.

Advanced execution time settings

The Execution times window is opened by pressing the Advanced ... button in the monitor configuration window. It is used to specify exactly when a monitor is to be executed.



Execution times window

The upper fields define the space(s) of time when the monitor should be executed.

Months

Valid values for months are: Jan, Feb, Mar, Apr, Jun, Jul, Aug, Sep, Oct, Nov, Dec and the numbers from 1 to 12.

Days of month

Valid values for days of month are: the numbers from 1 to 31

Days of week

Valid values for days of week are: Sun, Mon, Tue, Wed, Thu, Fri, Sat

Hours

Valid values for hours are: the number from 0 to 24 (0 and 24 are the same)

Minutes

Valid values for minutes are: the numbers from 0 to 60 (0 and 60 are the same)

Seconds

Valid values for seconds are: the numbers from 0 to 60 (0 and 60 are the same)

Two valid values may be combined with a dash like in 0-60 which means all values between the boundaries (including the boundary values). Valid values can also be combined with a comma, which means that only the specified values match. Even complex combination like 1-10,15-20,30 are possible .

Execution period DD:HH:MM:SS

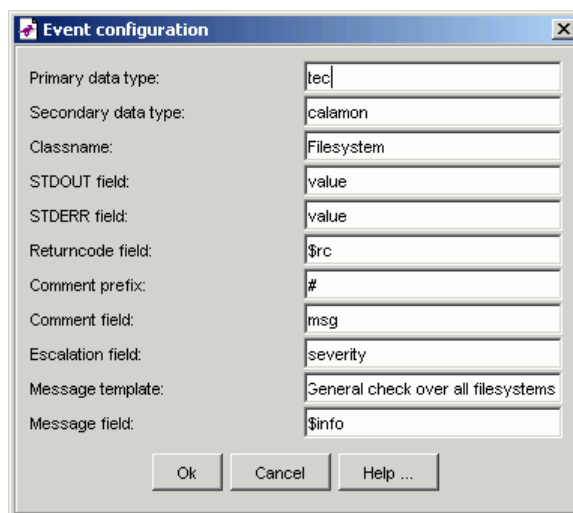
The execution period defines the period in which the monitor is executed within the defined space(s) of time.

The example monitor from the screenshots is defined to run every day and with a period of 2 minutes.

Event configuration

When pressing the More ... button in the Event Configuration area, the Event Configuration dialog appears.

This dialog defines the following fields:



Primary data type:	tec
Secondary data type:	calamon
Classname:	Filesystem
STDOUT field:	value
STDERR field:	value
Returncode field:	\$rc
Comment prefix:	#
Comment field:	msg
Escalation field:	severity
Message template:	General check over all filesystems
Message field:	\$info

Ok Cancel Help ...

Event configuration

Primary data type

The primary data type (`$PRITYPE`) for CALA. Default is `tec`. This field should not be changed.

Secondary data type

The secondary data type (`$SECTYPE`) for CALA. Default is `calamon`. This field should not be changed.

Area

This is the area where the monitor value will be displayed

STDOUT field

The field to receive the output of the monitor to stdout. If the same field name is given for stdout and stderr, the output is merged (similar to the `2>&1` shell construct). Default is `value`. This field should not be changed.

STDERR field

The field to receive the output of the monitor to stderr. If the same field name is given for stdout and stderr, the output is merged (similar to the `2>&1` shell construct). Default is `value`. This field should not be changed.

Returncode field

The field to receive the shell return code of the monitor. Default is `rc`. This field should not be changed.

Comment prefix

The monitor may write additional information to stdout this is the prefix for such comments. Lines starting with this prefix are removed from stdout and put into the comment field. The comment prefix has to be the first non-whitespace in a line. Default is #.

Comment field

The field to receive the comment output of the monitor. Default is `msg`. This field should not be changed.

Escalation field

The escalation field (which is filled by the escalation table). Default is `severity`. This field should not be changed.

Message template

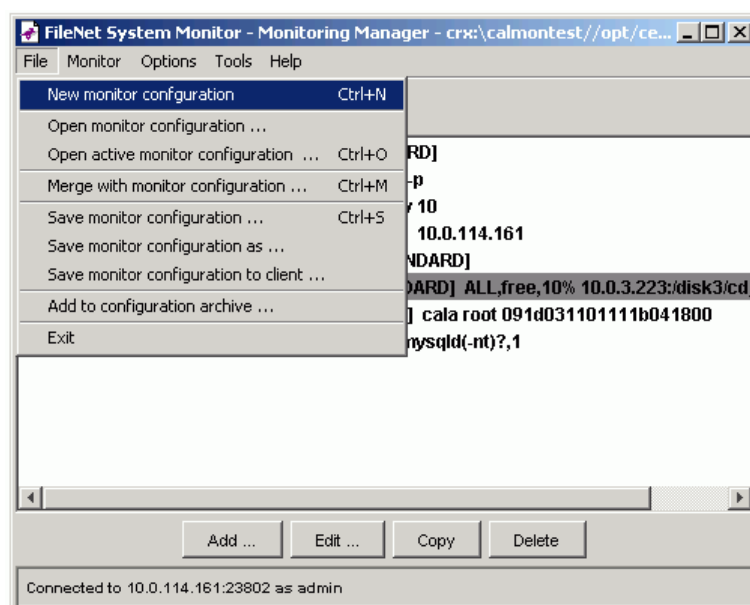
A message template to create an user-readable message. The message template can contain links to other fields (e.g. the stdout and stderr fields). Links to other fields are indicated by writing the field name enclosed with `<` and `>`.

Message field

The field to receive the user-readable message. Default is `$info`. This field should not be changed.

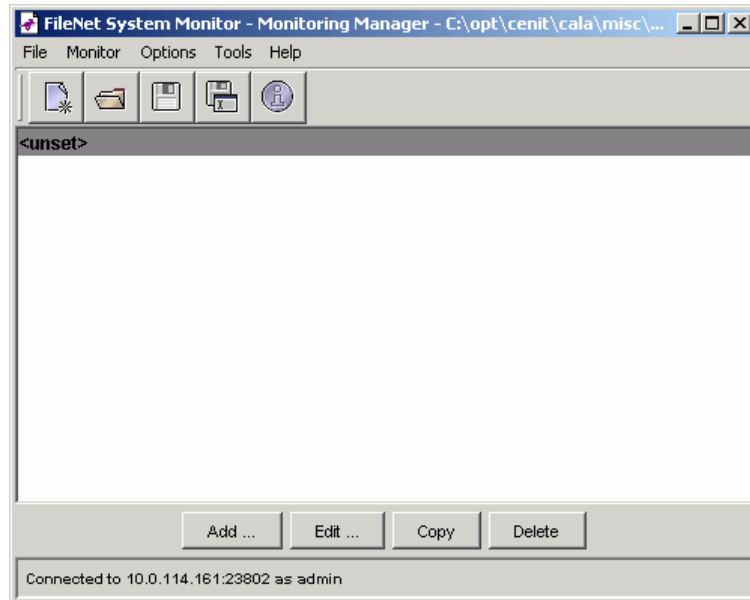
Creating a command table from scratch

If there is no existing command table configuration you can build up from, select `File` → `New monitor configuration ...` from the menu.



Menu New monitor configuration

This creates a new command table with a new unconfigured monitor:



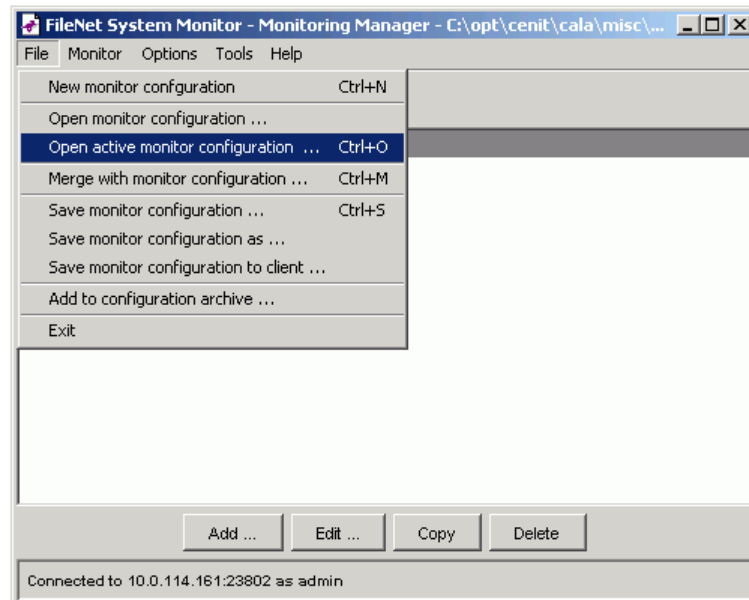
CalaMoMa main window with new monitor configuration

This monitor can be configured as described above. More monitors can be added by using the New ... and the Copy buttons.

Using CalaMoMa to modify remote configurations

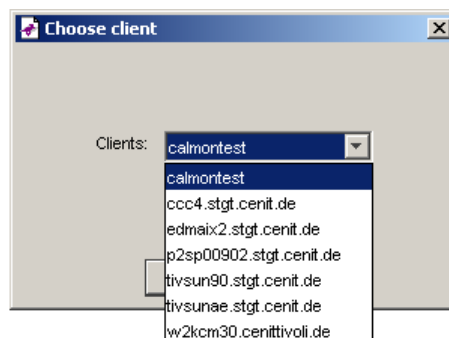
The CalaMoMa can access remote configuration files using the CALA Remote Execution (cala_rex).

To edit a remote configuration from a client select File→Open active monitor configuration ... from the menu.



Menu Open active monitor configuration

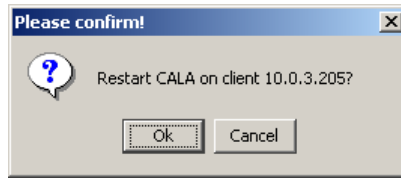
A dialog opens where you can select a client.



Client chooser

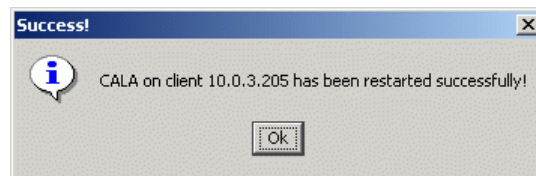
CalaMoMa looks for the file `$CENIT_ROOT/cala/misc/cmdtab_merged.ctb` on the client. The setting of `$CENIT_ROOT` depends on the installation location of the `cala_rex` client.

If you save a command table that has been loaded using the menu item `File→Open active monitor configuration ...`, you will be asked if CALA should be restarted on the client:



Dialog Confirm CALA restart

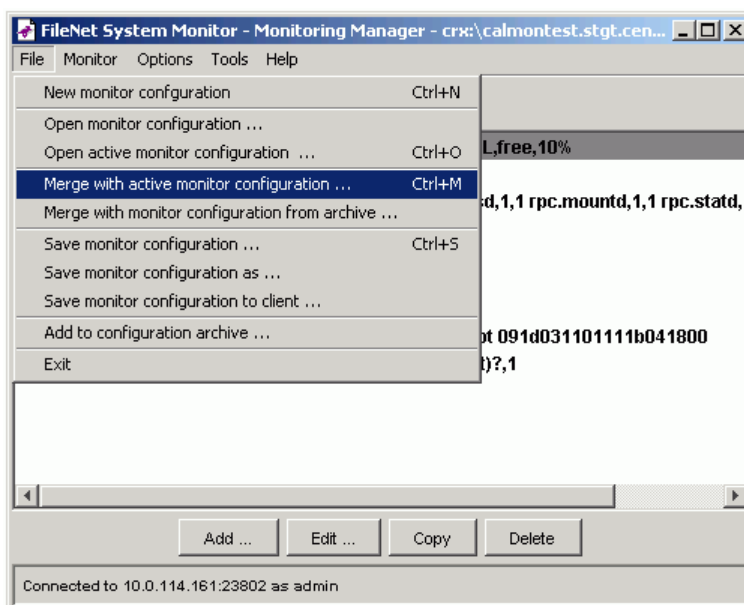
If you click Ok, CALA will be restarted. You will see a message box with a success or error message.



Dialog CALA restart success

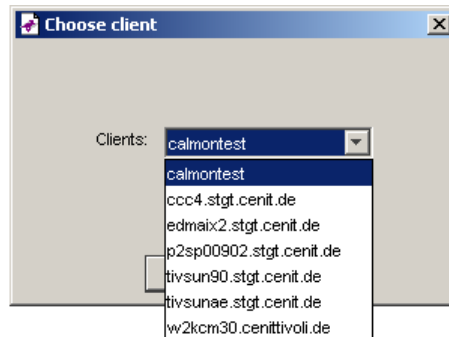
Merging monitor configurations

You can use the menu entry File→Merge with monitor active configuration ... to merge the configuration from another client into the monitor configuration that is already loaded.



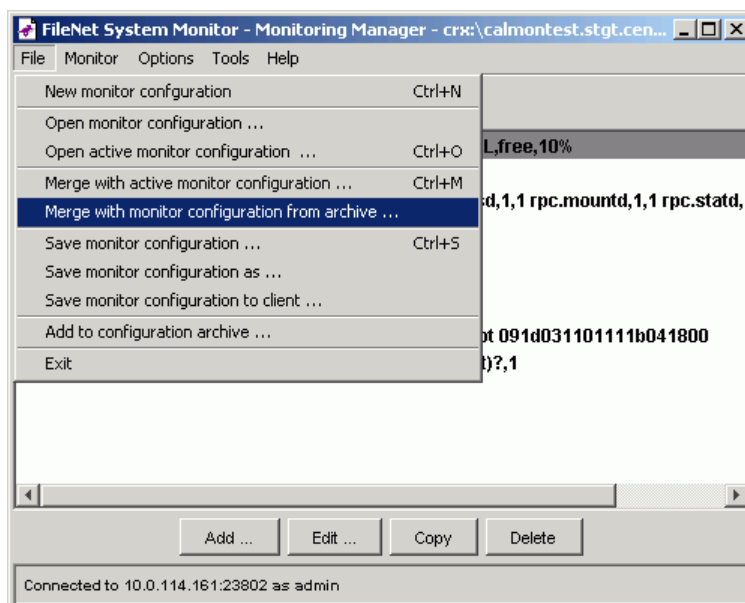
Menu Merge with monitor configuration ...

A dialog opens where you can select a client.



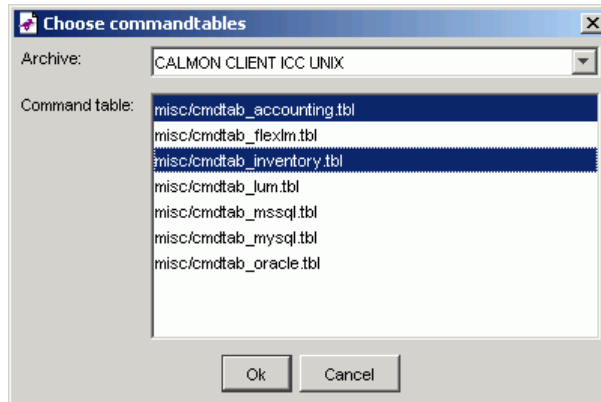
Client chooser

Another possibility is to use the menu entry File→Merge with monitor configuration from archive ... to load preconfigured monitors from a configuration archive into the monitor configuration that is already loaded.



Menu Merge with monitor configuration ...

A dialog opens where you can select a configuration archive. The listbox labeled Command tables: shows all command tables that are preconfigured in the selected archive. Select one or more command tables and press Ok to merge them into the current command table.



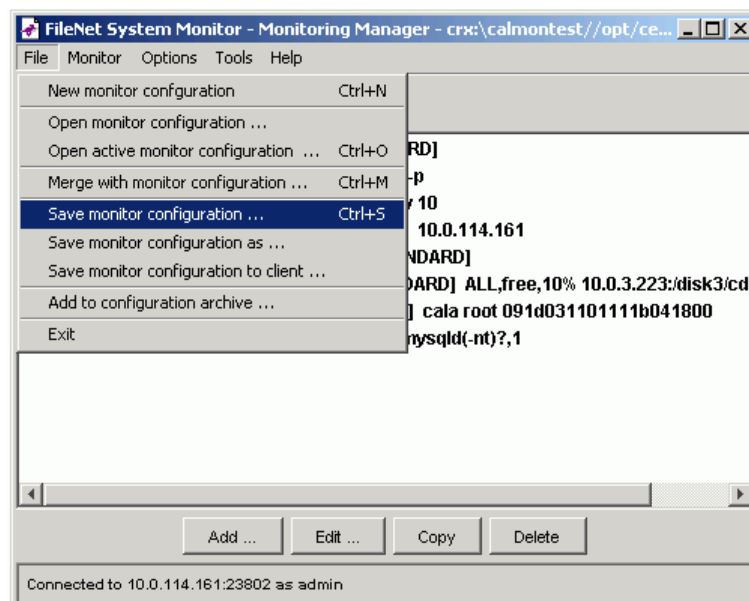
Client chooser

CalaMoMa compares both monitor configurations. Duplicate monitors will be removed from the resulting monitor configuration. A monitor is considered as a duplicate of another monitor if the monitor name is the same and both monitors have the same arguments (count and value). If two monitors only differ in the execution time settings and/or the advanced event configuration, the monitor definition from the configuration that was loaded first will be used.

After adjusting the merged command table, you can save it to any client that is available in the client chooser available via the File→Save monitor configuration to client ...menu entry.

Saving configuration and restarting CALA

If the configuration has been changed, it is saved by selecting File→Save monitor configuration or File→Save monitor configuration as... from the menu.

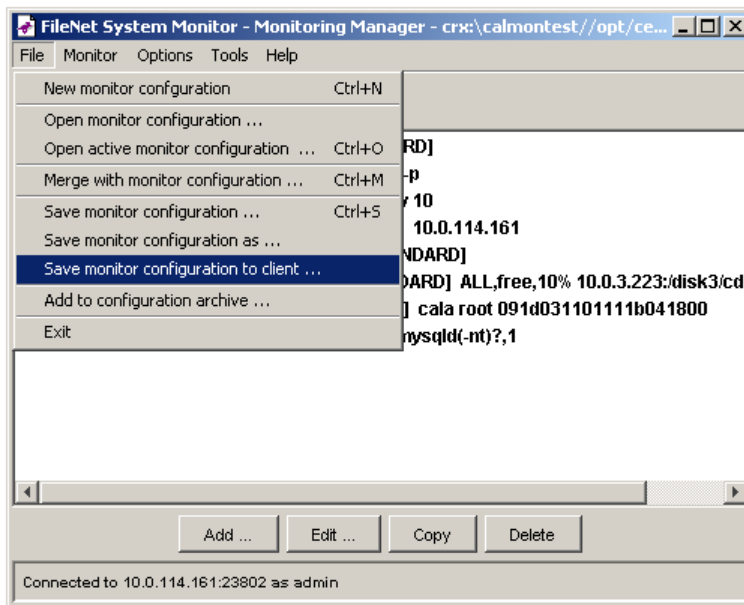


Menu Save monitor configuration

For the saved modifications to take effect, CALA is restarted automatically on the client.

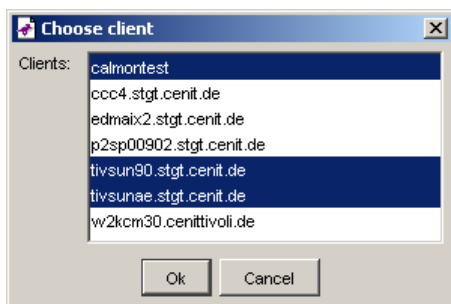
Note: If your CALA configuration on the client did not use the calamon component before, ensure that it is configured in the `logctlsrv.conf` file before saving the monitor configuration.

To save the monitor configuration to a different client or to more than one client at once, choose File→Save monitor configuration to... from the menu.



Menu Save monitor configuration to client ...

A client chooser opens where you can select all clients where the current monitor configuration should be saved to.

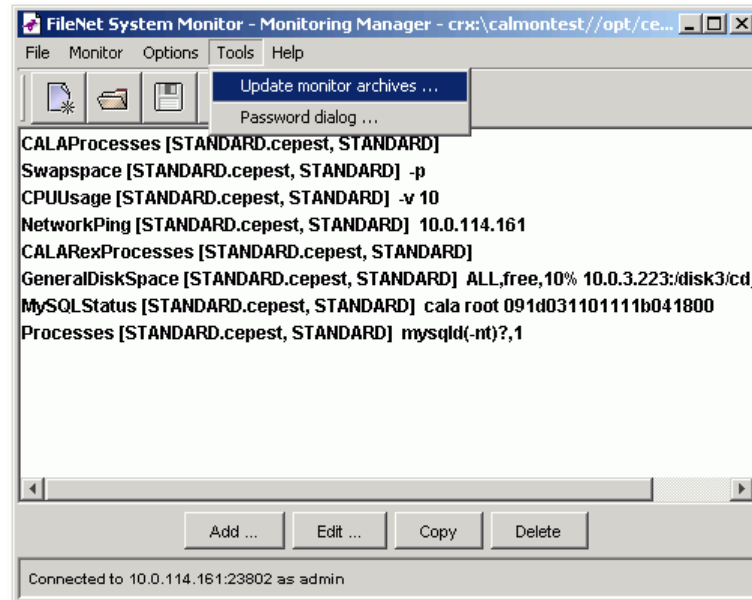


Client chooser for multiple clients

The monitor configuration will be saved to all selected clients. In addition, the cepest archives will be distributed and the CALA will be restarted to activate the changes.

Handling CEPEST monitor archives

As explained in chapter `Monitoring collections`, some standard monitors are bundles in cepest archives. CalaMoMa contains a toolset to update those archives easily from a server.



Menu Update ceepst archives

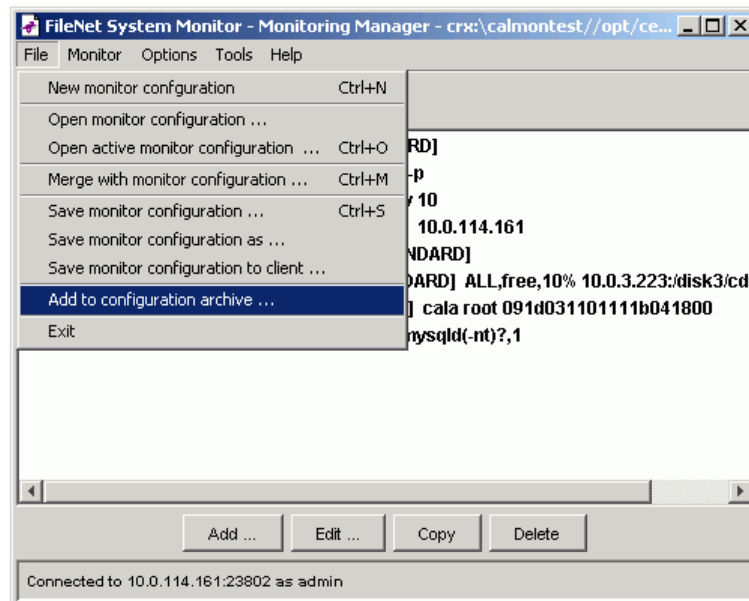
To update the local cepest monitor archives on a `cala_rex` client from the server, choose `Tools`→`Update monitor archives ...` from the menu, which opens a dialog for choosing the `cala_rex` client for update.

Adding a command table to a configuration archive

The CALA installer delivered with FSM uses configuration archives to install clients with prepared configurations. CalaMoMa supports adding custom monitors to such configuration archives.

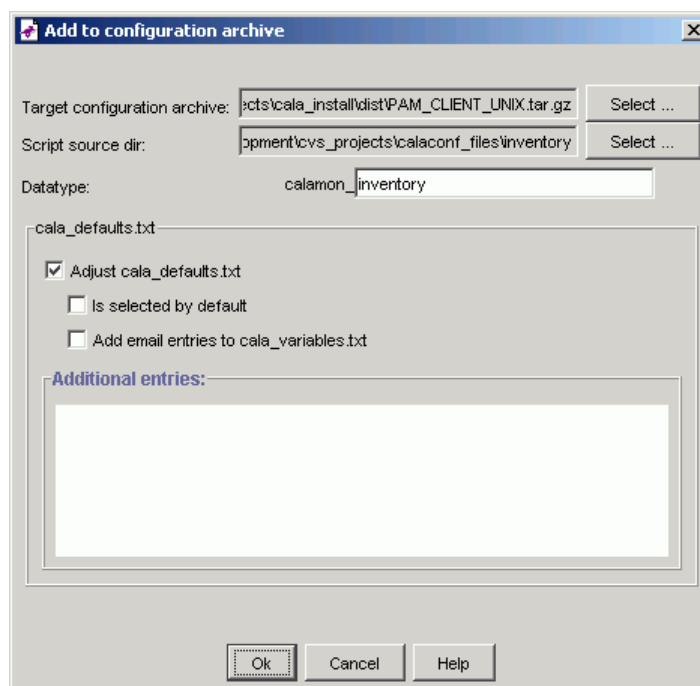
The following steps need to be done:

- create a command table containing the monitors to be added
- configure the monitors
- copy the custom monitors script and programs into one directory
- select `File`→`Add to configuration archive ...` from the menu



Menu Add to configuration archive

- the Add to configuration archive dialog window appears



Dialog Add to configuration archive

Target configuration archive

select the configuration archive to add the monitor to

Script source dir

select the directory which contains the monitor scripts and programs (they are copied to the archive file)

Datatype

insert the datatype to be used for this command table (the prefix `calamon_` is mandatory and cannot be changed)

These three parameters must be given to unlock the ok button. There are also some options depending the `cala_defaults.txt` file:

Adjust `cala_defaults.txt`

select this checkbox to add the data type to the selection displayed at installation time

Is selected by default

check this to make this datatype pre-selected for installation

Add email entries to `cala_variables.txt`

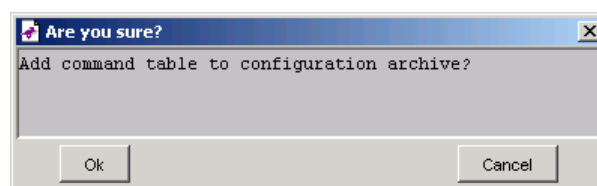
If this is selected, the installation dialog allows to enter the email address of the administrator for this data type.

Additional entries to `cala_variables.txt`

enter additional entries to `cala_variables.txt` (e.g. variables to be replaced by installer) here

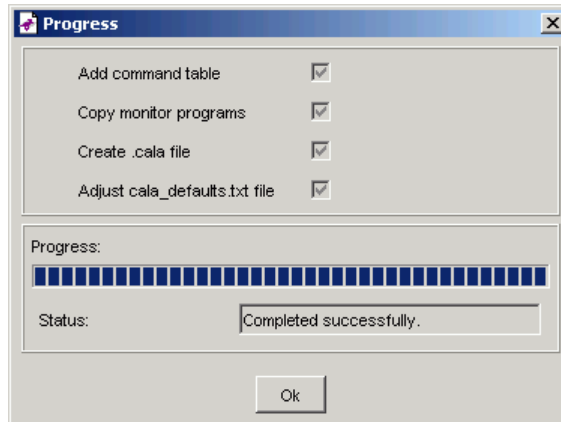
Afer filling out all required fields, the Ok button is activated.

After pressing Ok, a confirmation dialog is displayed.



Dialog Confirm adding to configuration archive

After the action has been confirmed, the progress dialog showing the action progress appears.



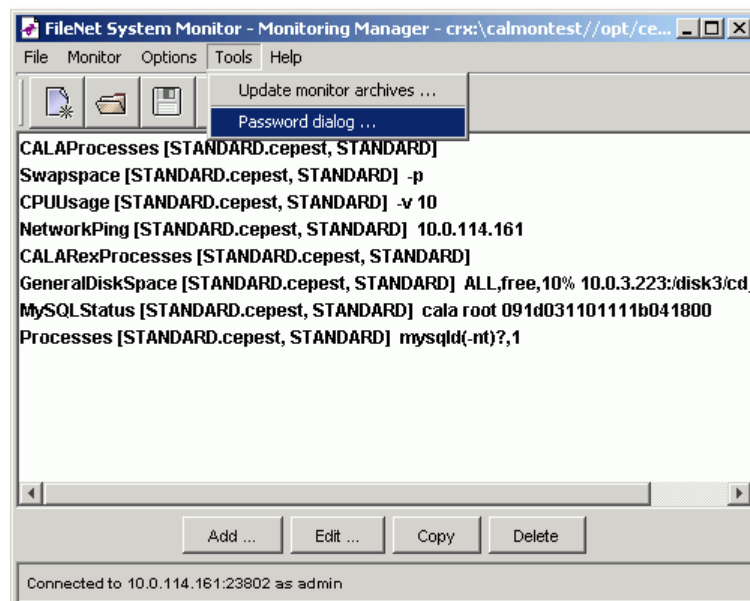
Progress dialog

Clicking Ok closes all open dialogs and returns to the CalaMoMa main screen.

The password encryption dialog

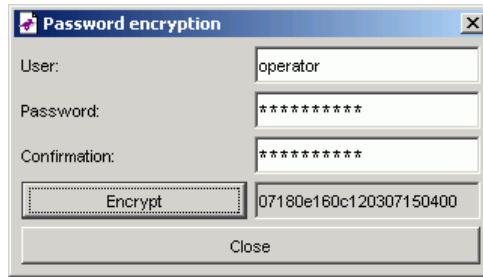
To avoid unencrypted passwords in configuration files or being tranfered over the network, all CALA components that need passwords (e.g. the sqlreaders and writers) use encrypted ones. To get the encrypted password text, the password encryption dialog is used.

The password dialog is opened via the tools menu.



Menu Password dialog

The appearing window shows some entry fields:



Dialog Password encryption

User

Enter the user the password is associated with

Password

Enter the password

Confirmation

Re-enter the password

After the information has been entered in the entry fields, press the Encrypt button. The encrypted password appears in the field on the right of the button.

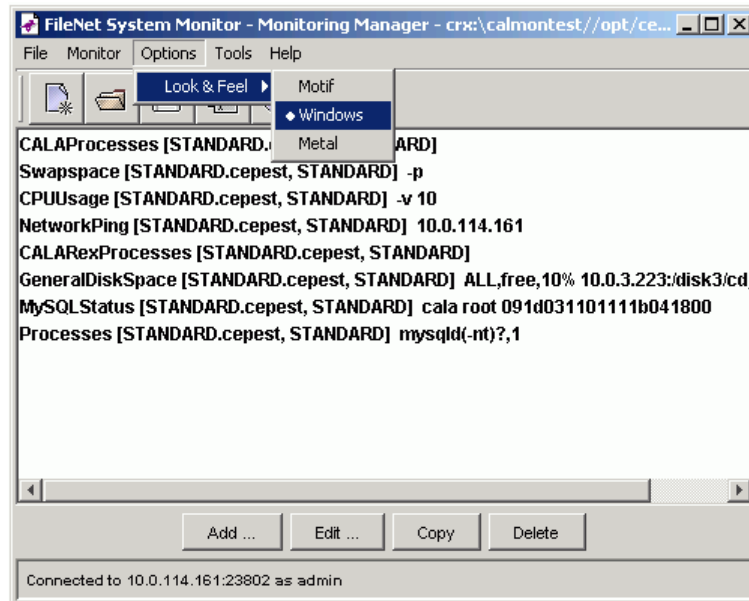
This encrypted password can be copied to the CALA configuration file.

Options and Configuration

Options

The *Options* menu has one submenu:

- The Look & Feel submenu lets you choose the look & feel manager. Changes made in this menu are non-permanent, they are lost if the program is exited.



Menu Options

You can set default values for this options (and many others) in the configuration file (see next section).

The configuration files

The CalaMoMa uses two configuration files which both have to be placed in the directory the CalaMoMa is started from.

The language definition file

The file `CalaCoMa.properties` is the language definition file. All texts displayed from the CalaMoMa are defined in this file. Depending on your `LANG` environment variable, another file named `CalaCoMa_{any_language_id}.properties` can be used.

See java documentation for `java.util.ResourceBundle` for further information.

The personal properties file

Personal preferences like colors, fonts, default look & feel manager etc. can be set in the file `CalaCoMa_personal.properties`.

If this file does not exist, the default configuration is used. A sample properties file `CalaCoMa_personal.properties.example` is shipped with the CalaMoMa and can be adapted for your own preferences.

Refer to appendix for an example personal properties file.

Chapter 7. Writing custom monitors

This chapter explains some things to consider when developing custom monitors.

First there are two types of monitors:

- numerical monitors, which return a numeric value
- alphanumerical monitors, which return a text

The advantage of numerical monitors is that the `stdout` and `stderr` high and low feature can be used in the escalation table. (For example, it is possible to specify an escalation like if value is between 90 and 100 set severity to `HARMLESS`, if it s between 80 and 90 set severity to `CRITICAL` and if it s lower than 80 set severity to `ERROR`.)

For alphanumerical monitors, all possible return values should be known to create a complete escalation table. Most alphanumerical monitors simply return `ok` or `not_ok` which is enough in many cases.

A monitor should return its value either to `stdout` or via return code (`exit`). Although it would be possible to pass a return value via `stderr`, it s recommended to avoid this.

Alphanumerical monitors should therefore use `stdout` to pass their return values.

If `stdout` is used for value return, additional information can be passed to CALA using comment lines.

Comment lines are starting with a defined prefix (the hash symbol `#` by default) and are not interpreted as the value of the monitor but copied into an separate event field.

This additional information can be used by the administrator to get an idea of the system status, even if everything seems ok.

Last but not least you should keep in mind that a monitor may be needed on several platforms and should therefore be developed as platform independent as possible.

An example monitor

This example monitor checks a directory for core-files:

```
#!/bin/sh dir="$1" output='ls -l $dir/core 2>&1' value=$?; echo "# $output"  
echo "$value" exit 0;
```

A skeleton for a perl monitor is included in the CalMoMa package and can be found in the `examples/` subdirectory.

Appendix A. The command table file format

The command table file contains a set of parameters for each monitor task. Each of these parameters has to be configured in a separate line. Comment lines are prefixed with ## (two #).

The following parameters must be given:

- script name - path and name of the script to be started
- command line parameters - parameters which are passed to the script
- primary data type, secondary data type and event class - type of event to be created
- stdout field - FIR field to receive the script output to stdout
- stderr field - FIR field to receive the script output to stderr
- return code field - FIR field to receive return value of the script
- comment prefix - prefix which marks a line of the script output as comment
- comment field - FIR field to receive comment lines (which are removed from stdout field)
- escalation field - FIR field to receive escalation level (is set from escalation file)
- escalation file - name of escalation file (see escalation file description below)
- the execution times specification (like crontab entries in Unix)
 - execution months
 - execution days of month
 - execution days of week
 - execution hours
 - execution minutes
 - execution seconds
- execution period - length of period in seconds
- message template - a template for the message to be written into the message slot (may contain links to other fields)
- message slot - the name of the message slot

Parameters may be enclosed in double quotes, double quotes within a quoted string have to be masked by backslashes.

Example:

```
001 ##-----
002 /home/cala/scripts/check_disk.sh
003 "/dev/hda1 /dev/hda2"
004 tec
005 calamon
006 CALA_Monitors
007 value
008 $stderr
009 $return
010 #
011 $comment
012 severity
013 disk_esc.esc
```



```
014 1-12
015 1-31
016 0-7
017 0-24
018 0-60
019 0-60
020 "Filespace monitor for <proble_arg> returned <value>. Additional inform ✓
... ation: <$comment>"
021 msg
```

Appendix B. An example personal properties file

```
001 // Filename: CalaCoMa_personal.properties
002 // Date: 23.06.2005
003 // This file is part of the FSM CALA (CALA)
004 // (c) 2001-2005 CENIT AG Systemhaus, Stuttgart (Germany)
005 // General settings for CALA Monitoring Manager.
006 // The settings in this file are given like this:
007 // [property name]=[value]
008 // For properties expecting color values, the following colors are supp
... orted:
009 // black
010 // blue
011 // cyan
012 // darkGray
013 // gray
014 // green
015 // lightGray
016 // magenta
017 // orange
018 // pink
019 // red
020 // white
021 // yellow
022 // All lines starting with // are comments.
023
024 // Options Menu
025
026 // chose default L&F manager (1=motif, 2=windows, 3=metal)
027 calamoma.menu.options.lookandfeel.defaultmanager=3
028
029 calacoma.opencommandtable.filechooser.path=data
030 calacoma.commandtable.filechooser.extension=.ctb
031
032 // You may use remote locations for cepest, example:
033 // calacoma.calamon.cepest.dir=crx:/tivrdsrv.stgt.cenit.de/cepest
034 calacoma.calamon.cepest.dir=cepest
035 calacoma.calamon.cepest.suffix=.cepest
036 calacoma.calamon.helpfiles.suffix=.help
037
038 // default name for command table
039 calacoma.calamon.cmdtab.new.name=unnamed.tbl
040
041 // default name for escalation file
042 calacoma.calamon.monitor.new.escalationfile=unnamed.esc
043
044 // default escalation file settings
045 // the complete escalation file must be configured in one row
046 calacoma.calamon.monitor.new.escalationstring=0 OK * - - HARMLESS SEND
... 0 "NOT OK" * - - WARNING SEND * * * * * FATAL SEND
```

Appendix C. JMX - Troubleshooting

This chapter shall give an introduction of possible error messages which can occur and are not clearly to understand, because several kinds of failures can cause the same error message.

What types of error messages can occur?

There are several methods to find an error. You might get information about the error from the:

- Error Messages generated by the monitor and returned in the web console
- Monitor Debugging (.plusdebug)
- MBeanMonitor Java debugging

The order of the three items also represents the order in which the error handling should be used. Most times the error should be obvious from the output returned in the web console.

If it is not that way, or the monitor returns unexpected values (for example an OK if a Not_OK is expected) then the .plusdebug output can help to find most kind of errors. The java debugging is used in most rarely cases. It can give a more detailed view into the program sequence.

For usual the error messages returned by the monitor should be detailed enough to fix the error (when it is caused by wrong configuration of the monitor). It can also help to identify problems which are caused by a wrong configured application server (when it is not possible to build up a connection to the server).

The output in the web console

The output in the WebConsole can contain error messages from the monitoring script itself, but also from the Java MBeanMonitor program. Messages containing the host name / IP-Adress of the application server are from the Java program.

Example: #192.168.240.153::Error: A time out occured while trying to connect to the server.

The other kinds of messages may be from both, the monitoring script or the Java program.

For usual the output in the web console should be detailed enough to find most of the configuration errors of the monitor and to find out that something could be wrong with the application server itself.

The output in the .plusdebug file

Like all others of the monitors, the JMX monitors also supports debugging via .plusdebug. It is the most useful way to find errors in the monitor itself. This should not happen in daily use, because the monitor is supposed to work correctly.

But if the monitor has an unexpected behaviour (returning OK, when Not_OK is expected or some other strange output), the reason should be found here.

The output in the MBeanMonitor Java debug file

This possibility of debugging should only be used as additional information output for the developer, when giving support for the product. It gives him the opportunity to get a look into the

program sequences and see, where the error may be occurred. For this purpose the debug level should be set to DEBUG.

A debug output of the MBeanMonitor program can be seen in the following example:

```
001 [DEBUG]Logger initialized: initLogger
002 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.fillProperties(String[]) -> args[] are:
003 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.checkProperties()
004 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.myParseInteger(String, ✓
... int)
005 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.checkPropertiesPara
006 msGivenRight()
007 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.createMBeanContainerArr ✓
... ay()
008 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.decryptPassword()
009 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.getHostFromServiceUrl() ✓
...
010 [DEBUG][MBM][2006.11.30 16:29:45]#MBeanMontorMain.getSleepTime()
011 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.run()
012 [DEBUG][MBM][2006.11.30 16:29:45]#MonitorMBeans.initConnection()
013 [DEBUG][MBM][2006.11.30 16:29:45]#ServerConnector.getServerConnection(M ✓
... ap)
014 [DEBUG][MBM][2006.11.30 16:29:45]#ServerConnector.getServerConnectionFa ✓
... ctory(Map)
015 [DEBUG][MBM][2006.11.30 16:29:45]#JSR160ConnectionFactory.setMonitorMBe ✓
... anReference(MonitorMBeans)
016 [DEBUG][MBM][2006.11.30 16:29:45]#JSR160ConnectionFactory.getServerConn ✓
... ection(Map)
017 [ERROR][MBM][2006.11.30 16:30:06]#IOException in method JSR160ConnectionFactory.getServe
    java.net.ConnectException: Connection timed out: connect]
018 [ERROR][MBM][2006.11.30 16:30:06]#Exception in method ServerConnector.g ✓
... etServerConnection(Map) -> Error: There was an IO-Exception while conne ✓
... cting to the server
019 [ERROR][MBM][2006.11.30 16:30:06]#Exception in method MonitorMBeans.get ✓
... OutputString() -> Error: There was an IO-Exception while connecting to ✓
... the server
020 [DEBUG][MBM][2006.11.30 16:30:06]#MonitorMBeans.returnErrorMessage(Stri ✓
... ng)
021 [DEBUG][MBM][2006.11.30 16:30:06]#MonitorMBeans.setOutputValue() -> #192.168.240.151::Er
```

Example:

#Error: The expected number of thresholds is 13, but the number of parameters was 0

The emphasized lines give some interesting information: The first emphasized line shows the argument list given to the file. If an error occurs by giving the parameters in the wrong order, the debug output can be helpful.

In the example a wrong service URL (IP is wrong) was given to the program. The error messages ([ERROR]) mostly contain the error information provided by the application server more detailed than it is given back by the output, which is emphasized in the last line. It helps also to localize (where in the Java program) the problem occurred. In this case it is the method JSR160ConnectionFactory.getServerConnection(Map). If this was a real error, the developer knew where to search for the error in his Java program.

How to interpret web console error messages

There are several messages which give a unclear description of the error which occurred, because it is hard to define individual rules for different application server error messages and the Java program just returns one error message for different failures:

Error when connecting to the server

```
001 (On WebSphere Servers)
002 #<host>::Error: A NamingException occurred when connecting to WebSphere. ✓
... This may be caused by a wrong password, or when the server is not runn ✓
... ing. Keep in mind, that encryption is used and the encrypted password h ✓
... as to be given to the program
003
004 (On other Servers)
005 #<host>::Error: There was an IO-Exception while connecting to the serve ✓
... r
006
007
```

As the Application server only gives the information that the connection could not be established, the reason of the error is not obvious, this message can have one of the following reasons:

- The password was given incorrectly or a password was given, even if no password was needed.
- Host or port (or Service URL) are wrong
- A connection type, which is not compatible with the application server, was given (for example when you have a WebLogic server but choose WebSphere connection Type)
- When the application server is not running
- When JMX is disabled on the application server (for any reason)

In some cases, for this reason the time out message might occur. But the time out message also can occur, when the system is too busy.

```
001 #<host>::Error: A time out occurred while trying to connect to the server ✓
...
```

The time out error always means that it was not possible to get the requested data, before the defined time ran off. This can happen when the system is too busy and requesting too much data (especially on the Task) or if the monitor is not able to create a connection to the server (for example, because wrong connection data is given to the monitor).

Number of thresholds is not correct

This error occurs in the WebApplication Status monitors.

```
001 #Error: The expected number of thresholds is <number_of_expected_thresho ✓
... lds>, but the number of parameters was <number_of_actually_given_thresh ✓
... olds>
002
003 Examples:
004 #Error: The expected number of thresholds is 13, but the number of para ✓
... meters was 0
```

```
005 #Error: The expected number of thresholds is 13, but the number of para ✓
... meters was 1
006
```

- No / too many or too little numbers of thresholds were given the WebApplication Status monitor
- The wrong "Server Type" was given to the Application server. For example when you want to request the status of a Bea WebLogic 9 server, but chose Bea WebLogic 8 as "Server Type". So the monitor expects the number of thresholds for the WebLogic 8 server, which is not the same as the number of thresholds for the WebLogic 9 server.

Number of return values is not correct

This error occurs in the WebApplication Status monitor.

```
001 #Error: The expected number of return values from the Java monitoring pr ✓
... ogram is <expected_values>. But <returned_values> values were returned. ✓
... This means, that an error occurred in the Java program, probably caused ✓
... by wrong parameters or a not running server.
```

Examples:

```
002 #Error: The expected number of return values from the Java monitoring p ✓
... rogram is 67. But 1 values were returned. This means, that an error occ ✓
... urred in the Java program, probably caused by wrong parameters or a not ✓
... running server.
```

- This error is only returned by the status monitors. For every Application server the monitor expects a fix defined order of thresholds, given by the user and so also a fix number of returned values. If the number of returned values is 0 this means, that an error occurred, when connecting to the server. Actually this output should not return with a return value as 0 at all, because the Java program should return at least one value (An error message) when an error occurred. So all "0 values returned" messages mean that there is a yet undiscovered error.
- The Message can be caused by wrong "ServerConnectionData" configuration. This can be caused by typos, but also if a ServerConnectionData should have more dynamic parameters than it actually has. This would mean, that the monitor must be extended and an additional ServerConnectionData attribute has to be defined.
- It can also occur, if any other error is returned by the java program. But in that cases there will be an additional, more detailed error message in the web console output.

Error in threshold monitors

The following error is returned by the WebApplication Thresholds monitors.

```
001 #OK: #192.168.240.152 (search for getLastAccessedTime) value "#Error: Ex ✓
... ception: Error: An Invocation Exception was thrown, when trying to invo ✓
... ke the request on the application server" is == than threshold "Hallo"
```

Actually this is not the only output that is returned by the monitor in this case. There is also a message saying explicitly, that there was an error. This line is only created to see which error was returned.

It contains the output from the Java program. In this case it is: "#Error: Exception: Error: An Invocation Exception was thrown, when trying to invoke the request on the applicatoin server"

Even if the output says "OK", this is only referred to the rule, which is defined in the threshold.

Finally, the monitor will recognize that there was an error, because it returned an error message.

No result with the value OK was returned

```
001 #Error: No result with the value OK was returned.
```

This message means, that the monitor did not get any return value at all or the monitoring script had an error which was not discovered yet. Most times this message occurs on errors which can not be prevented or if an error case is not covered by the monitor script (unknown errors).

Other error messages

This section just lists all error messages with a short description:

#<host>::Error: A NamingException occured when connecting to WebSphere. This may be caused by a wrong password, or when the server is not running. Keep in mind, that encryption is used and the encrypted password has to be given to the program

Entered wrong port, when needed. Enter the right port

#<host>::Error: A NamingException occured when connecting to WebSphere. This may be caused by a wrong password, or when the server is not running. Keep in mind, that encryption is used and the encrypted password has to be given to the program

Entered no user when needed. Enter a user

#<host>::Error: A NamingException occured when connecting to WebSphere. This may be caused by a wrong password, or when the server is not running. Keep in mind, that encryption is used and the encrypted password has to be given to the program

Entered wrong user, when needed. Enter the right user

#<host>::Error: A user without password or a password without user was given.

Entered no password when needed. Enter a password

#<host>::Error: An exception occured when trying to check if the application server is deployed. Most times the wrong parameters were given to the programm in this case.

Nonsens in Server Connection Data. Check the manuals for correct values for Server Connection Data

Wrong Server Connection Data. Check the manuals for correct values for Server Connection Data

#<host>::Error: Port not given. Port is mandatory for your connection type. Usage: -p [port]

Entered no port, when needed. Enter a port

#<host>::Error: The service URL given to the server was not compatible with the server

Entered a service url, (Syntax Wrong) when needed. Enter the correct Service URL

#<host>::Error: There was an IO-Exception while connecting to the server
 Entered a wrong service url when needed (Host Wrong). Check the Service URL for errors

#Error on initializing the paths
 Entered a wrong path to java. Check the server for a valid java path
 Entered a wrong path to server libs. Check the server for its Application Server installation directory

#Error, no system was defined.
 Entered no PE_SystemName. Enter a PE_SystemName

#Error: A JSR160 connection must not have a host
 Entered host, when not needed. Do not enter the host

#Error: A JSR160 connection must not have a port
 Entered port, when not needed. Do not enter the port

#Error: Exception: Error: An Invokation Exception was thrown, when trying to invoke the request on the applicatoin server" is NOT == than threshold "false"
 Entered wrong object name. Check the spelling of your object names and compare them to the object names in the task
 Entered objectname with spaces in. Check the spelling of your object names and compare them to the object names in the task
 Entered wrong action names. Check the spelling of your action names and compare them to the action names in the task

#Error: MBeanMonitor parameter set does not contain threshold and comparison sign, awk_threshold_count is 1 and the given parameter is eventProvider
 mix up threshold action name writing with single value call syntax The first element you entered was a Threshold Request (onTime,<,300). One of the following requests was a single value request (onTime). This is forbidden. If the first argument is a Threshold Request, all following requests must be a Threshold request. If the first argument was a Single Request, all others have to be Single Requests.

#Error: MBeanMonitor parameter set does not contain threshold and comparison sign, awk_threshold_count is 2 and the given parameter is engineName,==
 mess up the threshold syntax: instead of 3 elements the threshold consists of 2. Check your thresholds in the Thresholds monitor. Every Threshold must look like (onTime,<,300)

#Error: MBeanMonitor parameter set does not contain threshold and comparison sign, awk_threshold_count is 4 and the given parameter is engineName,==,jboss.web,bobby
 mess up the threshold syntax: instead of 3 elements the threshold consists of 4. Check your thresholds in the Thresholds monitor. Every Threshold must look like (onTime,<,300)

#Error: No result with the value OK was returned.
 Entered a non existing datatype in signature field. Check the Parameters and Signatures given to the operation invokation. Take the Task output for that

#Error: Only the analyzation types "MIN", "MAX", or "SUM" are allowed.
 Entered a non existing ana type. Make sure that you took one of the valid Analyzation Types.

#Error: Only the single type monitoring configuration may use the analyzation type option. You chose "M"

Entered an anatype, when using thresholds. Do not use Analyzation types, when using Threshold requests in the Thresholds monitors

#Error: The action is not allowed

Entered no action. Enter one of the valid actions

#Error: The action soooobooo is not allowed

Entered illegal action. Enter one of the valid actions

#Error: The application server type is not supported.

No Server Type. Enter a valid Server Type - Get more information about that in the monitoring guides

#Error: The application server type jboss is not supported.

No valid Server Type. Enter a valid Server Type - Get more information about that in the monitoring guides

#Error: The connection type is not supported!

Entered no connection type. Enter a valid Connection Type - Get more information about that in the monitoring guides

#Error: The connection type ws must not use a service url

Entered a service url, when not needed. Do not use a Service URL with another connection type than jsr160

#Error: The expected number of return values from the Java monitoring program is 1. But 0 values were returned. This means, that an error occurred in the Java program, probably caused by wrong parameters or a not running server.

Entered user, when not needed. Check the security configuration of the application server

#Error: The expected number of return values from the Java monitoring program is 19. But 0 values were returned. This means, that an error occurred in the Java program, probably caused by wrong parameters or a not running server.

Not enough Server Connection Data. Check the Server Connection Data with the Monitoring Manuals

"#Error: The expected number of return values from the Java monitoring program is 67. But 1 values were returned. This means, that an error occurred in the Java program, probably caused by wrong parameters or a not running server. #192.168.240.153::Error: A time out occurred while trying to connect to the server"

Entered wrong host, when needed. Enter the right host.

#Error: The expected number of thresholds is 13, but the number of parameters was 0

No Threshold given in Status Monitor configuration. Enter the right number of Thresholds for this monitor - Get more information about that in the monitoring guides

#Error: The mon_type is "S". Only one request parameter is allowed. 3 were requested.

Entered multiple action names in single value mode. Remove all action names except of one or choose one of the Analyzation Types SUM, MIN or MAX.

#Error: The output was not a numeric value. Only numeric values are allowed. The return value was: jboss.web

A alphanumeric value was returned in single mode. Only numeric values are allowed. Only request numeric single mode values

#Error: The parameter expression contains a "+" or a "*", which is forbidden, because it causes problems

used special characters in the action names + or & Check if there are any typos in your configuration parameters

#Error: The parameter FreeMemory has the value 95066304. The threshold is p150000. The return value was less than the threshold.

Using p option for thresholds which do not support the percentage option. Check the Monitoring Users guide to know which thresholds support the percentage option and which don't

#Error: Two different parameters can not be compared with the operation MIN. The first parameter was: engineName. The wrong parameter was: eventProvider. The actual element counter is 2 and the parameter count is 3

Entered different action names, when doing the Min, Max, Sum Comparison... If you want to use the MIN, MAX and SUM action, the action names which are requested have to be equal

#Error: Wrong comparison sign specified: blah

Messed up the threshold syntax: instead of operator (<,<=,>=) some text ("blah"). Check your thresholds in the Thresholds monitor. Every Threshold must look like (onTime,<,300)

#NOK: #192.168.240.152 (search for engineName) value "jboss.web" is NOT == than threshold ""

messed up the threshold syntax: instead of a threshold just write nothing. Check your thresholds in the Thresholds monitor. Every Threshold must look like (onTime,<,300)

#OK: #192.168.240.152 (search for getLastAccessedTime) value "#Error: Exception: Error: An Invocation Exception was thrown, when trying to invoke the request on the application server" is != than threshold "Hallo"

Entered an Integer, when a String would be needed. Check the Parameters and Signatures given to the operation invocation. Take the Task output for that

"#OK: #192.168.240.152 (search for getLastAccessedTime) value ""#Error: Exception: Error: An Invocation Exception was thrown, when trying to invoke the request on the application server"" is != than threshold ""Hallo"" ERROR_installation"

Entered nothing in parameters when needed. Check the Parameters and Signatures given to the operation invocation. Take the Task output for that

"#OK: #192.168.240.152 (search for getLastAccessedTime) value ""#Error: Exception: Error: An Invocation Exception was thrown, when trying to invoke the request on the application server"" is != than threshold ""Hallo"" ERROR_installation"

messed up the syntax: Give two parameters to a single parameter operation. Check the Parameters and Signatures given to the operation invocation. Take the Task output for that

#Server not configured for System sysdyssl

Entered wrong PE_SystemName. Enter a valid PE_SystemName

#The threshold contained an error. The treshold given was 150000 200000000 80 80 80 80 80 10 10 10 p80 8000 8R00.

Invalid characters in Threshold definition. Check the Thresholds for some typos. In this example there is an R in the last Threshold

#The threshold contained an error. The treshold given was "Nonsense".

"Nonsense" in Threshold. Check the Thresholds for some typos.

#UnknownHost::Error: A user without password or a password without user was given.

Entered no password, when needed. Check the security configuration of the application server

#UnknownHost::Error: A user without password or a password without user was given.

Entered password, when not needed. Check the security configuration of the application server

#UnknownHost::Error: Host not given. Host is mandatory for your connection type. Usage: -h [host]

Entered no host, when needed. Enter the host

#UnknownHost::Error: No ObjectName given to program call. ObjectName is mandatory. Usage: -o [ObjectName]

Entered no objectname. Enter an object name

#UnknownHost::Error: Parameter and signature must have the same number of arguments. Usage: -t [param1 param2 .. paramN] -g [sign1 sign2 .. signN]

Entered another number of signatures than parameters were set.. Enter the same number of parameters as you entered number of signature

#UnknownHost::Error: Program arguments have a wrong syntax. Argument identifier without argument. Eg: -h -p 2000. Right: -h localhost -p 2000

Entered a negative value for timeout. No attribute may start with a "-" (minus)

#UnknownHost::Error: The connection type you selected needs a service URL

Entered no service url, when needed. When using JSR160 connection type, use the ServiceURL

#UnknownHost::Error: The Delimiters (::) have been set wrong. The right syntax is: "ServerName :: RequiredInformation1 RequiredInformation2 .. RequiredInformationN :: ApplicationName"

No Server Connection Data. Enter a Server Connection Data

#UnknownHost::Error: The delimiters in the signatures and the parameters are not on the same position. For each delimiter in the signatures, there needs to be a delimiter in the parameters

set the delimiters from the signature on another position than the parameters' are.. Enter the same number of parameters as you entered number of signature and put the delimiters in the same position

#UnknownHost::Error: The log level was not valid. Valid values are: "OFF", "ERROR" and "DEBUG". The given debug level was: AFEE

Entered a non existing log level. Enter one of the valid Log Levels

#UnknownHost::Error: The name of the attribute / invokation was not given. Usage: -n [attributeName/operationName]

Entered no action names. At least one Action Name must be entered

#UnknownHost::Error: The path of the given log file does not exist or the output file name given is a directory itself

Entered a wrong path to the log file. Check the path to your log file

#UnknownHost::Error: The signature and parameters attributes must not be requested, if the action is not "operation"

Entered a parameter, when action is attribute. Remove all parameters and signatures... These are only allowed in operation invokations

#UnknownHost::Error: The signature and parameters attributes must not be requested, if the action is not "operation"

Entered a signature, when action is attribute. Remove all parameters and signatures... These are only allowed in operation invokations

#UnknownHost::Error: The value given to the program as timeout parameter is not valid

Entered a alphanumerical value to timeout. The timeout must be a number without any other alphanumerica characters or commas

#UnknownHost::Error: When a parameter is given also a signature has to be given and vice versa

Entered no signature when it is needed. Check the Parameters and Signatures given to the operation invokation. Take the Task output for that

Appendix D. P8 4.0 PCH Counters

PCH Counters Content Engine

/RPC/ExecuteChanges

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

/RPC/ExecuteSearch

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

/RPC/GetObjects

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

/RPC/GetSearchMetadata

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

/RPC/Request Forwarding

Counter Name	Type	Description
Outgoing Requests Forwarded	Event	Outgoing Requests Forwarded

Counter Name	Type	Description
Incoming Forwarded Requests	Event	Incoming Forwarded Requests
Outgoing Request Forwarding Failures	Event	Outgoing Request Forwarding Failures

/Content Engine Object Store Service/USER/Object Store <store name>/Annotation

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.
Loads	Event	The total number of objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Class Definition

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.
Loads	Event	The total number of objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Content Element

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.
Loads	Event	The total number of objects loaded.
Moves	Event	The total number of objects moved.

/Content Engine Object Store Service/USER/Object Store <store name>/Custom Object

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.
Loads	Event	The total number of objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Document

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.

Counter Name	Type	Description
Loads	Event	The total number of objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Folder

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.
Loads	Event	The total number of objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Property Template

Counter Name	Type	Description
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 Engine Object Store Service/USER/Object Store <store name>/RCR

Counter Name	Type	Description
Inserts	Event	The total number of objects created.
Updates	Event	The total number of objects modified.
Deletes	Event	The total number of objects deleted.
Loads	Event	The total number of objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Ad Hoc Query

Counter Name	Type	Description
Queries	Event	The total number of ad hoc queries executed.
Query Continuations	Event	The total number of query continuations.
Query Result Rows	Event	The total number of result rows returned by ad hoc queries.
Queries In Progress	Meter	The total number of queries currently in progress.

/Content Engine Object Store Service/USER/Object Store <store name>/Changes

Counter Name	Type	Description
Changes Succeeded	Event	Changes Succeeded
Changes Failed	Event	Changes Failed
Changes In Progress	Meter	Changes In Progress

/Content Engine Object Store Service/USER/Object Store <store name>/Repository Object

Counter Name	Type	Description
Objects Created	Event	The total number of repository objects created.
Objects Deleted	Event	The total number of repository objects deleted.
Objects Updated	Event	The total number of repository objects updated.
Objects Loaded	Event	The total number of repository objects loaded.

/Content Engine Object Store Service/USER/Object Store <store name>/Security Descriptor Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of security descriptor cache requests.
Cache Hit Count	Event	The total number of security descriptor cache hits.
Cache Entries	Meter	The total number of security descriptors currently in the security descriptor cache

/Content Engine Object Store Service/USER/Object Store <store name>/Security Proxy Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of security proxy cache requests.
Cache Hit Count	Event	The total number of security proxy cache hits.
Cache Entries	Meter	The total number of security descriptors currently in the security proxy cache

/Content Engine Object Store Service/USER/Object Store <store name>/Folder Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of folder cache requests.
Cache Hit Count	Event	The total number of folder cache hits.
Cache Miss Count	Event	The total number of folder name misses within the Folder Cache
Cache Flush Count	Event	The total number of times the Folder Cache has been flushed
Cache Entries	Meter	The total number of entries currently in the Folder Cache.
Cache Reap Last Size	Meter	Cache Reap Last Size
Cache Reap Last Time	Meter	Cache Reap Last Time
Cache Reap Total Time	Meter	Cache Reap Total Time

Counter Name	Type	Description
Cache Reap Total Count	Event	Cache Reap Total Count

/Content Engine Object Store Service/USER/Object Store <store name>/Queue Items

Counter Name	Type	Description
Items Inserted	Event	The total number of items inserted.
Items Processed	Event	The total number of items processed.
Items Process-Succeeded	Event	The total number of items processed successfully.
Items Process-Failed	Event	The total number of items failed.
Items Poison	Event	The total number of poison items.

/Content Engine Object Store Service/USER/Object Store <store name>/Publish Requests

Counter Name	Type	Description
Items Inserted	Event	The total number of items inserted.
Items Processed	Event	The total number of items processed.
Items Process-Succeeded	Event	The total number of items processed successfully.
Items Process-Failed	Event	The total number of items failed.
Items Poison	Event	The total number of poison items.

/Content Engine Object Store Service/USER/Object Store <store name>/Others

Counter Name	Type	Description
Enumerations	Event	The total number of enumerations performed.
Enumeration Continuations	Event	The total number of enumeration continuations.
Synchronous Events Fired	Event	The total number of synchronous events fired.
Asynchronous Events Fired	Event	The total number of asynchronous events fired.
Document Classifications Requested	Event	The total number of document classifications requested.

/Content Engine Object Store Service/USER/Object Store <store name>/Independent Object Retrieval

Counter Name	Type	Description
Action	Event	Action
Action Consumer	Event	Action Consumer
Annotation	Event	Annotation
ChoiceList	Event	ChoiceList

Counter Name	Type	Description
ClassDefinition	Event	ClassDefinition
ClassDescription	Event	ClassDescription
CustomObject	Event	CustomObject
DocumentLifecycleAction	Event	DocumentLifecycleAction
Event	Event	Event
Folder	Event	Folder
Link	Event	Link
PropertyTemplate	Event	PropertyTemplate
QueueItem	Event	QueueItem
Relationship	Event	Relationship
SecurityPolicy	Event	SecurityPolicy
StoragePolicy	Event	StoragePolicy
StorageArea	Event	StorageArea
TableDefinition	Event	TableDefinition
VersionSeries	Event	VersionSeries
Versionable	Event	Versionable

/Content Engine Object Store Service/USER/Object Store <store name>/Database

Counter Name	Type	Description
select	Event	The total number of DB selects.
insert	Event	The total number of DB inserts.
delete	Event	The total number of DB deletes.
update	Event	The total number of DB updates.
create	Event	The total number of DB creates.
alter	Event	The total number of DB alters.
drop	Event	The total number of DB drops.
Other Statements	Event	The total number of other DB statements.
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.
create/Duration	Duration	The time for each create call.
alter/Duration	Duration	The time for each alter call.
drop/Duration	Duration	The time for each drop call.
Other Statements/Duration	Duration	The time for each call of other statement

/Content Engine Object Store Service/USER/<object store name>/Roll Forward Dispatcher

Counter Name	Type	Description
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Counter Name	Type	Description
Batch Update and Selection	Event	Total number of batch update and selection statements issued for the Content Queue table.
Batch Update and Selection Row	Event	Total number of rows updated and selected from the Content Queue table.
Batch Update Failures	Event	Number of failures encountered updating batches in the Content Queue table.
Batch Selection Failures	Event	Number of failures encountered selecting batches in the Content Queue table.
Expired Batch Updates	Event	Total number of expired batch update statements issued for the Content Queue table.
Expired batch Update Rows	Event	Total number of expired rows updated in the Content Queue table.
Expired Batch Update Failures	Event	Number of failures encountered updating expired batches in the Content Queue table.
Pending Batches	Meter	Current number of pending batches in the dispatchers queue.
Resolution Pending Batches	Meter	Current number of completed batches in the dispatcher's resolution queue.
Active Worker Threads	Meter	Current number of active Content Queue Worker threads.
Batches Added to Queue	Event	Total batches added to the dispatcher's queue.
Requests Added to 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	Requests Re-Queued for Retry
Requests For Deleted Area Purged	Event	Total number of requests purge due to the storage area being deleted.
Worker Thread Startup	Event	Total number of Content Queue Worker Threads started.
Worker Thread Completion	Event	Total number of Content Queue Worker Threads that reached the completed state.

/Content Engine Object Store Service/USER/<object store name>/<storage area name>

Counter Name	Type	Description
Number of Content Elements	Meter	Total number of content elements contained in the Storage Area. Corresponds to the element_count column of StorageClass table.

Counter Name	Type	Description
Size of Content Elements (Kbytes)	Meter	Total size (in K bytes) of all content elements contained in the Storage Area. Corresponds to the element_kbytes column of the 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.
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 Kbytes property).

/Content Engine Object Store Service/USER/Server Based Counters/Queue Item Processing

Counter Name	Type	Description
Attempts	Event	Attempts
Attempts Failed	Event	Attempts Failed
Attempts/Duration	Accumulator/Duration	Attempts/Duration

/Content Engine Object Store Service/USER/Server Based Counters/Publish Request Processing

Counter Name	Type	Description
Attempts	Event	Attempts
Attempts Failed	Event	Attempts Failed
Attempts/Duration	Accumulator/Duration	Attempts/Duration

/Content Engine Object Store Service/USER/Server Based Counters/Background Thread Pool

Counter Name	Type	Description
Number of Threads Sleeping	Meter	Number of Threads Sleeping
Number of Threads Total	Meter	Number of Threads Total
Numbers of Works Queued	Meter	Numbers of Works Queued

/Content Engine Object Store Service/USER/Server Based Counters/Independent Object Retrieval

Counter Name	Type	Description
Domain	Event	Domain
ObjectStore	Event	ObjectStore

/Content Engine Object Store Service/USER/Server Based Counters/Database

Counter Name	Type	Description
select	Event	The total number of DB selects.
insert	Event	The total number of DB inserts.
delete	Event	The total number of DB deletes.
update	Event	The total number of DB updates.
create	Event	The total number of DB creates.
alter	Event	The total number of DB alters.
drop	Event	The total number of DB drops.
Other Statements	Event	The total number of other DB statements.
Batches	Event	The total number of batches.
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.
create/Duration	Duration	The time for each create call.
alter/Duration	Duration	The time for each alter call.
drop/Duration	Duration	The time for each drop call.
Other Statements/Duration	Duration	The time for each call of other statement
Batches/Duration	Duration	The time for each batch

/Content Engine Object Store Service/USER/Server Based Counters/DirectoryServer-<hostname:port>/LDAP Connection

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests/Duration	Accumulator/Duration	Requests/Duration

/Content Engine Object Store Service/USER/Server Based Counters/DirectoryServer-<hostname:port>/LDAP Search

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requests/Duration	Accumulator/Duration	Requests/Duration

/Content Engine Object Store Service/USER/Server Based

Counters/SecurityProvider/ExecuteSearch

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/FindGroups**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/FindUsers**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetAllRealms**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetGroup**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetPrincipalById**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetPrincipalName**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetPrincipalProperty**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetRealm**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetRealmByPrincipalId**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetSecurityId**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetSecurityIdList**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SecurityProvider/GetUser**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/ActiveDirectoryProvider/GetGroupByName**

Counter Name	Type	Description
Requests	Event	Requests

**/Content Engine Object Store Service/USER/Server Based
Counters/EDirectoryProvider/GetGroupByName**

Counter Name	Type	Description
Requests In Progress	Meter	Requests In Progress

**/Content Engine Object Store Service/USER/Server Based
Counters/IBMTivoliProvider/GetGroupByName**

Counter Name	Type	Description
Requests Failed	Event	Requests Failed

**/Content Engine Object Store Service/USER/Server Based
Counters/SunOneProvider/GetGroupByName**

Counter Name	Type	Description
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SunOneProvider/GetGroupBySid**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SunOneProvider/GetUserByName**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SunOneProvider/GetUserBySid**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SunOneProvider/SearchUsers**

Counter Name	Type	Description
Requestes	Event	Requestes
Requestes In Progress	Meter	Requestes In Progress
Requestes Failed	Event	Requestes Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

**/Content Engine Object Store Service/USER/Server Based
Counters/SunOneProvider/SearchGroups**

Counter Name	Type	Description
Requests	Event	Requests
Requests In Progress	Meter	Requests In Progress
Requests Failed	Event	Requests Failed
Requests/Duration	Accumulator/Duration	Requests/Duration

/Content Engine Object Store Service/USER/Server Based Counters/SecurityProviderCache/Principal To SidList Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of cache requests.
Cache Hit Count	Event	The total number of cache hits.
Cache Flush Count	Event	The total number of cache flushes.
Cache Entries	Meter	The total number of entries currently in the cache

/Content Engine Object Store Service/USER/Server Based Counters/SecurityProviderCache/Principal Name To Sid Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of cache requests.
Cache Hit Count	Event	The total number of cache hits.
Cache Flush Count	Event	The total number of cache flushes.
Cache Entries	Meter	The total number of entries currently in the cache

/Content Engine Object Store Service/USER/Server Based Counters/SecurityProviderCache/Sid To Security Principal Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of cache requests.
Cache Hit Count	Event	The total number of cache hits.
Cache Flush Count	Event	The total number of cache flushes.
Cache Entries	Meter	The total number of entries currently in the cache

/Content Engine Object Store Service/USER/Server Based Counters/Marking Set Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of cache requests.
Cache Hit Count	Event	The total number of cache hits.
Cache Entries	Meter	The total number of entries currently in the cache

/Content Engine Object Store Service/USER/Server Based Counters/Inbound Filename Cache

Counter Name	Type	Description
Cache Attempt Count	Event	The total number of cache requests.
Cache Hit Count	Event	The total number of cache hits.
Cache Entries	Meter	The total number of entries currently in the cache

/Content Engine Object Store Service/USER/Server Based Counters/<storage area name>

Counter Name	Type	Description
Content Elements Uploaded	Event	Content Elements Uploaded
Content Uploaded Size	Event	Content Uploaded Size
Content Upload Request Abandoned	Event	Content Upload Request Abandoned
Content Elements Retrieved	Event	Content Elements Retrieved
Content Retrieved Size	Event	Content Retrieved Size
Content Retrieval Request Abandoned	Event	Number of content retrieval requests that were never closed by the client.

/Content Engine Object Store Service/USER/Server Based Counters/Roll Forward Processed/<storage area name>

Counter Name	Type	Description
Finalize New Element	Event	Total number of content elements finalized (committed to the system) for the Storage Area.

/Content Engine Object Store Service/USER/Server Based Counters/Roll Forward Requested/<storage area name>

Counter Name	Type	Description
Finalize Moved Element	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	Event	Delete Element
Delete All Elements	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	Event	Total number of content elements migrated to a fixed content device for the Storage Area.
Migrate Document	Event	Total number of logical or physical document objects created on the fixed device for the Storage Area.

Counter Name	Type	Description
Delete Fixed Content Element	Event	Total number of content elements deleted from a fixed content device for the Storage Area.
Delete Fixed Content Document	Event	Total number of logical or physical document objects deleted from the fixed device for the Storage Area.
Federated Lockdown	Event	Total number of federated document objects locked down for this fixed device.

/Content Engine Object Store Service/USER/Server Based Counters/Centera FCD

Counter Name	Type	Description
Cached Pool	Meter	Current number of open Centera Pool connections in the cache.
Pools Added to Cache	Event	Pools Added to Cache
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 via 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 via the purge delete scheme.
C-Clip Deletion Failures	Event	C-Clip Deletion Failures
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.

/Content Engine Object Store Service/USER/Server Based Counters/Image Service FCD

Counter Name	Type	Description
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Counter Name	Type	Description
Logon	Event	Total number of logons performed to the IS device. <ssi.logon>
Logoff	Event	Total number of logoffs performed to the IS device. <ssi.logoff>
Logon Failure	Event	Total number of failed logons performed to the IS device. <ssi.logon>
Logoff Failure	Event	Total number of failed 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).
Total Bytes Written To IS	Event	Total Bytes Written To IS
Documents Deleted	Event	Total number of native (to P8) IS Documents deleted (mode=1). <ssi.deleteDocuments>
Federated Documents Deleted	Event	Total number of federated IS Documents deleted (mode != 1). <ssi.deleteDocuments>
Annotations Deleted	Event	Total number of IS Annotations deleted.
Document Deletion Failures	Event	Total number of failures deleting native (to P8) IS Documents (mode=1). <ssi.deleteDocuments>
Federated Document Deletion Failures	Event	Total number of failures deleting federated IS Documents (mode != 1). <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>

/Content Engine Object Store Service/USER/Server Based Counters/CFS-IS Import Agent

Counter Name	Type	Description
Documents Processed	Event	Total number of CFS-IS documents processed.

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

/Content Engine Object Store Service/USER/Server Based Counters/FSB FCD

Counter Name	Type	Description
Logon	Event	Total number of successful logon calls.

/Content Engine Object Store Service/USER/Server Based Counters/Snaplock FCD

Counter Name	Type	Description
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.

Counter Name	Type	Description
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 via the Normal delete scheme
Files Deleted with Purge	Event	Total number of Files deleted via the Purge delete scheme
Files Deleted with Destroy	Event	Total number of Files deleted via the Destroy delete scheme
File Deletion Failures	Event	Total number of failures attempting to delete files.
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"
Get Retention Time Failures	Event	Total number of failures attempting to Get Snaplock Retention Time.

/Content Engine Object Store Service/USER/Server Based Counters/IICE FCD

Counter Name	Type	Description
Logon	Event	Total number of logons performed to the IS device. <ssi.logon>
Logoff	Event	Total number of logoffs performed to the IS device. <ssi.logoff>
Logon Failure	Event	Total number of failed logons performed to the IS device. <ssi.logon>
Logoff Failure	Event	Total number of failed logoffs performed to the IS device. <ssi.logoff>
Federated Documents Deleted	Event	Total number of federated IS Documents deleted (mode != 1). <ssi.deleteDocuments>
Federated Document Deletion Failures	Event	Total number of failures deleting federated IS Documents (mode != 1). <ssi.deleteDocuments>
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 IICE	Event	Total bytes retrieved from all IS Documents. <currentSSI_CE.read>

/Content Engine Object Store Service/USER/Server Based Counters/CFS Import Agent/Domain Dispatcher

Counter Name	Type	Description
GCD Update Notification Received	Event	GCD Update Notification Received
Active Worker Threads	Meter	Current number of active Content Queue Worker threads.
Worker Thread Startup	Event	Total number of Content Queue Worker Threads started.
Worker Thread Completion	Event	Total number of Content Queue Worker Threads that reached the completed state.

/Content Engine Object Store Service/USER/Server Based Counters/CFS Import Agent/<device name>

Counter Name	Type	Description
Session Table Queries	Event	Session Table Queries
Session Rows Selected	Event	Session Rows Selected
Session Rows Updated	Event	Session Rows Updated
Session Rows Deleted	Event	Session Rows Deleted
Queue Table Queries	Event	Queue Table Queries
Queue Rows Selected	Event	Queue Rows Selected
Queue Rows Updated	Event	Queue Rows Updated
Queue Rows Deleted	Event	Queue Rows Deleted
Content Reference Table Queries	Event	Content Reference Table Queries
Content Reference Rows Selected	Event	Content Reference Rows Selected
Content Reference Rows Updated	Event	Content Reference Rows Updated
Content Reference Rows Deleted	Event	Content Reference Rows Deleted
Content Reference Rows Not Deleted	Event	Content Reference Rows Not Deleted
Federated Documents Created	Event	Federated Documents Created
Federated Documents Loaded	Event	Federated Documents Loaded
Federated Documents Updated	Event	Federated Documents Updated

**/Content Engine Object Store Service/USER/Server Based
Counters/ContentCacheArea/Area Summary**

Counter Name	Type	Description
Number of Content Elements	Meter	<p>* Represents the total number of elements currently in a cache area.</p> <p>* Mirrors the ContentCacheArea.ContentElementCount property.</p>
Size of Content Elements	Meter	<p>* Represents the total size of elements currently in a cache area.</p> <p>* Mirrors the ContentCacheArea.ContentElementKBytes property (but is actual # bytes).</p>
Content Elements Added	Meter	<p>Content Elements Added</p> <p>* Mirrors the ContentCacheArea.ContentElementsCreated property.</p> <p>* The value is cleared when the cache is cleared.</p>
Content Elements Removed	Meter	<p>Content Elements Removed</p> <p>* Mirrors the ContentCacheArea.ContentElementsDeleted property.</p> <p>* The value is cleared when the cache is cleared.</p>
Retrieval Hits	Meter	<p>* Represents the number of content retrievals where the cache should be used and the element already exists in cache.</p> <p>* Doesn't indicate whether the content retrieval actually completed or whether it could only partially be serviced out of cache but in general should represent the number of retrievals where the element was serviced from an already cached file.</p> <p>* The value is cleared when the cache is cleared.</p>
Retrieval Misses	Meter	<p>Retrieval Misses</p> <p>* The value is cleared when the cache is cleared.</p>

/Content Engine Object Store Service/USER/Server Based

Counters/ContentCacheArea/Retrievals

Counter Name	Type	Description
Retrieval Attempts	Event	Retrieval Attempts
Retrieval Hits	Event	<ul style="list-style-type: none"> * The number of retrieval attempts where the element exists in the cache. * Ultimately makes up a component of the area-summary "Retrieval Hits" but represents server specific activity.
Retrieval Misses	Event	<ul style="list-style-type: none"> * The number of retrieval attempts where the element doesn't exist in cache. * Ultimately makes up a component of the area-summary "Retrieval Misses" but represents server specific activity.
Retrieval Populations Completed	Event	<ul style="list-style-type: none"> * The number of content elements that were completely copied to the cache. * Ultimately makes up a component (along with "Uploads Committed") of the area-summary "Number of Content Elements" and "Content Elements Added" but represents server specific activity.
Retrievals Partially Serviced	Event	<ul style="list-style-type: none"> * The number of content retrievals that were only serviced partially from cache. For whatever reason the retrieval process had to revert to the source storage area directly.

/Content Engine Object Store Service/USER/Server Based Counters/ContentCacheArea/Uploads

Counter Name	Type	Description
Uploads Attempted	Event	Uploads Attempted
Uploads Completed	Event	<ul style="list-style-type: none"> * The number of uploads through the cache that complete. * The element may or may not be kept depending on if the transaction ultimately commits. The upload completion and the transaction committal may happen on different servers.

Counter Name	Type	Description
Uploads Committed	Event	<ul style="list-style-type: none"> * The number of uploads that are saved because the transaction commits. * This may occur on a different server than the one that originally handled the upload. * Ultimately makes up a component (along with "Retrieval Populations Completed") of the area-summary "Number of Content Elements" and "Content Elements Added" but represents server specific activity.
Uploads Rolled Back	Event	<ul style="list-style-type: none"> * The number of uploads that are discarded because the transaction rolls back. * This may occur on a different server than the one that originally handled the upload.

/Content Engine Object Store Service/USER/Server Based Counters/ContentCacheArea/Prunings

Counter Name	Type	Description
Prunings Started	Event	* The number of times a pruning operation is started. The operation may not complete for a variety of reasons.
Prunings Completed	Event	* The number of times a pruning operation completes.

/Content Engine Object Store Service/USER/Server Based Counters/ContentCacheArea/Deletions

Counter Name	Type	Description
Completed Elements Removed	Event	<ul style="list-style-type: none"> * The number of completed content elements that are removed from the cache. * Ultimately makes up a component of the area-summary "Content Elements Removed" but represents server specific activity.
All Elements Removed	Event	* The number of elements - completed or otherwise - that are removed from the cache.

/Content Engine Object Store Service/USER/Server Based Counters/ContentCacheArea/In-memory State Cache

Counter Name	Type	Description
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Counter Name	Type	Description
Cache Attempt Count	Event	* The number of lookups in the in-memory cache holding state about the content elements in the cache area. The size of this in-memory cache is controlled by the ContentCacheConfiguration.MaxInMemoryElementState property.
Cache Hit Count	Event	* The number of lookups where the element already existed in the in-memory state cache.
Cache Entries	Meter	* The number of elements in the in-memory state cache.

PCH Counters Process Engine

/IS (Mini)/USER/Process Engine/

Counter Name	Type	Description
Internal RPCs	Meter	. Represents the number of Internal RPCs
External RPCs	Meter	* Represents the number of external RPCs
Object Service RPCs	Meter	* Represents the number of Object Service RPCs
Work Object Inject RPCs	Meter	* Represents the number of RPCs requesting Work Objects creations
Queue Query RPCs	Meter	* Represents the number of Queue Query RPCs received
Roster Query RPCs	Meter	* Represents the number of Roster Query RPCs received
Lock Work Object RPCs	Meter	* Represents the number or RPCs requesting the lock of a Work Object.
Update Work Object RPCs	Meter	* Represents the number of RPCs requesting to update a Work Object
Lock work object errors	Meter	* The number of lock Work Object RPCs that fail.
Move work object duplicates errors	Meter	* Not Used
Move work object to new server errors	Meter	* Not Used.
Transaction deadlock errors	Meter	* Number of deadlock transaction errors.
Timer manager update errors	Meter	* Timer manager timeout attempts which fail due to no record or record locked.
Work objects skip due to sec errors	Meter	* The number of times Work Objects skipped in queries due to no access allowed by security.

Counter Name	Type	Description
Java RPCs	Meter	* The number of RPCs received from the client PE Java API.
email notification errors	Meter	* The number of vwnotify errors.
Executed Regular Steps	Meter	* The number of steps executed.
Executed System Steps	Meter	* The number of system steps executed.
Receive Web Service Instructions	Meter	* The number of Web Services receive instructions executed.
Invoke Web Service Instructions	Meter	* The number of Web Services invoke instructions executed.
Exceed the Work Space Cache	Meter	* The number of Work Spaces swapped from cache.
Exceed the Isolated Region Cache	Meter	* Not Used.
Database reconnect	Meter	* The number of database connection retrys due to lost database connections
authentication errors	Meter	* The number of authentication errors due to no permission.
authentication token timeouts	Meter	* The number authentication token timeouts.

/IS(mini)/RPC/VWJ

Counter Name	Type	Description
CheckVWVersion	Event	Represents RPC counter for CheckVWVersion
ConvertSecurityIdstoNames	Event	Represents RPC counter for ConvertSecurityIdstoNames
ConvertSecurityNamestolds	Event	Represents RPC counter for ConvertSecurityNamestolds
CreateLiveWorkobject	Event	Represents RPC counter for CreateLiveWorkobject
DeleteInjectSession	Event	Represents RPC counter for DeleteInjectSession
DeleteUserInfo	Event	Represents RPC counter for DeleteUserInfo
DeleteWorkObject	Event	Represents RPC counter for DeleteWorkObject
DoReject	Event	Represents RPC counter for DoReject
DoReturn	Event	Represents RPC counter for DoReturn
DoSaveandRedirect	Event	Represents RPC counter for DoSaveandRedirect
FetchAttlsReferenced	Event	Represents RPC counter for FetchAttachmentIsReferenced

Counter Name	Type	Description
FetchAttlsReferencedBy	Event	Represents RPC counter for FetchAttachmentIsReferencedBy
FetchIsGroup	Event	Represents RPC counter for FetchIsGroup
FetchLogDefinition	Event	Represents RPC counter for FetchLogDefinition
FetchParticipants	Event	Represents RPC counter for FetchParticipants
FetchQueueDefinition	Event	Represents RPC counter for FetchQueueDefinition
FetchRosterDefinition	Event	Represents RPC counter for FetchRosterDefinition
FetchSecDomains	Event	Represents RPC counter for FetchSecurityDomains
FetchServerConfig	Event	Represents RPC counter for FetchServerConfiguration
FetchStepDefinition	Event	Represents RPC counter for FetchStepDefinition
FetchUserEnvRecs	Event	Represents RPC counter for FetchUserEnvironmentRecords
FetchUserInfo	Event	Represents RPC counter for FetchUserInfo
FetchUserList	Event	Represents RPC counter for FetchUserList
GetAllServers	Event	Represents RPC counter for GetAllServers
GetAttributes	Event	Represents RPC counter for GetAttributes
GetConfigInfo	Event	Represents RPC counter for GetConfigInfo
GetCurrentVersion	Event	Represents RPC counter for GetCurrentVersion
GetExposedFields	Event	Represents RPC counter for GetExposedFields
GetFileFromServer	Event	Represents RPC counter for GetFileFromServer
GetIndexFields	Event	Represents RPC counter for GetIndexFields
GetInjectSessionInfo	Event	Represents RPC counter for GetInjectSessionInfo
GetLaunchStepProcessor	Event	Represents RPC counter for GetLaunchStepProcessor
GetLimAppFuncFlag	Event	Represents RPC counter for GetLimitApplicationFunctionalityFlag
GetLockStatus	Event	Represents RPC counter for GetLockStatus
GetLogDef	Event	Represents RPC counter for GetLogDef
GetLoggingState	Event	Represents RPC counter for GetLoggingState
GetLogNames	Event	Represents RPC counter for GetLogNames
GetNewStepElement	Event	Represents RPC counter for GetNewStepElement

Counter Name	Type	Description
GetNewStepFromVWVersion	Event	Represents RPC counter for GetNewStepFromVWVersion
GetNewWorkObjectFields	Event	Represents RPC counter for GetNewWorkObjectFields
GetProcess	Event	Represents RPC counter for GetProcess
GetQueueDef	Event	Represents RPC counter for GetQueueDef
GetQueueDepth	Event	Represents RPC counter for GetQueueDepth
GetQueueNames	Event	Represents RPC counter for GetQueueNames
GetQueueOperations	Event	Represents RPC counter for GetQueueOperations
GetQueueStatistics	Event	Represents RPC counter for GetQueueStatistics
GetRosterCount	Event	Represents RPC counter for GetRosterCount
GetRosterDef	Event	Represents RPC counter for GetRosterDef
GetRosterNames	Event	Represents RPC counter for GetRosterNames
GetRosterStatistics	Event	Represents RPC counter for GetRosterStatistics
GetStepProcessorById	Event	Represents RPC counter for GetStepProcessorById
GetStepProcessorByName	Event	Represents RPC counter for GetStepProcessorByName
GetStepProcessorList	Event	Represents RPC counter for GetStepProcessorList
GetSystemConfigInfo	Event	Represents RPC counter for GetSystemConfigInfo
GetSystemWideConfig	Event	Represents RPC counter for GetSystemWideConfig
GetUserNames	Event	Represents RPC counter for GetUserNames
getWorkClassName	Event	Represents RPC counter for GetWorkClassName
GetWorkclassXml	Event	Represents RPC counter for GetWorkclassXml
GetWorkflowSignature	Event	Represents RPC counter for GetWorkflowSignature
InitializeAllRegions	Event	Represents RPC counter for InitializeAllRegions
InitializeRegion	Event	Represents RPC counter for InitializeRegion
InjectWorkObjects	Event	Represents RPC counter for InjectWorkObjects
IsMemberOfGroup	Event	Represents RPC counter for IsMemberOfGroup
LogFetch	Event	Represents RPC counter for LogFetch

Counter Name	Type	Description
LogFetchCount	Event	Represents RPC counter for LogFetchCount
LogGetWorkElementFields	Event	Represents RPC counter for LogGetWorkElementFields
LogMessage	Event	Represents RPC counter for LogMessage
Logoff	Event	Represents RPC counter for Logoff
Logon	Event	Represents RPC counter for Logon
Logon2	Event	Not Used.
QGetRtnStackElems	Event	Represents RPC counter for QueueGetReturnStackElements
QueueFetch	Event	Represents RPC counter for QueueFetch
QueueFetchCount	Event	Represents RPC counter for QueueFetchCount
QueueGetWorkElementFields	Event	Represents RPC counter for QueueGetWorkElementFields
QueueLockInvocation	Event	Represents RPC counter for QueueLockInvocation
QueueLockWorkObject	Event	Represents RPC counter for QueueLockWorkObject
RecoverUser	Event	Represents RPC counter for RecoverUser
RemoveDatabase	Event	Represents RPC counter for RemoveDatabase
RemoveLinkFlag	Event	Not Used
RosterFetch	Event	Represents RPC counter for RosterFetch
RosterFetchCount	Event	Represents RPC counter for RosterFetchCount
RosterGetWorkElementFields	Event	Represents RPC counter for RosterGetWorkElementFields
RosterLockInvocation	Event	Represents RPC counter for RosterLockInvocation
RosterLockWorkObject	Event	Represents RPC counter for RosterLockWorkObject
RostGetRtnStackElems	Event	Represents RPC counter for RosterGetReturnStackElements
SaveNewStepElement	Event	Represents RPC counter for SaveNewStepElement
SaveUserInfo	Event	Represents RPC counter for SaveUserInfo
SetSystemWideConfig	Event	Represents RPC counter for SetSystemWideConfig
TerminateWorkObject	Event	Represents RPC counter for TerminateWorkObject
Transfer	Event	Represents RPC counter for Transfer
UnlockSave	Event	Represents RPC counter for UnlockSave

/IS(mini)/RPC/VWR

Counter Name	Type	Description
DeleteEnvironmentFields	Event	Represents RPC count for DeleteEnvironmentFields
DeleteInjectSession	Event	Represents RPC count for DeleteInjectSession
DeleteObjects	Event	Represents RPC count for DeleteObjects
DeleteOldViews	Event	Represents RPC count for DeleteOldViews
DeleteStoredQueries	Event	Represents RPC count for DeleteStoredQueries
DetermineQueue	Event	Represents RPC count for DetermineQueue
ExecuteStoredQuery	Event	Represents RPC count for ExecuteStoredQuery
FinishCompileExecute	Event	Represents RPC count for FinishCompileExecute
FullInitialize	Event	Represents RPC count for FullInitialize
GetCompileDoneStatus	Event	Represents RPC count for GetCompileDoneStatus
GetConfigInfo	Event	Represents RPC count for GetConfigInfo
GetInjectSessionInfo	Event	Represents RPC count for GetInjectSessionInfo
GetModifyOperationInfo	Event	Represents RPC count for GetModifyOperationInfo
GetServerOfCurrentUser	Event	Represents RPC count for GetServerOfCurrentUser
GetSystemConfigInfo	Event	Represents RPC count for GetSystemConfigInfo
GetUserToServerMapping	Event	Represents RPC count for GetUserToServerMapping
InitRegion	Event	Represents RPC count for InitRegion
InjectWorkObjects	Event	Represents RPC count for InjectWorkObjects
LogModifyDone	Event	Represents RPC count for LogModifyDone
Logoff	Event	Represents RPC count for Logoff
Logon	Event	Represents RPC count for Logon
LogQuery	Event	Represents RPC count for LogQuery
PrepareToLockWob	Event	Represents RPC count for PrepareToLockWob
QCountWhere	Event	Represents RPC count for QCountWhere
QCountWorkObjects	Event	Represents RPC count for QCountWorkObjects
QDeleteQueueRecord	Event	Represents RPC count for QDeleteQueueRecord
QDeleteWorkObject	Event	Represents RPC count for QDeleteWorkObject

Counter Name	Type	Description
QDispatchReadAndLock	Event	Represents RPC count for QDispatchReadAndLock
QDoQuery2	Event	Represents RPC count for QDoQuery2
QDoQuery3	Event	Represents RPC count for QDoQuery3
QGetStatistic	Event	Represents RPC count for QGetStatistic
QLockInstructionInvocation	Event	Represents RPC count for QLockInstructionInvocation
QLockWorkObject	Event	Represents RPC count for QLockWorkObject
QLogMessage	Event	Represents RPC count for QLogMessage
QSkipCurrentInstruction	Event	Represents RPC count for QSkipCurrentInstruction
QTerminateWorkObject	Event	Represents RPC count for QTerminateWorkObject
QUnlockObject	Event	Represents RPC count for QUnlockObject
RCountWhere	Event	Represents RPC count for RCountWhere
RCountWorkObjects	Event	Represents RPC count for RCountWorkObjects
RDeleteRosterRecord	Event	Represents RPC count for RDeleteRosterRecord
RDoQuery	Event	Represents RPC count for RDoQuery
ReadEnvironmentFields	Event	Represents RPC count for ReadEnvironmentFields
ReadStoredQueries	Event	Represents RPC count for ReadStoredQueries
ReadWorkStationInfo	Event	Represents RPC count for ReadWorkStationInfo
RemoveDatabase	Event	Represents RPC count for RemoveDatabase
ResetWorkStationInfo	Event	Represents RPC count for ResetWorkStationInfo
RGetStatistic	Event	Represents RPC count for RGetStatistic
RInsertRosterRecord	Event	Represents RPC count for RInsertRosterRecord
RootLogon	Event	Represents RPC count for RootLogon
RUpdateRosterRecord	Event	Represents RPC count for RUpdateRosterRecord
SetSystemConfigInfo	Event	Represents RPC count for SetSystemConfigInfo
SetUserToServerMapping	Event	Represents RPC count for SetUserToServerMapping
StartModifyOperation	Event	Represents RPC count for StartModifyOperation
UpdateObject1	Event	Represents RPC count for UpdateObject1
UpdateObject2	Event	Represents RPC count for UpdateObject2

Counter Name	Type	Description
WriteEnvironmentFields	Event	Represents RPC count for WriteEnvironmentFields
WriteStoredQueries	Event	Represents RPC count for WriteStoredQueries

/IS(mini)/RPC/VWS

Counter Name	Type	Description
AddToTable	Event	Represents RPC count forAddToTable
AssignServerToUser	Event	Represents RPC count for AssignServerToUser
CheckServerUp	Event	Represents RPC count forCheckServerUp
CopyLogTable	Event	Represents RPC count forCopyLogTable
CopyRoster	Event	Represents RPC count for CopyRoster
CopyUserCentricQueues	Event	Represents RPC count for CopyUserCentricQueues
CreateDbViews	Event	Represents RPC count for CreateDbViews
CreateTable	Event	Represents RPC count for CreateTable
DeleteOpComplete	Event	Represents RPC count for DeleteOpComplete
DeleteQueueRecord	Event	Represents RPC count for DeleteQueueRecord
DeleteRegionData	Event	Represents RPC count forDeleteRegionData
DropColumn	Event	Represents RPC count forDropColumn
DropIndex	Event	Represents RPC count for DropIndex
DropTable	Event	Represents RPC count for DropTable
FlushEnvData	Event	Represents RPC count for FlushEnvData
FlushMemory	Event	Represents RPC count for FlushMemory
FlushStoredQueries	Event	Represents RPC count for FlushStoredQueries
GetDaemonQueueFlushComplete	Event	Represents RPC count for GetDaemonQueueFlushComplete
GetRegionInitTimestamp	Event	Represents RPC count for GetRegionInitTimestamp
GetRegionWsTimestamp	Event	Represents RPC count for GetRegionWsTimestamp
GetWorkObject	Event	Represents RPC count for GetWorkObject
InsertHomeExposedFields	Event	Represents RPC count for InsertHomeExposedFields
InsertWorkObject	Event	Represents RPC count for InsertWorkObject
LockAllRegionsForModify	Event	Represents RPC count for LockAllRegionsForModify
LockForModify	Event	Represents RPC count for LockForModify

Counter Name	Type	Description
LockWorkObject	Event	Represents RPC count for LockWorkObject
RemoveChildFromParent	Event	Represents RPC count for RemoveChildFromParent
ResetInitDone	Event	Represents RPC count for ResetInitDone
ResetScalars	Event	Represents RPC count for ResetScalars
RestoreMemory	Event	Represents RPC count for RestoreMemory
StartDaemonQueueFlush	Event	Represents RPC count for StartDaemonQueueFlush
TerminateWobOnHome	Event	Represents RPC count for TerminateWobOnHome
TferCopyQueue	Event	Represents RPC count for TferCopyQueue
TferCopyRoster	Event	Represents RPC count for TferCopyRoster
TferCountElements	Event	Represents RPC count for TferCountElements
TferDeleteOldRosterRecs	Event	Represents RPC count for TferDeleteOldRosterRecs
TferInsertCopiedWorkObject	Event	Represents RPC count for TferInsertCopiedWorkObject
TferInsertInjectRecs	Event	Represents RPC count for TferInsertInjectRecs
TferInsertRosterRecs	Event	Represents RPC count for TferInsertRosterRecs
TferInsertWobInDelay	Event	Represents RPC count for TferInsertWobInDelay
TferMoveWobsForHomeSvrCh	Event	Represents RPC count for TferMoveWobsForHomeSvrCh
TferReadQueue	Event	Represents RPC count for TferReadQueue
TferReformatQueue	Event	Represents RPC count for TferReformatQueue
TferReformatRoster	Event	Represents RPC count for TferReformatRoster
TferRemoveVwopComp	Event	Represents RPC count for TferRemoveVwopComp
TferSwitchRoster	Event	Represents RPC count for TferSwitchRoster
TferUpdateRosterRecs	Event	Represents RPC count for TferUpdateRosterRecs
UnlockAllregionsForModify	Event	Represents RPC count for UnlockAllregionsForModify
UnlockForModify	Event	Represents RPC count for UnlockForModify
UpdateHomeExposedFields	Event	Represents RPC count for UpdateHomeExposedFields
UpdateHomeLocation	Event	Represents RPC count for UpdateHomeLocation

Appendix E. Version information

This documentation applies to internal version 1.03-003.