

CA IT Process Automation Manager™

Unicenter® NSM Connector Guide

r1



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Chapter 1: Overview

The Unicenter NSM Connector is a module that allows the integration of Unicenter® Network and Systems Management (Unicenter NSM) with CA IT Process Automation Manager™ (CA IT PAM) for the purpose of automating the event management operations of Unicenter NSM.

The Unicenter NSM Module supports Unicenter NSM r3.1 SP1 and Unicenter NSM r11.2.

Important! The Unicenter NSM Module is supported on Microsoft Windows and Linux.

This section contains the following topics:

[Intended Audiences](#) (see page 7)

[Terminology](#) (see page 8)

Intended Audiences

The *Unicenter NSM Connector Guide* is intended for these primary audiences:

- Administrators who install or maintain the Unicenter NSM Connector or a CA IT Process Automation Manager (CA IT PAM) instance
- Administrators, Developers, and Designers of CA IT PAM Processes who want their processes to interact with Unicenter NSM

If you are a CA IT PAM Administrator or a Unicenter NSM Administrator, this guide assumes that you have read and understand the content described in the *CA IT Process Automation Manager Administration Guide*, the *Unicenter NSM Event and Alert Management Guide*, and the *Unicenter NSM Administration Guide*.

If you are a CA IT PAM Process Developer, Designer, or Administrator, this guide assumes that you have read and understand these concepts and associated procedures:

- How to create and run CA IT PAM Processes (as described in the *CA IT Process Automation Manager User Guide*)
- How to create Process and Named Datasets (as described in the *CA IT Process Automation Manager User Guide*)

Terminology

Connector

A CA IT PAM module that interfaces with software external to CA IT PAM.

Module

A set of functionally related Operators that share a common configuration.

Operator

A software element that implements an action and is one of the building blocks of a CA IT PAM Process.

Chapter 2: Installing and Configuring the Unicenter NSM Module

This section contains the following topics:

[Installation Prerequisites](#) (see page 9)

[Installation](#) (see page 9)

[Configuration](#) (see page 11)

[Enable the Unicenter NSM Module](#) (see page 11)

Installation Prerequisites

The Unicenter NSM Connector functions only when a CA IT PAM Agent or Orchestrator is installed and running on the machine where the Unicenter NSM Event Manager is installed.

The following CA IT PAM and Unicenter NSM releases and platforms are supported for the Unicenter NSM Module:

- CA IT PAM 2.1SP3 CP03 or 2.2 SP1 running on Windows or Linux
- Unicenter NSM r3.1 SP1 or r11.2 running on Windows or Linux

Installation

The Unicenter NSM Connector software has a standalone installer:

- *IT_PAM_connector_installer_NSM_1_0.exe* for installing on a Primary Domain Orchestrator running on Windows

Before installing the Unicenter NSM Module, you must first shut down the Primary Domain Orchestrator.

- In a cluster configuration, the first Orchestrator installed is the Primary Orchestrator, and this can be confirmed by seeing that `oasis.server.isPrimary=true` is set in the `OasisConfig.properties` file found in `<itpam_root_directory>\server\c2o\config`, where `<itpam_root_directory>` is the directory where CA IT PAM was installed.
- In a non-clustered configuration, the sole Domain Orchestrator is the Primary Domain Orchestrator.

To install the Connector

1. Log onto the machine and account used to install the CA IT PAM Primary Domain Orchestrator.
2. Run the appropriate version of the installer for your operating system.
3. When the Welcome screen displays, click Next to proceed or click Cancel to exit the installation.

The Licensing terms for this Connector display.

4. If you choose to accept the licensing terms, select "I accept the agreement", and click Next to proceed; otherwise, click Cancel to terminate the installation.
5. Specify the directory where the CA IT PAM Primary Domain Orchestrator was installed (if it differs from the default value) by entering the complete path to the directory, or by clicking Browse and locating the directory.
6. Click Next.

The installer will verify that the Primary Domain Orchestrator is down, and a dialog displays where you select the components to install. (You will only have the choice of this Connector.)

7. Click the check box to select this Connector, and click Next to continue.

The installer will deploy the components of the new Module to the Primary Domain Orchestrator (this may take a few minutes).

8. Click Finish to complete the installation.
9. Restart the Primary Domain Orchestrator.

The installation.log file is located here: *<itpam_root_directory>*\server\c2o where *<itpam_root_directory>* is the folder specified in Step 5.

The newly installed module will not be available immediately on any secondary Orchestrators, but all components will be mirrored within the time specified by the mirroring interval for the secondary Orchestrator.

10. After all components have been mirrored, you must stop and restart each Orchestrator and Agent to make the new Module available for use.

Important! If you installed the module in an existing CA IT PAM r2.1 environment, you must use the Configuration Browser to enable the newly installed module in each environment, on each Orchestrator, and on each Agent where the new module and its Operators will be used.

Configuration

If the CA IT PAM 2.1 SP3 Orchestrator is on the same machine as Unicenter NSM, following these steps before starting the Orchestrator:

- Extract the files *itpamNSMConnector.dll* and *libitpamNSMConnector.so* from the *nsm.native.jar* file located here `<itpam_root_directory>\server\c2o\ext-deploy` then place at the file in this location: `<itpam_root_directory>\server\c2o\ext-lib`.
- If the CA IT PAM 2.1 SP3 Orchestrator is on a Linux platform, update the file *c2osvrd.sh* located here `<itpam_root_directory>\server\c2o` to add an entry `-Djava.library.path="$C2OHOME/ext-lib"` for the variable SVRDEFINES.
- If the CA IT PAM 2.1 SP3 Orchestrator is on a Windows platform, update the file *c2osvcw.conf* located here `<itpam_root_directory>\server\c2o\bin` to add an entry `wrapper.java.library.path.2=ext-lib`.

Enable the Unicenter NSM Module

After you install the Unicenter NSM Module, you must verify that the Module is enabled before you can use it.

Note: The Unicenter NSM Module does not have any default module properties.

To enable the Unicenter NSM module

1. In the CA IT PAM Client, select File, Open Configuration Browser (if it is not already open).
2. On the left side of the window, right-click the desired component, and select Lock:
 - Domain (Browser palette)
 - Environment (Browser palette)
 - Orchestrator (Orchestrators palette)
 - Agent (Agents palette)
3. Click the Modules tab in the right pane of the window.
4. In the Status field in the right pane, verify that the Unicenter NSM Module is enabled. If the module is disabled, enable it.
5. Right-click the component you locked in Step 2, and select Unlock to unlock it.

Chapter 3: Using the Unicenter NSM Module

The Unicenter NSM Module has the following Operators that allow integration of the Unicenter NSM event management module with CA IT PAM:

- Create Event Operator
- Get Event Operator
- Get Event List Operator

This section contains the following topics:

[Create Event Operator](#) (see page 13)

[Get Event Operator](#) (see page 17)

[Get Event List Operator](#) (see page 19)

Create Event Operator

The Create Event Operator creates an event in Unicenter NSM.



Operator Input Parameters

Target Node

Specifies the Target node where you want to send the message. This parameter is mandatory.

Note: If you provide an invalid target node for an instance where the Unicenter NSM module is installed on a Linux platform, the operation will be successful but the event will not be created.

Message Number

Specifies the number that corresponds to the message mnemonic that identifies the message within the facility.

Color

Specifies the color for the event. Options include:

- DEFAULT
- RED
- ORANGE
- YELLOW
- GREEN
- BLUE
- PINK
- PURPLE

Attribute

Specifies the event attribute so that you can specify how event text should appear when it is displayed and viewed on the Unicenter NSM Event Management Console. Options include:

- DEFAULT
- BLINK
- Reverse

Event Type

Specifies the event type. Options include:

- Message
- WTOR (Write to operator with reply). An event of type WTOR will be placed in the held messages area in EM GUI until these events are acknowledged
- COMMAND
- REPLY

Severity

Specifies the message severity level. Options include:

- Error (E)
- Warning (W)
- Information (I)
- Successful (S)
- Failure (F)

Message Text

Specifies the message text. This parameter is mandatory.

Node

Specifies the domain or the node ID responsible for the message.

User

Specifies the domain or the user ID responsible for the message.

Category

Specifies the category for the event.

Source

Specifies the name of the resource that has generated the message.

Workstation

Specifies the workstation associated with the message.

Binary Data Section

Specifies the section for the binary data.

SNMP Device

Specifies the device message that is associated with SNMP.

User data

Specifies a space for the user to enter information useful for identifying the events.

Tag

Specifies the OS name. For example, events generated on Windows will have a value of WNT.

Operator Flags

The following flags are available:

Keep

Put message in held messages area.

Highlight

Highlight message.

Store and Forward

Message was forwarded by SAF.

Print WTOR ID to STDOUT

Print the WTOR ID to STDOUT.

Event is not candidate for matching and actions

Directs the Unicenter NSM Event Manager to not consider this message for any message record matching actions.

Invisible

Marks event as invisible.

NT Only

Event source is Windows NT only.

AEC Event

Message was created by Advanced Event Correlation (AEC).

Put WTOR messages in held messages

Puts WTOR in held messages.

MOM Event

Message was created by the Microsoft Operations Manager.

Windows binary data

Message has Windows binary data.

TANDEM binary data

Message has TANDEM binary data.

Message has been processed by AEC

Message has been processed by AEC.

Delete recursively all matched held message

Flag indicates that any event in held message area matching this event with this flag should be deleted.

UNIX binary data

Message has UNIX binary data.

Operator Outputs

Operation Results

Specifies the operation results by Unicenter NSM after creating the event.

Operator Ports

Success

Indicates that the Operator executed successfully.

Failure

Indicates that the Operator execution failed.

Get Event Operator

The Get Event Operator gets a Unicenter NSM event based on a record ID.



Note: In Linux, the Record ID of an event is not constant therefore Get Event Operator is not applicable on Linux.

Operator Input Parameters

Record ID

Specifies the record ID or entry number assigned to each incoming message by Unicenter NSM Event Manager. This parameter is mandatory.

Note: Each incoming message is considered a record and a record ID is assigned to it.

In Windows, you can obtain the record ID of an event by opening the Unicenter NSM Event Management Console and double-clicking the event from the console window.

You cannot retrieve the record ID using the Create Event Operator you can either retrieve it manually from the Unicenter NSM Event Management Console or by using the Get Event List Operator.

To open the Unicenter NSM Event Management Console using the Windows GUI

1. On the computer where Unicenter NSM is installed, click Start, Programs, CA, Unicenter NSM, Enterprise Management, EM Classic.
2. The EM Classic window opens.
3. Select the operating system.
4. Double-click the Event icon in the new window.
5. Double-click the Console Logs icon to open the Unicenter NSM Event Management Console.

To open the Unicenter NSM Event Management Console using the command prompt, enter "caugui conlog" at the command prompt on the computer where Unicenter NSM is installed.

Host Name

Specifies the server running Unicenter NSM Event Manager.

Note: If the Host name is not provided, the Operator assumes Touchpoint (in Execution Settings) as the default host name.

Date

Specifies the date when the event was created in the *MM/DD/YYYY* format. This parameter is mandatory.

Operator Outputs

EventObject

Specifies an event containing the event information.

Operator Ports

Success

Indicates that the Operator executed successfully.

Failure

Indicates that the Operator execution failed.

Get Event List Operator

The Get Event List Operator gets a Unicenter NSM event based on user query.



Operator Input Parameters

Host Name

Specifies the server running Unicenter NSM Event Management.

Note: If you do not provide the Host name, the Operator assumes Touchpoint (in Execution Settings) as the default host name.

Date

Specifies the date when the event was created, in *MM/DD/YYYY* format. This parameter is mandatory.

Color

Specifies the color for the event. Options include:

- DEFAULT
- RED
- ORANGE
- YELLOW
- GREEN
- BLUE
- PINK
- PURPLE

Attribute

Specifies the attribute for the event, so that you can set how the event text should appear when it is displayed and viewed on the Unicenter NSM Event Management Console. Options include:

- DEFAULT
- BLINK
- Reverse

Start Range of Time Record Written (HH:mm:ss)

Specifies the start range of the time the record was written in *HH:mm:ss* format.

End Range of Time Record Written (HH:mm:ss)

Specifies the end range of the time the record was written in *HH:mm:ss* format.

Event Type

Specifies the event type. Options include:

- Message
- WTOR (Write to operator with reply). An event of type WTOR will be placed in the held messages area in EM GUI until these events are acknowledged.
- COMMAND
- REPLY

Has Annotation

Checks to see whether a message has an annotation.

Start Range of Time Message Was Generated (HH:mm:ss)

Specifies the start range of the time when the message was generated, in the *HH:mm:ss* format.

End Range of Time Message Was Generated (HH:mm:ss)

Specifies the end range of the time when the message was generated, in the *HH:mm:ss* format.

Message Number

Specifies the number corresponding to the message mnemonic, identifying the message within the facility.

Message Text

Specifies the message text.

Severity

Specifies the message severity level. Options include:

- Error (E)
- Warning (W)
- Information (I)
- Successful (S)
- Failure (F)

Node

Specifies the Domain/Node ID responsible for the message.

User

Specifies the Domain/User ID responsible for the message.

Workstation

Specifies the Workstation associated with the message.

SNMP Device

Specifies the SNMP device associated with the message.

Process

Specifies the information related to the process generating the event, such as Process ID and Process Name.

User Data

Specifies user-generated information used to identify events.

Category

Specifies the event category that you set.

Source

Specifies the name of the resource generating the message.

Tag

Specifies the OS name. For example, events generated on Windows have a value of WNT.

Operator Flags

The following flags are available:

Keep

Put message in the held messages area.

Highlight

Highlight the message.

AEC Event

Message was created by Advanced Event Correlation (AEC).

MOM Event

Message was created by the Microsoft Operations Manager (MOM).

Windows Binary Data

Message has Windows binary data.

TANDEM Binary Data

Message has TANDEM binary data.

Operator Outputs

EventObjectArray

Specifies an array of event object containing the data. If the execution of this operator returns more than 128 records, the data is truncated to 128 records.

Operator Ports

Success

Indicates that the Operator executed successfully.

Failure

Indicates that the Operator execution failed.

Chapter 4: Troubleshooting

This chapter provides troubleshooting information for the Unicenter NSM Module.

This section contains the following topics:

[A Unicenter NSM Module Operator Fails During Process Execution](#) (see page 23)

[Message Could Not be Posted to the Node](#) (see page 26)

[Event Manager Not Active on Node](#) (see page 26)

[Requested Entity Not Found](#) (see page 26)

[Invalid Parameter\(s\)](#) (see page 27)

[Unreachable](#) (see page 27)

A Unicenter NSM Module Operator Fails During Process Execution

Valid On Windows

Symptom:

A Unicenter NSM Module Operator fails during execution of a process.

Solution: 1

Ensure that the CA IT PAM server service is running.

To check the service

1. Open the Start menu, and click Programs, Control Panel, Administrative Tools, Services.
2. Right-click the service. If the service is stopped, restart the service.

Note: After you reboot your computer, you may need to restart the service.

Solution: 2

Ensure that the Unicenter NSM application is running.

To check the application

1. Open the Start menu, and click Programs, Control Panel, Administrative Tools, Services.
2. Right-click the service. If the service is stopped, restart the service.

Note: After you reboot your computer, you may need to restart the service.

Solution: 3

- Ensure that CA IT PAM is installed correctly and that you have the appropriate access rights.
- Ensure that you have privileges to run the CA IT PAM Orchestrator and Agents.

For more information about installation and configuration, see the *CA IT PAM Installation and Configuration Guide*.

1. Ensure that the CA IT PAM database system is running properly.
2. Open a command prompt window and run the sqlcmd command. Use the following parameters when the CA IT PAM database is installed on a Microsoft SQL Server database system:

```
sqlcmd -S <machine name> -U <itpamuser> -P <itpampwd> -d itpam
```

where *<itpamuser>* and *<itpampwd>* are the CA IT PAM database user and password.

Note: For other CA IT PAM supported databases types, run the appropriate command:

- For an Oracle database, use SQL Plus to test the connection to the database from a command prompt:

```
sqlplus <username>[/<password>] @connect_identifier
```

where @connect_identifier is an Oracle NetConnect identifier. The computer information where Oracle is installed is contained in the @connect_identifier: the exact syntax depends on the Oracle Net communications protocol used by your Oracle installation. For more information about the Oracle database, see the Oracle documentation appropriate for your protocol or contact your database administrator.

- For a MySQL Server database, test the database connection from a command prompt:
mysql -h<hostname> -u<username> -p<password>
 - After connecting successfully to the CA IT PAM database, run a SQL query, for example:
Select * from SOAPClientCall
go

If you can connect to the CA IT PAM database, and the previous statements execute successfully, then the database system is running properly. Otherwise, check the database login user name and password and retry. If the database login user name and password are correct, then there may be an issue with the database system.

Change the logging level for Orchestrators and Agents to WARNING or INFO to obtain more information about the error. Debug the Orchestrator issues using c2o.log and boot.log in this location:

<server_install_path>\server\c2o\log.

- boot.log contains all messages logged by core components (for example, JBoss) before CA IT PAM starts execution.
- c2o.log contains all messages logged by all components after CA IT PAM starts execution.

Use the main log file (c2o.log) containing messages from all the components to debug Agent issues. The c2o.log is located here: <agent_install_path>\log. To obtain more information logs, do the following:

- Change the default logging level for Agent in the log4j.xml file located here:

<agent_install_path>\.c2orepository\.c2oagentresources\properties.

FILE and CONSOLE are the logging categories and are set by default to level ERROR. For more information about a category, do the following:

1. Change the "threshold" parameter for the required category and change the level from ERROR to WARN, or INFO.
2. Change the "root" category to include the required categories and set the log level to the lowest level specified in any category.
3. Change the default logging level for Orchestrator in the log4j.xml file located here: <orchestrator_install_path>\server\c2o\conf.

Similarly, you can change the Agent logging server, C2OFILE, and CONSOLE logging categories to obtain additional log information.

Solution: 4

Check the Execution Settings and specify a valid Touchpoint in the Target section.

Message Could Not be Posted to the Node

Symptom:

Execution of a Unicenter NSM Operator fails with the following error message: "Message could not be posted to the node."

Solution:

This error message appears when the Touchpoint (Orchestrator or Agent) specified in the "Execution Settings" of the connector palette is not running. Restart the CA IT PAM Orchestrator or Agent where you want to execute this Operator.

Event Manager Not Active on Node

Symptom:

Execution of an Operator fails with the following error message "Event Manager not active on node."

Solution:

This error message appears when the Unicenter NSM Event Manager is not running on the specified node. Ensure that the Unicenter NSM Event Manager is running; if it is not, restart it.

Requested Entity Not Found

Symptom:

Execution of a Unicenter NSM Operator fails with the following error message "Requested Entity not found."

Solution:

This error message appears when the Unicenter NSM Event Manager is not able to find the record with the specified record ID. Ensure that the Unicenter NSM Event Manager is running; if it is not, restart it.

Invalid Parameter(s)

Symptom:

Execution of a Unicenter NSM Operator fails with the following error message: "Invalid parameter(s)."

Solution:

This error message appears when a Unicenter NSM Operator tries to execute with invalid input values. Verify that the input values are valid and try again.

Unreachable

Symptom:

Execution of a Unicenter NSM Operator fails with the following error message: "Unreachable".

Solution:

This error message appears when the target node is unreachable. Verify that the network connection is functioning and try again.

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