

Chapter 5

Configuring the Workflow Application

This chapter describes the procedure for configuring the SDX Workflow application after you have installed it.

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Configuring the SDX Workflow Application

To launch the local configuration tool GUI to configure workflow properties:

1. On the workflow engine host, log in as `root` or as an authorized nonroot admin user.
2. Launch the local configuration tool for the workflow engine.

```
./opt/UMC/wkf/etc/config
```

The Workflow Configuration window appears.



NOTE: Whenever you change the configuration of the workflow engine, you must stop and then restart the engine for the changes to take effect. The start and restart operation does not disrupt any ongoing workflow instances; their current states are saved to the persistent store and are then restored.

Execution Control Tab

Use the Execution Control tab to configure the execution of workflows. Table 15 describes the parameters.

Table 15: Execution Control tab parameters

Parameter	Description
Instance Filename	Fully qualified path of the file that stores information about the instances of the active workflows.
Activation Threshold [ms]	Minimum time before the workflow goes to a running state after having gone into a sleep state, in milliseconds. This threshold sets the interval at which the workflow engine polls itself to determine whether work is in progress.
Sleep Threshold [ms]	Maximum time of no state change before the workflow goes into a sleep state, in milliseconds. If the threshold is exceeded, the workflow is paused, it transitions to sleep mode, and the workflow state is put into persistent storage.
Load Server Port	Port on which the workflow engine listens for incoming load information requests.
Load So Timeout [ms]	Maximum time allowed for sending new messages on the same connection, in milliseconds.
Thread Limit	Maximum number of threads that the engine allocates to workflow execution.

EC – Event Adapters Tab

Use the EC – Event Adapters tab to configure the event adapters. Table 16 describes the parameters.

Table 16: Event Adapters tab parameters

Parameter	Description
Timer Adapter Class	Fully qualified class name of the adapter. Typically, you do not change this parameter after you have specified the path.
Timer Adapter Statefile	Fully qualified path of a file that stores the state of the timer adapter.
Timer Adapter Precision	Precision of the internal timer of the adapter, in milliseconds; 500 ms is sufficient for normal use.
E-mail Adapter Class	Fully qualified class name of the adapter. Typically, you do not change this parameter.
E-mail Adapter Statefile	Fully qualified path of a file that stores the state of the e-mail adapter.
E-mail Adapter Host	Hostname or IP address of the incoming POP3 or IMAP mail server.
E-mail Adapter Userid	User ID of the account that the e-mail adapter checks for incoming e-mail.
E-mail Adapter Pswd	Password of the e-mail account that the e-mail adapter checks for incoming e-mail.
E-mail Adapter Protocol	Protocol of the incoming e-mail server: IMAP or POP3.
E-mail Adapter Freqarg	Frequency with which the e-mail adapter checks for e-mail, in milliseconds.
E-mail Adapter Mailbox	Name of the mailbox that the e-mail adapter checks for e-mail messages; you must use INBOX.
Process Adapter Class	Fully qualified class name of the adapter. Typically, you do not change this parameter after you have specified the path.
Process Adapter Statefile	Fully qualified path of a file that stores the state of the process adapter.
Process Adapter Spawners	Number of spawner threads; that is, threads that create external processes. This number is also the limit of concurrent external processes that the workflow engine can spawn.

Library Tab

Use the Library tab to enable the workflow engine to instantiate workflows that are stored in JAR files and in the directory. These JAR files are organized by the JAR archivist, a library subsystem component within the workflow engine.

The JAR Archivist retrieves (reads) the workflows from the JAR files no matter where the JAR files are stored as long as the files are specified with a URL. You must specify a new URL for the file whenever you deploy a new workflow via a new JAR file. The Library tab enables you to configure up to four URLs. You can edit the */etc/workflow.properties* text file to provide for more JAR archivist URLs.

You can also deploy workflows via the directory. You store the class bytecodes that define the workflow and its parameters list in a directory entry under the workflow subtree. For details about this configuration method, see *Chapter 6, Building Workflows*.

The Directory Archivist Base DN field must always point to the workflow subtree. If the field points to another location, the system will not find the workflow objects.

Table 17 describes the parameters.

Table 17: Library tab parameters

Parameter	Description
JAR Archivist URL 1	URL identifying location of a file containing workflows.
JAR Archivist URL 2	URL identifying location of a file containing workflows.
JAR Archivist URL 3	URL identifying location of a file containing workflows.
JAR Archivist URL 4	URL identifying location of a file containing workflows.
Directory Archivist Base DN	Base DN of the subtree containing the workflow objects.

Persistent Store Tab

Use the Persistent Store tab to configure the location where the states of the active workflows are stored. Table 18 describes the parameters.

Table 18: Persistent Store tab parameter

Parameter	Description
Gatherer Filename	Fully qualified path of the file that holds the persistent workflows (the state of the gatherer).

Repository Tab

Use the Repository (R) tab to configure the event interface. Table 19 describes the parameters.

Table 19: Repository tab parameters

Parameter	Description
Server Port	Port on which the workflow engine listens for events incoming from the OSM or OSMW; port 5000.
Server So Timeout [ms]	Maximum time allowed for sending new messages on the same connection, in milliseconds.
Server Priority	Priority of the socket listening thread.
Client So Timeout [ms]	Maximum time allowed for receiving new messages on the same connection, in milliseconds.
Client Priority	Priority of each thread receiving new messages.
Client Connections Limit	Maximum number of concurrent connections.
Encoding	IANA name of the character encoding used by SDX components to exchange TCP/IP messages. The default value is UTF-8; in some JVMs it is UTF8. See your JVM vendor documentation for the appropriate value.
Event Store	Fully qualified path of the file that stores the incoming events.
Result Store	Fully qualified path of the file that stores the outgoing results.
Workflow Store	Fully qualified path of the file that stores the events that originated the active workflows.
Starter Threads	Number of threads that start workflows.
Starter Timeout [ms]	Maximum time allowed for the starter thread to start a workflow, in milliseconds.
Starter Priority	Priority of the workflow starter threads.
Reporter Threads	Number of threads that report results at the end of workflow executions.
Reporter Timeout [ms]	Maximum time allowed for results to report, in milliseconds.
Reporter Priority	Priority of the reporter threads.

R-LDAP Tab

Use the R-LDAP tab to configure the connection between the workflow application and the LDAP directory. Table 20 describes the parameters.

Table 20: R-LDAP tab parameters

Parameter	Description
Version	Version of the LDAP protocol; 2 = OpenLDAP; 3 = Meta Directory.
Port	Port on which the LDAP server listens for new requests.
Host	IP address or hostname of the LDAP directory.
Bind DN	DN used for authentication with the SDX directory. This DN must be authorized to read and write SDX services, SDX subscribers, and SDX service profiles from the directory.
Bind Password	Password used for authentication with the SDX directory.
Server Time Limit [s]	Time limit for the LDAP searches on the server side, in seconds.
Client Time Limit [ms]	Time limit for the LDAP operations on the client side, in milliseconds.
Connect Timeout [s]	Time limit for establishing a connection to the directory, in seconds.
LDAP Connection Pool Size	Size of the pool of connections to the directory

R-Reporter Tab

Use the R-Reporter tab to configure the reporting feature. The workflow engine reports the success or failure of a workflow execution to the OSM component by sending a TCP/IP message to the host responsible for receiving these reports. Table 21 describes the parameters.

Table 21: R-Reporter tab parameters

Parameter	Description
Port	Port on which the report server listens for new requests.
Host	IP address or hostname of the report server.

Other Tab

Use the Other tab to configure parameters of the JVM that hosts the workflow and other information related to system management. Table 22 describes the parameters.

Table 22: Other tab parameters

Parameter	Description
Workflow Root	Root directory where the Workflow application was installed.
Workflow Java	Directory containing the JRE used by the Workflow application.
JVM Max Heap	Upper limit of available memory for the maximum heap size. Default value is 256 MB.
Enable Sysman Client	Enables the workflow engine to communicate to the SNMP agent.
Sysman IOR	Fully qualified path of the file containing the IOR for the SNMP agent.

Configuring the Object State Manager

To launch the local configuration tool to configure the object state manager (OSM) properties:

1. On the OSM host, log in as `root` or as an authorized nonroot admin user.
2. Launch the local configuration tool in the OSM directory.

```
/opt/UMC/osm/etc/osmconfig
```

Request Tab

Use the Request tab to configure the request interface for the OSM. Table 23 describes the parameters.

Table 23: Request tab parameters

Parameter	Description
Server Port	Port on which the OSM listens for client requests.
Server So Timeout [ms]	Maximum time allowed for sending new messages on the same connection, in milliseconds.
Server Priority	Priority of the socket listening thread.
Client So Timeout [ms]	Maximum time allowed for receiving new messages on the same connection, in milliseconds.
Client Ack Timeout [ms]	Maximum time allowed for receiving acknowledgment messages from the client, in milliseconds.
Client Priority	Priority of each thread receiving new messages.
Client Connections Limit	Maximum number of concurrent client connections.
Client Host	IP address or hostname of the client to which the OSM sends the reports.
Client Port	Port on which the client expects the OSM reports.
Encoding	IANA name of the character encoding.
Report Store	Fully qualified path of the file that stores the delayed reports.
Result Store	Fully qualified path of the file that stores the outgoing results.

Report Tab

Use the Report tab to configure the properties related to the report server. The report server is responsible for receiving reports from the workflow engine. Table 24 describes the parameters.

Table 24: Report tab parameters

Parameter	Description
Reporter Priority	Priority of the socket listening thread.
Port	Port on which the report server listens for workflow reports.
Report Connection Limit	Maximum number of concurrent report connections.

LDAP Tab

Use the LDAP tab to configure properties related to the directory that OSM uses to execute workflows. Table 25 describes the parameters.

Table 25: LDAP tab parameters

Parameter	Description
Version	Version of the LDAP protocol.
Port	Port on which the LDAP server listens for new requests.
Host	IP address or hostname of the LDAP server.
Bind DN	DN of the SDX administrator. Default value is <i>cn= osm,ou= components ,o= oper ators,o= umc</i> .
Bind Password	Password of the SDX administrator. Default value is <i>osm</i> .
Base DN	Base DN of the directory root.
Server Time Limit [s]	Time limit for the LDAP searches on the server side, in seconds.
Client Time Limit [ms]	Time limit for the LDAP operations on the client side, in milliseconds.
Connect Timeout [s]	Time limit for establishing a connection to the LDAP server, in seconds.
LDAP Connection Pool Size	Size of the pool of connections to the LDAP server.

Workflow Engines Tab

Use the Workflow Engines tab to specify one or more workflow engines that the OSM uses to execute workflows. Table 26 describes the parameters.

Table 26: Workflow Engines tab parameters

Parameter	Description
Host	IP address or hostname of the first workflow engine host.
Request Port	Port on which the first workflow engine listens for new requests.
Load Information	Port on which the first workflow engine listens for load information requests.
Host	IP address or hostname of the second workflow engine host.
Request Port	Port on which the second workflow engine listens for new requests.
Load Information	Port on which the second workflow engine listens for load information requests.
Host	IP address or hostname of the third workflow engine host.
Request Port	Port on which the third workflow engine listens for new requests.
Load Information	Port on which the third workflow engine listens for load information requests.
Host	IP address or hostname of the fourth workflow engine host.
Request Port	Port on which the fourth workflow engine listens for new requests.
Load Information	Port on which the fourth workflow engine listens for load information requests.

Other Tab

Use the Other tab to configure the server properties. Table 27 describes the parameters.

Table 27: Other tab parameters

Parameter	Description
OSM Root	Root directory where the OSM is installed.
OSM Java	Directory of the JRE used by the OSM.

Configuring the Object State Manager for the Web

To launch the local configuration tool to configure the object state manager for the Web (OSMW) properties:

1. On the OSMW host, log in as `root` or as an authorized nonroot admin user.
2. Launch the local configuration tool in the OSMW directory.

```
/opt/UMC/tomcat/webapps/workflow/WEB-INF/etc/osmintconfig
```

Request Tab

Use the Request tab to configure OSMW properties. Table 28 describes the parameters.

Table 28: Request tab parameters

Parameter	Description
Process Definition Key	URL used to access OSMW when creating process instances.
Duplicate Message Timeout [s]	Maximum time the record of old messages is kept for checking for duplicate messages, in seconds.
Parser Pool Size	Maximum number of XML parsers that can be used simultaneously.
Encoding	IANA name of the character encoding.
Context Store	Name of the file that stores the contexts of the process instances.
Report Store	Fully qualified path of the file that stores the delayed reports.
Result Store	Name of the file that stores the outgoing results.

Report Tab

Use the Report tab to configure the properties related to the report server. The report server is responsible for receiving reports from the workflow engine. Table 29 describes the parameters.

Table 29: Report tab parameters

Parameter	Description
Reporter Priority	Priority of the socket listening thread.
Port	Port on which the report server listens for workflow reports.
Report Connection Limit	Maximum number of concurrent report connections.

LDAP Tab

Use the LDAP tab to configure properties related to the directory that OSM uses to execute workflows. Table 30 describes the parameters.

Table 30: LDAP tab parameters

Parameter	Description
Version	Version of the LDAP protocol.
Port	Port on which the LDAP server listens for new requests.
Host	IP address or hostname of the LDAP server.
Bind DN	DN of the SDX administrator. Default value is <i>cn= osm,ou= components ,o= oper ators,o= umc</i> .
Bind Password	Password of the SDX administrator. Default value is <i>osm</i> .
Base DN	Base DN of directory root.
Server Time Limit [s]	Time limit for the LDAP search on the server side, in seconds.
Client Time Limit [ms]	Time limit for the LDAP operations on the client side, in milliseconds.
Connect Timeout [s]	Time limit for establishing a connection to the LDAP server, in seconds.
LDAP Connection Pool Size	Size of the pool of connections to the LDAP server.

Workflow Engines Tab

Use the Workflow Engines tab to specify one or more workflow engines that the OSMW uses to execute workflows. Table 31 describes the parameters.

Table 31: Workflow Engines tab parameters

Parameter	Description
Host	IP address or hostname of the first workflow engine host.
Request Port	Port on which the first workflow engine listens for new requests.
Load Information	Port on which the first workflow engine listens for load information requests.
Host	IP address or hostname of the second workflow engine host.

Table 31: Workflow Engines tab parameters (continued)

Parameter	Description
Request Port	Port on which the second workflow engine listens for new requests.
Load Information	Port on which the second workflow engine listens for load information requests.
Host	IP address or hostname of the third workflow engine host.
Request Port	Port on which the third workflow engine listens for new requests.
Load Information	Port on which the third workflow engine listens for load information requests.
Host	IP address or hostname of the fourth workflow engine host.
Request Port	Port on which the fourth workflow engine listens for new requests.
Load Information	Port on which the fourth workflow engine listens for load information requests.