
hp Unified Correlation Analyzer



Unified Correlation Analyzer for Event Based Correlation

Version 3.2

TeMIP Integration Guide

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Preface

Since connecting UCA for EBC and TeMIP involves several components, the information to set up the connection is scattered across several documents.

The objective of this document is to provide readers with a centralized source of information to connect UCA for EBC and TeMIP.

Most of this information has been put directly in this document; the rest is given as pointers to other documents.

This guide contains the following parts

- Which products to install, which versions to install, how to install
- How to configure the needed products
- How to validate that the connection is set up properly
- How to tune the products
- How to troubleshoot the connection

The figure below shows the main components of the UCA for EBC <-> TeMIP connection:

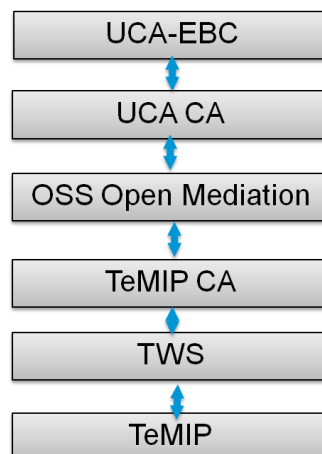


Figure 1 - The main components between UCA for EBC and TeMIP

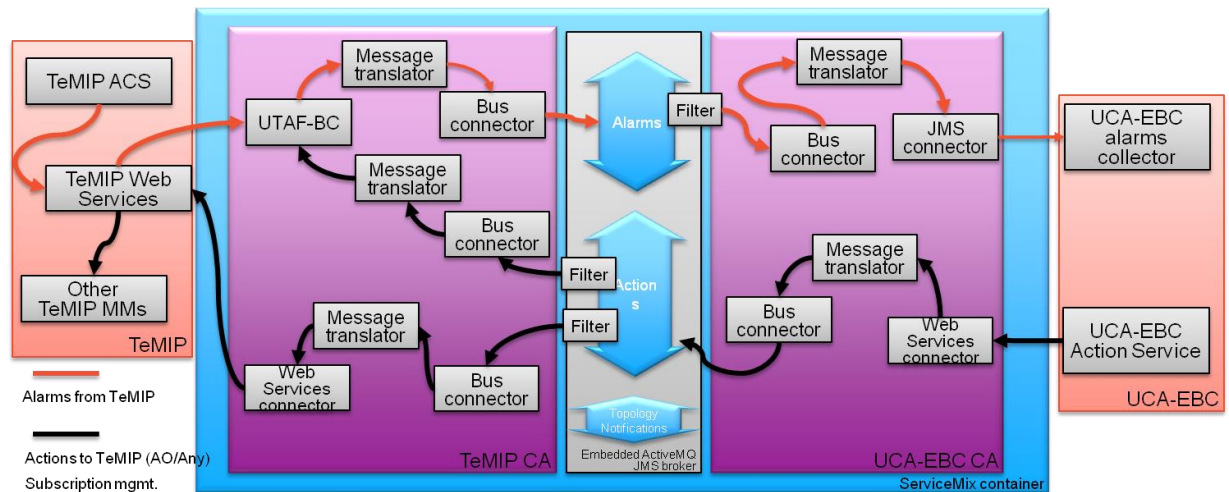


Figure 2 - The path of alarms and actions

Intended Audience

Anyone who needs to set up or repair a connection between UCA for EBC and TeMIP should be interested in this document.

Associated Documents

Although the ambition of this guide is to be comprehensive, below is a list of additional documents that might be of interest to you:

UCA for EBC documents

- HP UCA for EBC IM – TeMIP Client Guide
- HP UCA for EBC - Installation Guide (contains a chapter on how to install UCA for EBC Channel Adapter)
- HP UCA for EBC - Administration, Configuration, and Troubleshooting Guide
- HP UCA for EBC - Reference Guide
- HP UCA for EBC - User Interface Guide

OSS Open Mediation documents:

- OSS Open Mediation V710 Release Notes
- OSS Open Mediation Installation and Configuration Guide
- OSS Open Mediation Open Software And 3PP
- OSS Open Mediation V710 Development Guide
- OSS Open Mediation V710 Skeleton CA Archetype for UCA EBC Guide
- OSS Open Mediation V710 Functional Specification
- OSS Open Mediation TeMIP Channel Adapter V210 Installation and Configuration Guide

TeMIP documents:

- TeMIP Product and Technical Solutions Overview For Linux / HP-UX IA
- TeMIP Client Overview
- TeMIP Web Services Installation and Administration Guide
- TeMIP Installation Guide for Linux

References

[R1] UCA for Event Based Correlation Installation Guide

[R2] OSS Open Mediation V710 Installation and Configuration Guide

[R3] UCA for EBC Inference Machine User Guide

Convention

Throughout this document, we use the `${UCA_EBC_HOME}` environment variable to reference the root directory (“static” part) of UCA for EBC. The default value for the `${UCA_EBC_HOME}` environment variable is `/opt/UCA-EBC`. The `${UCA_EBC_HOME}` environment variable thus references the `/opt/UCA-EBC` directory unless UCA for EBC “static” part has been installed in an alternate directory.

We also use the `${UCA_EBC_DATA}` environment variable to reference the data directory (“variable” part) of UCA for EBC. The default value for the `${UCA_EBC_DATA}` environment variable is `/var/opt/UCA-EBC`. The `${UCA_EBC_DATA}` environment variable thus references the `/var/opt/UCA-EBC` directory unless UCA for EBC “variable” part has been installed in an alternate directory.

In this document, we will use `${UCA_EBC_INSTANCE}` for referring to the `${UCA_EBC_DATA}/instances/<instance-name>` directory. At installation time, a single `<instance-name>` is configured: `default`.

Chapter 1 Installation

This chapter explains what products, versions and patches to install and how to install them.

1.1 General considerations

In order to connect UCA for EBC to TeMIP, the following products need to be installed:

- UCA for EBC
- OSS Open Mediation, including:
 - UCA for EBC Channel Adapter for OSS Open Mediation
 - TeMIP Channel Adapter for OSS Open Mediation
- TeMIP
 - TWS (TeMIP Web Services)

Each of these products has its own versions. In order for the connection from UCA for EBC to TeMIP to work, these versions need to be compatible.

The compatibility matrix below summarizes the dependencies between the versions of the products needed to connect UCA for EBC to TeMIP:

UCA for EBC	OSS Open Mediation	UCA for EBC Channel Adapter	TeMIP Channel Adapter	TeMIP Framework*	TWS*
UCA for EBC V3.2	OSS Open Mediation V710	UCA for EBC Channel Adapter V3.2	TeMIP Channel Adapter V210	TeMIP V6.0 or V6.2 on HP-UX or TeMIP V6.1 or V6.2 on Linux*	TWS V710*
UCA for EBC V3.1	OSS Open Mediation V620 and V700	UCA for EBC Channel Adapter V3.1	TeMIP Channel Adapter V200	TeMIP V6.0 or V6.2 on HP-UX or TeMIP V6.1 or V6.2 on Linux*	TWS V710*
UCA for EBC V3.0	OSS Open Mediation V620	UCA for EBC Channel Adapter V3.0	TeMIP Channel Adapter V120/V121	TeMIP V6.0 on HP-UX or TeMIP V6.1 on Linux*	TWS V610*
UCA for EBC V2.0	OSS Open Mediation V610	UCA for EBC Channel Adapter V2.0	TeMIP Channel Adapter V110/V111	TeMIP V6.0 on HP-UX or TeMIP V6.1 on Linux*	TWS V610*

Table 1 - UCA for EBC to TeMIP connection compatibility matrix

This document only deals with the latest version of each of the products:

- UCA for EBC V3.2
- OSS Open Mediation V710, including:
 - UCA for EBC Channel Adapter V3.2 for OSS Open Mediation
 - TeMIP Channel Adapter V210 for OSS Open Mediation
- TeMIP V6.0 or V6.2 on HPUX or TeMIP V6.1 or V6.2 on Linux*
 - TWS V710*

Note

* Please refer to the “*Software prerequisites*” of the corresponding “*TeMIP Channel Adapter Installation and Configuration guide*” for complete details of TeMIP Framework, TeMIP Web Services and other TeMIP related software modules version and patch versions requirements.

1.2 UCA for EBC installation

The installation procedure described in this chapter is an abbreviated version of the full installation procedure described in the [R1] UCA for Event Based Correlation Installation Guide.

Kit

The UCA for EBC Server product is available on the following operating systems:

Product Version	Supported Operating systems
UCA for Event Based Correlation Server Version V3.2	<ul style="list-style-type: none">• HP-UX 11.31 for Itanium• Red Hat Enterprise Linux Server release 5.9 & 6.5

Table 2 - UCA for EBC supported operating systems

The UCA for EBC Server product is delivered as a tar file named:

`uca-ebc-server-kit-3.2-<os>.tar`

where `<os>` is either `linux` for **Linux** systems or `hpux` for **HP-UX** systems.

Java Dependencies

Java Version (1.7.0 minimum) is required to run UCA for EBC Server.

Pre-installation tasks

Before installing UCA for EBC Server on a system, you need to create a local "uca" user account on that system.

The local “uca” user account must have a `${HOME}` directory containing at least a `.login` or a `.profile` file.

Product installation

As root user, untar the `uca-ebc-server-kit-3.2-<os>.tar` archive in a temporary local directory (For example: `/tmp`)

Depending on whether you wish to install UCA for EBC Server at the default location, i.e. both the `/opt/UCA-EBC` and `/var/opt/UCA-EBC` directories, or an alternate location, run as **root** user either of the following commands to execute the installation script:

- Default locations:
`install-uca-ebc.sh`
- Specific locations:
`install-uca-ebc.sh -r <root directory> -d <data directory>`

Multiple instances of UCA for EBC Server can be configured in the data directory.

Post-installation setup

Several environment variables must be defined in the “uca” user’s environment for UCA for EBC to work properly.

The `JAVA_HOME` environment variable is recommended to be set before using UCA for EBC software.

The UCA for EBC installation script installs two files in the UCA for EBC HOME directory (`/opt/UCA-EBC` by default):

- `${UCA_EBC_HOME}/.environment.sh`
- `${UCA_EBC_HOME}/.environment.csh`

One of these files should be sourced, depending on uca’s shell, for setting the correct environment variables.

Licensing

After installation, UCA for EBC will activate a trial license for 90 days (Instant-On license) that activates all features of the product for a trial period. After expiration of this trial period, a commercial license is needed to continue to use the product.

If you need to install a commercial UCA for EBC license key(s), you will need to copy this(these) license key(s) to the `license.txt` file located in the `${UCA_EBC_DATA}/instances/<instance name>/licenses` folder (by default `/var/opt/UCA-EBC/instances/default/licenses`).

Note

 For additional details of the UCA for EBC Server installation instructions, please refer to: [R1] *UCA for Event Based Correlation Installation Guide*.

1.3 OSS Open Mediation + Channel Adapters installation

The installation procedure described in this chapter is an abbreviated version of the full installation procedure described in the [R2] OSS Open Mediation V710 Installation and Configuration Guide.

1.3.1 OSS Open Mediation V710 installation

OSS Open Mediation V710 provides a fault management mediation solution for OSS products. It allows multiple OSS products to exchange messages over a common bus, in a common format by using common communication patterns thereby enabling a seamless integration. OSS Open Mediation V710 provides the following features:

- Ability to integrate multiple different OSS systems (HP and non-HP third party)
- Defines common communication patterns for Alarm flow, Action Invocation, Topology change notification
- Provides standard way for channel adapters to attach to the common bus both to produce and consume messages
- Provides numerous connectivity features such as:
 - Web Services: SOAP/HTML, SOAP/JMS, HTML/REST
 - Files: Local file access, FTP/FTPS, SFTP
 - Database: JDBC
 - Enterprise Java: JMS, JMX, RMI
 - Others: TCP/UDP, HTTP/HTTPS, IRC, LDAP, SMTP/POP3/IMAP, RSS, SMPP, SNMP, XMPP and via custom connectors
- Scalable – Supports distributing solution over multiple hosts

Kit

The OSS Open Mediation V710 product is available on the following operating systems:

Product Version	Supported Operating systems
OSS Open Mediation V710	<ul style="list-style-type: none">• HP-UX B.11.31• Red Hat Enterprise Linux Server release 5.4, 5.6, 5.8, 6.2 or 6.4

Table 3 - OSS Open Mediation V710 supported operating systems

The OSS Open Mediation V710 product is delivered as a tar file named:

`openmediation-7.1.0-<os>.tar`

where `<os>` is either `L` for **Linux** systems or `I` for **HP-UX** systems.

The tar file contains the following files:

File	Description
<ul style="list-style-type: none"> On Linux: ngossopenmediation-7.1.0.noarch.rpm On HP-UX: NGOSSOPENMEDIATION710.depot 	OSS Open Mediation
openmediation_install_kits.sh	Script that performs product kits installation
openmediation_setup.sh	Script that performs product setup
openmediation_unsetup.sh	Script that performs product unsetup
openmediation_remove_kits.sh	Script that performs product kits removal

Table 4 - OSS Open Mediation V710 tar file content

The OSS Open Mediation V710 product requires (besides the temporary disk space needed for the tar file and its expanded contents) 1024MB minimum of permanent disk space in OSS Open Mediation root installation directory (by default */opt/openmediation-71*) and 2048MB minimum of permanent disk space in OSS Open Mediation root variable files directory (by default */var/opt/openmediation-71*) on the system.

Java Dependencies

Java Version (1.7.0 minimum) is required to run OSS Open Mediation V710.

Pre-requisites

OSS Open Mediation V710 has the following hardware and software pre-requisites:

CPU Architecture	Number of CPUs	Number of CPU cores	Memory
IA64	Minimum: 2 Recommended: 4	N/A	Minimum: 8 GB Recommended: 16 GB
X86-64	2 CPUs	Minimum: 4 Recommended: 6	Minimum: 8 GB Recommended: 16 GB

Table 5 - OSS Open Mediation V710 hardware pre-requisites

Additionally, the following kernel parameter values shall be set:

OS	Kernel configuration parameter	Value	Description
Linux	open files	8000 or greater	Maximum number of open file descriptors
HP-UX	Maxfiles	8000 or greater	Soft File Limit Per Process
HP-UX	maxfiles_lim	8000 or greater	Hard File Limit Per Process

Table 6 - OSS Open Mediation V710 kernel parameters pre-requisites

Pre-installation tasks

The `${JAVA_HOME}` environment variable shall be set to the value of the correct path to the Java Development Kit (JDK) installation directory.

Product installation

As root user, untar the `openmediation-7.1.0-<os>.tar` archive in a temporary local directory (For example: `/tmp`)

To install the product kits, please run the following script as **root** user and follow instructions:

```
$ ./openmediation_install_kits.sh

> ./openmediation_install_kits.sh
The following kits are found in current directory and will be installed:
Open Mediation Base - ngossopenmediation-7.0.0.noarch.rpm
Is this correct? (yes/no, default is yes):

Enter NOM installation directory (default is /opt):

Installing ngossopenmediation-7.0.0.noarch.rpm in /opt
Finished installing kits for Open Mediation in /opt
Please perform setup by the user that will manage Open Mediation.
```

Figure 3 - OSS Open Mediation V710 installation typical output

After the OSS Open Mediation V710 packages are installed, it is necessary to set them up.

To setup the product packages, please run the following script **as the same user that will run Administration tool (named `nom_admin`) later on** and follow instructions:

```
$ ./openmediation_setup.sh

> ./openmediation_setup.sh
This script should be run by the same user that will later run administration tool for Open Mediation.
Do you want to continue? (yes/no, default is yes):

Enter NOM installation directory (default is /opt):

Enter NOM variable files directory (default is /var/opt):

Setting up NOM
INFO: Open Mediation was successfully installed
Installing smx-basic-components globally
Installation package has been installed.

Installing nom-basic-smx-components globally
Installation package has been installed.

Installing smx-extra-components globally
Installation package has been installed.

Installing nom-sdk globally
Installation package has been installed.

Creating and starting container instance with number "0" and name "Hub"
Container has been created
Container instance number 0 has been STARTED.

Installing smx-basic-components in container instance
Installation package has been successfully installed in container instance

Deploying smx-basic-components in container instance
Specified installation package does not contain any service assemblies
Installation package has been successfully deployed in container instance

Installing nom-basic-smx-components in container instance
Installation package has been successfully installed in container instance

Deploying nom-basic-smx-components in container instance
Specified installation package does not contain any service assemblies
Installation package has been successfully deployed in container instance


Finished setting up Open Mediation.
Please note that administration should be performed by the same user that performed setup.
```

Figure 4 - OSS Open Mediation V710 setup typical output

Licensing

OSS Open Mediation V710 is a license-free product.

Note

 For additional details of the OSS Open Mediation V710 installation instructions, please refer to: [R2] *OSS Open Mediation V710 Installation and Configuration Guide*.

1.3.2 TeMIP Channel Adapter V210 installation

TeMIP CA V210 is a channel adapter for OSS Open Mediation V710 that allows integration with TeMIP. It provides the following features:

- Sending alarms to TeMIP
- Processing resynchronization requests from TeMIP
- Processing acknowledgment requests from TeMIP
- Collecting Alarm Object notifications from TeMIP
- Alarm Object notifications flow management
- Sending Alarm Object directives to TeMIP
- Sending of directives to any TeMIP class in pass-through mode

Kit

The TeMIP Channel Adapter V210 product is available on the following operating systems:

Product Version	Supported Operating systems
TeMIP Channel Adapter V210	<ul style="list-style-type: none">• HP-UX B.11.31 (NGOSSTEMIPCA210)• Red Hat Enterprise Linux Server release 5.4, 5.6, 5.8, 6.2 or 6.4 (ngosstemip-ca-2.1.0)

Table 7 - TeMIP Channel Adapter V210 supported operating systems

The TeMIP Channel Adapter V210 product is delivered as a tar file named:
temip-ca-2.1.0-<os>.tar

where *<os>* is either *L* for **Linux** systems or *I* for **HP-UX** systems.

The tar file contains the following files:

File	Description
<ul style="list-style-type: none"> On Linux: ngosstemip-ca-2.1.0.noarch.rpm On HP-UX: NGOSSTEMIPCA210.depot 	TeMIP Channel Adapter V210
temip_ca_install_kits.sh	Script that performs product kits installation
temip_ca_setup.sh	Script that performs product setup
temip_ca_unsetup.sh	Script that performs product unsetup
temip_ca_remove_kits.sh	Script that performs product kits removal

Table 8 - TeMIP Channel Adapter V210 tar file content

The TeMIP Channel Adapter V210 product requires (besides the temporary disk space needed for the tar file and its expanded contents) 1024MB minimum of permanent disk space in OSS Open Mediation root installation directory (by default `/opt/openmediation-71`) and 2048MB minimum of permanent disk space in OSS Open Mediation root variable files directory (by default `/var/opt/openmediation-71`) on the system.

Java Dependencies

TeMIP Channel Adapter V210 just like OSS Open Mediation and requires Java 1.7.

Pre-requisites

TeMIP Channel Adapter V210 has the same hardware prerequisites as OSS Open Mediation V710. For more information, please go to chapter: 1.3.1 “OSS Open Mediation V710 installation”.

In addition to hardware prerequisites, TeMIP Channel Adapter V210 also has software prerequisites:

Name	Version
OSS Open Mediation	V710
TeMIP	For more information on the TeMIP pre-requisites, please go to chapter: 1.4 “TeMIP + TWS installation”

Table 9 - TeMIP Channel Adapter V210 software pre-requisites

Pre-installation tasks

The `${JAVA_HOME}` environment variable shall be set to the value of the correct path to the Java Development Kit (JDK) installation directory.

Product installation

As root user, untar the `temip-ca-2.1.0-<os>.tar` archive in a temporary local directory (For example: `/tmp`)

To install the product kits, please run the following script as **root** user and follow instructions:

```

$ ./temip_ca_install_kits.sh

> ./temip_ca_install_kits.sh
The following kits are found in current directory and will be installed:
TeMIP CA Base - ngosstemip-ca-2.0.0.noarch.rpm
Is this correct? (yes/no, default is yes):

Enter NOM installation directory (default is /opt):

Installing ngosstemip-ca-2.0.0.noarch.rpm in /opt
Finished installing kits for TeMIP CA in /opt
Please perform setup by the user that will manage TeMIP CA.

```

Figure 5 - TeMIP Channel Adapter V210 installation typical output

After the TeMIP Channel Adapter V210 packages are installed, it is necessary to set them up.

To setup the product packages, please run the following script **as the same user that will run Administration tool (named *nom_admin*) later on, i.e. the same user that you used to setup OSS Open Mediation V710**, and follow instructions:

```

$ ./temip_ca_setup.sh

> ./temip_ca_setup.sh
This script should be run by the same user that will later run administration tool for Open Mediation.
Do you want to continue? (yes/no, default is yes):

Enter NOM installation directory (default is /opt):

Enter NOM variable files directory (default is /var/opt):

Enter local TeMIP Name, for example .temip.myhost_temip
To get local TeMIP Name please execute under root or the director user ID on the machine where TeMIP is installed
the following command: manage show temip "*"
.temip.mytemip_temip
Installing temip-ca-20 globally
Installation package has been installed.

Installing temip-ca-sdk-20 globally
Installation package has been installed.

Installing temip-ca-20 in container instance
Installation package has been successfully installed in container instance

Deploying temip-ca-20 in container instance
Installation package has been successfully deployed in container instance

Finished setting up TeMIP CA.
Please note that administration should be performed by the same user that performed setup.

```

Figure 6 - TeMIP Channel Adapter V210 setup typical output

Licensing

TeMIP Channel Adapter V210 is a license-free product.

1.3.3 UCA for EBC V3.2 Channel Adapter installation

Kit

The UCA for EBC V3.2 Channel Adapter product is available on the following operating systems:

Product Version	Supported Operating systems
-----------------	-----------------------------

UCA for EBC Channel Adapter V3.2	<ul style="list-style-type: none"> • HP-UX 11.31 for Itanium • Red Hat Enterprise Linux Server release 5.9 & 6.5
----------------------------------	--

Table 10 - UCA for EBC V3.2 Channel Adapter supported operating systems

The UCA for EBC V3.2 Channel Adapter product is delivered as a tar file named:

uca-ebc-ca-kit-3.2-<os>.tar

where *<os>* is either *linux* for **Linux** systems or *hpux* for **HP-UX** systems.

The tar file contains the following files:

File	Description
<ul style="list-style-type: none"> • On Linux: UCA-EBCCA-V3.2-00A.noarch.rpm • On HP-UX: UCAEBCCAV3200A.depot 	UCA for EBC Channel Adapter V3.2
install-uca-ebc-ca.sh	Script that performs product kits installation

Table 11 - UCA for EBC V3.2 Channel Adapter tar file content

Java Dependencies

UCA for EBC V3.2 Channel Adapter just like OSS Open Mediation requires Java 1.7.

Pre-requisites

UCA for EBC V3.2 Channel Adapter has the same hardware prerequisites as OSS Open Mediation V710. For more information, please go to chapter: 1.3.1 "OSS Open Mediation V710 installation".

In addition to hardware prerequisites, UCA for EBC V3.2 Channel Adapter also has software prerequisites:

Name	Version
OSS Open Mediation	V710
UCA for EBC	V3.2

Table 12 - UCA for EBC V3.2 Channel Adapter software pre-requisites

Pre-installation tasks

The `${JAVA_HOME}` environment variable shall be set to the value of the correct path to the Java Development Kit (JDK) installation directory.

Product installation

As root user, untar the *uca-ebc-ca-kit-3.2-<os>.tar* archive in a temporary local directory (For example: `/tmp`)

To install the product kits, please run the following script as **root** user:

```
$ ./install-uca-ebc-ca.sh -o <OSS Open Mediation root
directory> [-r <UCA for EBC Channel Adapter installation
directory>]
```

The *< OSS Open Mediation root directory>* parameter value represents the absolute path of the Installation Root directory of the OSS Open Mediation product (by default the */opt/openmediation-71 directory*).

The *< UCA for EBC Channel Adapter installation directory >* parameter value represents the absolute path of the UCA for EBC Channel Adapter installation directory (by default the standard UCA for EBC root directory: */opt/UCA-EBC*).

```
> ./install-uca-ebc-ca.sh -o /opt/openmediation-70
-----

          Installation of HP Unified Correlation Analyzer
                    For
          Event Based Correlation

-----

*****
*
* The following UCA components will be installed on the system:
*       UCA EBC Channel Adapter
*
*****

- Installing UCA EBC Channel Adapter package...
Preparing... ##### [100%]
1:UCA-EBCCA ##### [100%]
```

Figure 7 - UCA for EBC V3.2 Channel Adapter installation typical output

After the UCA for EBC V3.2 Channel Adapter package is installed, it is necessary to set it up.

To setup the product package, please run the following script **as the same user that will run Administration tool (named *nom_admin*) later on, i.e. the same user that you used to setup OSS OpenMediation V710**, and follow instructions:

```
$ cd /opt/openmediation-71/bin/
$ ./nom_admin --install-ip uca-ebc-ca-3.2
$ ./nom_admin --install-ip-in-container 0 uca-ebc-ca-3.2
$ # Edit uca-ebc-ca.properties file if necessary
$ vi /var/opt/openmediation-71/containers/instance-
0/ips/uca-ebc-ca-3.2/etc/uca-ebc-ca.properties
$ ./nom_admin --deploy-ip-in-container 0 uca-ebc-ca-3.2
```

```

> nom_admin --list-ip
INSTALLED      nom-basic-smx-components
INSTALLED      nom-sdk
INSTALLED      smx-basic-components
INSTALLED      smx-extra-components
INSTALLED      temip-ca-20
INSTALLED      temip-ca-sdk-20
NOT INSTALLED  uca-ebc-ca-3.1
> nom_admin --install-ip uca-ebc-ca-3.1
Installation package has been installed.
> nom_admin --install-ip-in-container 0 uca-ebc-ca-3.1
Installation package has been successfully installed in container instance
> nom_admin --deploy-ip-in-container 0 uca-ebc-ca-3.1
Specified installation package does not contain any components
Installation package has been successfully deployed in container instance
> nom_admin --list-ip-in-container 0
DEPLOYED      nom-basic-smx-components
DEPLOYED      smx-basic-components
DEPLOYED      temip-ca-20
DEPLOYED      uca-ebc-ca-3.1

```

Figure 8 - UCA for EBC V3.2 Channel Adapter setup typical output

Licensing

No extra license is required to run the UCA for EBC V3.2 Channel Adapter.

1.4 TeMIP + TWS installation

As per TeMIP Channel Adapter V210 software prerequisites, the following TeMIP products/patches need to be installed.

The following TeMIP products/patches are required on HP-UX:

Name	Version
HP-UX	B.11.31
TeMIP Framework	V6.0I: TFRV600 Level 1 Revision H or superseding release with the following mandatory patches: <ul style="list-style-type: none"> • PHSS_43865 • PHSS_43346 • PHSS_43455 • PHSS_43782 • PHSS_43399 • PHSS_43263 • PHSS_41718 • PHSS_40069

	V6.2I: TFRV620 Level 1 Revision B or superseding release with the following mandatory patch: <ul style="list-style-type: none"> • PHSS_43758
TeMIP Third Party Products	TPPV600 Level 3 rev C or superseding release
TeMIP Web Services	TWSV610 Level 1 Revision C with the following mandatory patches: <ul style="list-style-type: none"> • PHSS_43776 • PHSS_43777
TeMIP Alarm Acknowledgement FM	ACK V530 Level 1 Revision A
TeMIP Resynchronization FM	For TeMIP V6.0I: RFM V520 Level 1 Revision G For TeMIP V6.2I: RFM V610 Level 2 Revision A

Figure 9 - TeMIP products/patches required on HPUX

The following TeMIP products/patches are required on Linux:

Name	Version
Red Hat Enterprise Linux Server	5.4, 5.6, 5.8, 6.2 or 6.4
TeMIP Framework	<p>For RHEL 5.4 and 5.6:</p> <p>V6.1L Manufacturing Release (TFR V61L Level 2 Revision E) or superseding release with the following mandatory patches:</p> <ul style="list-style-type: none"> • TEMIPTFRLIN-00116 • TEMIPTFRLIN-00117 • TEMIPTFRLIN-00118 • TEMIPTFRLIN-00119 • TEMIPTFRLIN-00127 • TEMIPTFRLIN-00139 • TEMIPTFRLIN-00156 • TEMIPTFRLIN-00162 • TEMIPTFRLIN-00167 <p>For RHEL 5.8:</p> <p>V6.1L Manufacturing Release (TFR V61L Level 2 Revision E) or superseding release with the following update installed:</p> <ul style="list-style-type: none"> • V6.1L Update Release 1 (TFR V61L Level 3 Patch 1 Revision B) • and the following mandatory patches: • TEMIPTFRLIN-00164 • TEMIPTFRLIN-00169 <p>For RHEL 5.8, 6.2 and 6.4:</p> <p>V6.2L Manufacturing Release (TFRV620 Level 1 Revision B) or superseding release with the following mandatory patch:</p> <ul style="list-style-type: none"> • TEMIPTFRLIN-00166
TeMIP Third Party Products	TPP V600 Level 3 rev E or superseding release
TeMIP Web Services	TWS V610 Level 1 Revision C with the following mandatory patches:
	<ul style="list-style-type: none"> • TEMIPTWSLIN-00013 • TEMIPTWSLIN-00016
TeMIP Alarm Acknowledgement FM	ACK V610 Level 1 Revision B
TeMIP Resynchronization FM	RFM V610 Level 1 Revision B

Figure 10 - TeMIP products/patches required on Linux

Chapter 2 Configuration

2.1 General Considerations

2.1.1 Deployment / Sizing

A dedicated server for correlation (UCA for EBC) is advised:

- For clarity
- Because TeMIP may not be the only Alarm source
- Correlation is CPU intensive and may compete with NMS (Network Management System) if on the same server.
- Minimum recommended server configuration is 3 CPU and 16Gb RAM

Duplicated NMS/BUS/Correlation stacks for better efficiency:

- Host 1: TeMIP Server + TeMIP Web Services (TWS)
- Host 2: OSS Open Mediation + UCA for EBC Server
- This combination may be repeated for more throughput

2.1.2 Distribution Capabilities

Software location:

- UCA for EBC Server and OSS Open Mediation Bus do not need to reside on the same server
- Channel Adapters are setup on the same host where OSS Open Mediation is setup

Distribution aspects:

- OSS Open Mediation supports multiple containers
- UCA for EBC supports multiple instances
- Instances of UCA for EBC Server may be setup on several systems
- OSS Open Mediation Bus may be distributed across several systems.

Restrictions:

- Only one UCA for EBC Channel Adapter per OSS Open Mediation Container
- Only one TeMIP CA per OSS Open Mediation Container

2.1.3 Distribution Examples

The standard recommended configuration has UCA for EBC and OSS Open Mediation sitting on one server and TeMIP sitting on another server.

This configuration is the only one addressed in this guide (whether UCA for EBC, OSS Open Mediation, and TeMIP are on separate hosts or not).

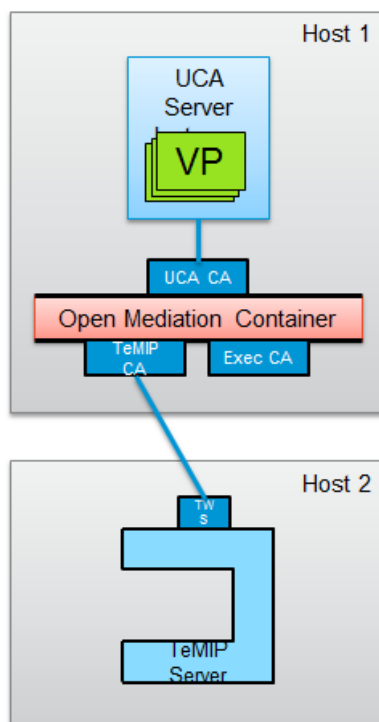


Figure 11 - Standard recommended configuration

Other configurations are possible, but require additional steps to be configured. These are not covered in this version of the document. However, examples of such configurations are provided below for information.

The “simple multiple UCA for EBC instances” configuration has 2 instances of UCA for EBC sitting on one server, each instance being connected to an UCA for EBC Channel Adapter on a separate OSS Open Mediation container, and TeMIP sitting on another server.

There is only 1 TeMIP Channel Adapters connected to a single TeMIP director.

The 2 OSS Open Mediation containers are not connected.

This configuration is appropriate if both UCA for EBC instances want to connect to the same TeMIP director.

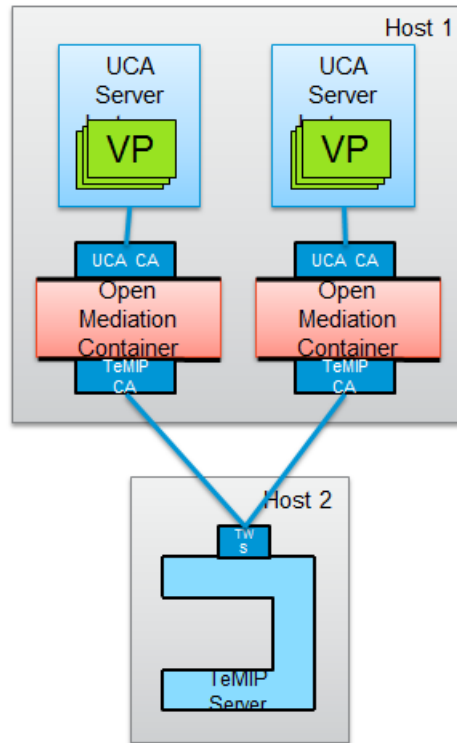


Figure 12 - “Simple multiple UCA for EBC instances” configuration

The “complex multiple UCA for EBC instances” configuration has 2 instances of UCA for EBC sitting on one server, each instance being connected to an UCA for EBC Channel Adapter on a separate OSS Open Mediation container, and 2 TeMIP directors sitting on another server.

There are 2 separate TeMIP Channel Adapters, one for serving each TeMIP director.

The 2 OSS Open Mediation containers are not connected.

This configuration is appropriate if both UCA for EBC instances want to connect to separate TeMIP directors.

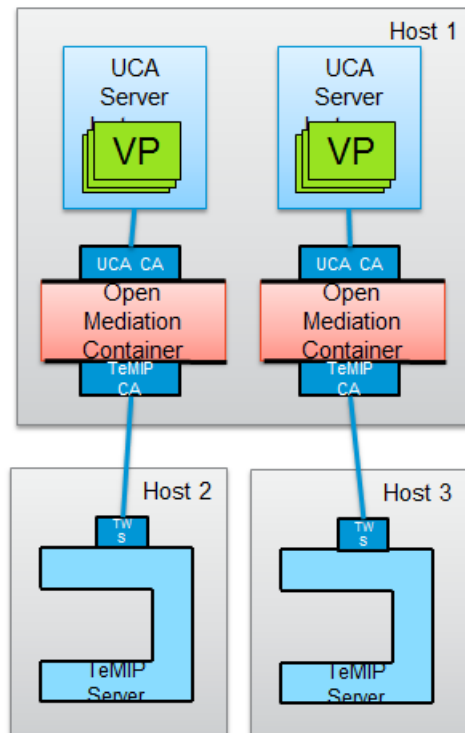


Figure 13 - “Complex multiple UCA for EBC instances” configuration

The fully distributed configuration with single UCA for EBC instance has 1 instance of UCA for EBC sitting on one server, connected to an OSS Open Mediation container through a single UCA for EBC Channel Adapter.

There are N OSS Open Mediation containers, each connected to the others through distribution of the OSS Open Mediation bus. Each OSS Open Mediation container has its own TeMIP Channel Adapter for connecting to a separate TeMIP director.

This configuration requires advanced configuration of UCA for EBC and OSS Open Mediation.

This configuration is appropriate if UCA for EBC wants to connect to N TeMIP directors.

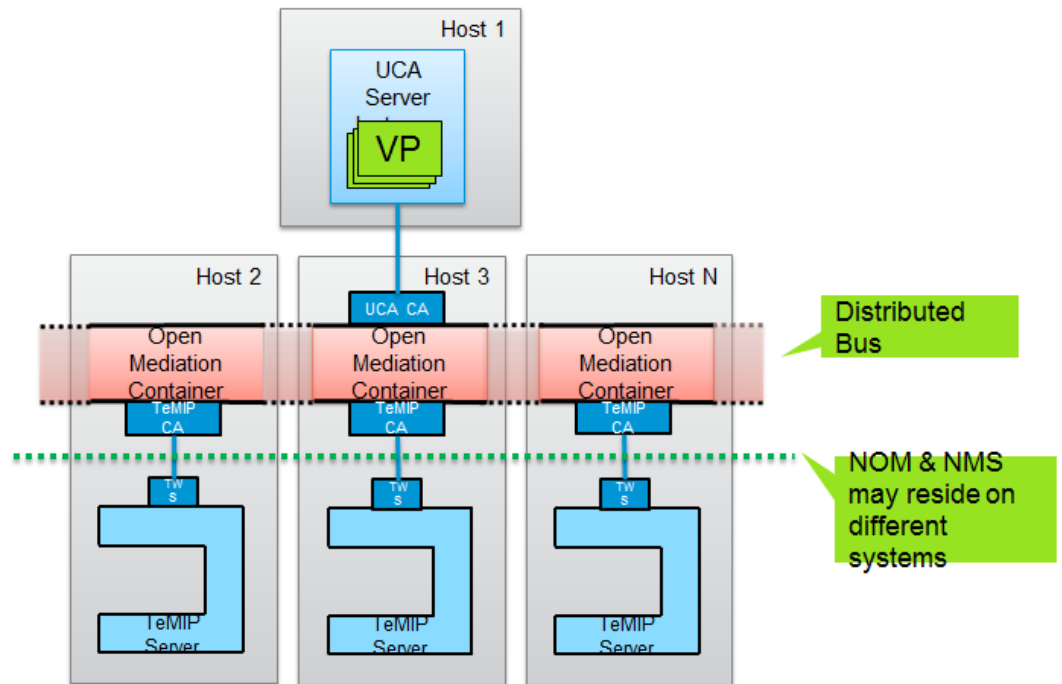


Figure 14 - Fully distributed configuration with single UCA for EBC instance

2.2 Mandatory configuration parameters

2.2.1 UCA for EBC Server

2.2.1.1 ActionRegistry.xml

The *ActionRegistry.xml* file located in the */var/opt/UCA-EBC/instances/default/conf* folder contains information on how UCA for EBC Value Packs connect to OSS Open Mediation.

The information in this file is used by UCA for EBC so that value packs can send actions to OSS Open Mediation Channel Adapters, in our case the TeMIP Channel Adapter.

This file must be properly configured to reflect the host name and port numbers used by OSS Open Mediation.

Each *<MediationValuePack>...</MediationValuePack>* section configures how to access to a specific Channel Adapter. In our case, we need to correctly configure the *<MediationValuePack>...</MediationValuePack>* section that connects to the TeMIP Channel Adapter. In the screenshot below, the "MediationValuePack" to configure is the one with attribute *MvpName="temip"*.

The *url* and *brokerURL* attributes need to be set so that they connect to the TeMIP Channel Adapter:

- *url="http://localhost:26700/uca/mediation/action/ActionService?WSDL"*
- *brokerURL="failover://tcp//localhost:10000"*

In the `url` and `brokerURL` attributes, the `localhost` placeholder must be set to the host name of the OSS Open Mediation server.

In the `url` attribute, the `26700` placeholder must be set to the port number of the Action Service of the UCA for EBC Channel Adapter. This port is set by the `action-service.port` property in the `uca-ebc-ca.properties` file of the UCA for EBC Channel Adapter, located in the `/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/etc` folder.

In the `brokerURL` attribute, the `10000` placeholder must be set to the port number of the ActiveMQ Broker of the OSS Open Mediation container. This port is set by the `activemq.port` property in the `servicemix.properties` file of the OSS Open Mediation container, located in the `/var/opt/openmediation-71/containers/instance-0/conf` folder.

```
1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2 <ActionRegistryXML xmlns="http://registry.action.mediation.uca.hp.com/">
3
4   <MediationValuePack MvpName="temip" MvpVersion="1.1"
5     url="http://localhost:26700/uca/mediation/action/ActionService?WSDL"
6     brokerURL="failover://tcp://localhost:10000">
7
8     <Action actionReference="TeMIP_AO_Directives_localhost">
9       <ServiceName>aoDirective</ServiceName>
10      <NmsName>localTeMIP</NmsName>
11    </Action>
12    <Action actionReference="TeMIP_TT_Directives_localhost">
13      <ServiceName>ttDirective</ServiceName>
14      <NmsName>localTeMIP</NmsName>
15    </Action>
16    <Action actionReference="TeMIP_FlowManagement">
17      <ServiceName>subscriptionManagement</ServiceName>
18      <NmsName>localTeMIP</NmsName>
19    </Action>
20  </MediationValuePack>
21
22  <MediationValuePack MvpName="exec" MvpVersion="1.1"
23    url="http://localhost:26700/uca/mediation/action/ActionService?WSDL"
24    brokerURL="failover://tcp://localhost:10000">
25
26    <Action actionReference="Exec_localhost">
27      <ServiceName>commandsExecution</ServiceName>
28      <NmsName>localhost</NmsName>
29    </Action>
30  </MediationValuePack>
31
32 </ActionRegistryXML>
```

Figure 15 - Configuring the UCA for EBC ActionRegistry.xml file

The `ActionRegistry.xml` file is an UCA for EBC application level configuration file. It is shared by all UCA for EBC value packs running on the same UCA for EBC Server instance.

Note

☞ Please refer to the *[R1] UCA for Event Based Correlation Installation Guide* for more information on how to configure the `ActionRegistry.xml` file.

2.2.1.2 ValuePackConfiguration.xml

For each deployed UCA for EBC Value Pack that wants to connect to a TeMIP mediation flow, you need to modify the corresponding `ValuePackConfiguration.xml` file located in the `/var/opt/UCA-`

EBC/instances/default/deploy/<Value Pack>/conf folder in order to indicate which TeMIP Operation Context(s) (OCs) to target.

In this file the `<mediationFlows> ... </mediationFlows>` section defines the mediation flows used by the value pack. In this section, each individual mediation flow is defined in a separate `<mediationFlow> ... </mediationFlow>` section.

You need to update the mediation flow section(s) that corresponds to the TeMIP mediation flow(s) by properly setting the name(s) of the TeMIP Operation Context(s) (OCs) that you're targeting:

```
<?xml version="1.0" encoding="UTF-8"?>
<valuePackConfiguration xmlns="http://hp.com/uca/expert/config"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  name="MyValuePack" version="1.0">

  <scenarios>
    ...
  </scenarios>

  <mediationFlows>
    <mediationFlow name="temipFlow" actionReference="TeMIP_FlowManagement" flowNameKey="flowName">
      <flowCreation>
        <actionParameter>
          <key>operation</key>
          <value>CreateFlow</value>
        </actionParameter>
        <actionParameter>
          <key>flowType</key>
          <value>dynamic</value><!-- flowType can only be dynamic in the case of flowCreation -->
        </actionParameter>
        <actionParameter>
          <key>operationContext</key>
          <value>OCSystem</value><!-- a correct TeMIP Operation Context name -->
        </actionParameter>
        <actionParameter>
          <key>operationContext</key>
          <value>otherOCSystem</value><!-- a correct TeMIP Operation Context name -->
        </actionParameter>
      </flowCreation>
      <flowResynchronization>
        ...
      </flowResynchronization>
      <flowStatus>
        ...
      </flowStatus>
    </mediationFlow>
  </mediationFlows>
</valuePackConfiguration>
```

Figure 16 - Configuring TeMIP Operation Contexts in the ValuePackConfiguration.xml file

You can verify the exact names of TeMIP Operation Context(s) (OCs) using TeMIP Client as shown below:

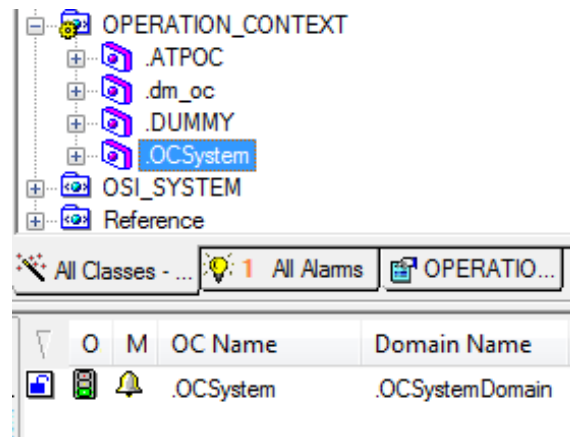


Figure 17 - Viewing TeMIP Operation Contexts in TeMIP Client

Some changes have been introduced in the value pack configuration file: *ValuePackConfiguration.xml* with UCA for EBC V3.1.

The mediation flow configuration part in this file has been enhanced in order to better manage mediation flow resynchronizations. Some alarm providers (such as TeMIP for example) are sending alarms in reverse chronological order of the alarm creation time during resynchronization, whereas some other network management systems send the alarms in chronological order during resynchronization.

To manage this possibility of a network management system to send alarms in either chronological or reverse chronological order during resynchronization, a new Boolean attribute has been added to the mediation flow definition part in the *ValuePackConfiguration.xml* file: *lastEventReceivedFirstDuringResynchronization*.

This attribute is mandatory and has no default value, so it must be added to all existing (prior to V3.1) or new UCA for EBC value packs. Possible values for this attribute are true and false.

Below is an example of how to set the new *lastEventReceivedFirstDuringResynchronization* attribute:

```
<mediationFlows>
  <mediationFlow
    name="temipFlow"
    actionReference="TeMIP_FlowManagement"
    flowNameKey="flowName"
    lastEventReceivedFirstDuringResynchronization="true">
    ...
  </mediationFlow>
</mediationFlows>
```

Figure 18 - Setting the lastEventReceivedFirstDuringResynchronization attribute in the ValuePackConfiguration.xml file

Important Note

In the current implementation, setting this attribute has no effect on non-Problem Detection value packs.

However, for Problem Detection value packs that consume alarms coming from a TeMIP system (that sends alarms in reverse chronological order of alarm creation time during resynchronization), **this attribute must be set to `true`**.

2.2.2 UCA for EBC Problem Detection

This section only applies if you have UCA for EBC Problem Detection value packs.

2.2.2.1 ProblemXmlConfig.xml

ocName


Configuring the *ProblemXmlConfig.xml* file is optional since this file is only present in the *conf/* folder of your value pack if your value pack is a Problem Detection value pack.

If this is your case, then you need to update the names of the TeMIP Operation Contexts used by your value pack in this file. In the *ProblemXmlConfig.xml* file, Operation Contexts are identified by `<string key="ocName"><value>...</value></string>` sections as shown below:

```
<delayForTroubleTicketCreation>1000</delayForTroubleTicketCreation>
</troubleTicket>
<groupTickFlagAware>false</groupTickFlagAware>
<timeWindow>
  <timeWindowMode>Trigger</timeWindowMode>
  <timeWindowBeforeTrigger>2500</timeWindowBeforeTrigger>
  <timeWindowAfterTrigger>5000</timeWindowAfterTrigger>
</timeWindow>
<strings>
  <string key="ocName"><value>.OCSystem</value></string>
</strings>
</problemPolicy>
```

Figure 19 - Configuring TeMIP Operation Contexts in the ProblemXmlConfig.xml file

Note

 Please refer to the [R3] *UCA for EBC Inference Machine User Guide* for more details on how to configure the *ProblemXmlConfig.xml* file.

maxChildrenLength, useOnlyGroupingKeys

What happens when the *children* field of an alarm grows beyond the maximum length?

When the size of the *children* field of a parent alarm reaches its maximum, new potential children for this parent alarm won't be listed in the *children* field. So it won't be possible to know all the children of the parent alarm.

The *maxChildrenLength* attribute can be configured to change the size of the *children* field. By default its value is 15000 Bytes (15 KB). To modify this value,

please edit the following file:

```
/var/opt/UCA-EBC/instances/default/deploy/<Problem  
Detection Value Pack>/conf/ProblemXmlConfig.xml
```

There's also one other attribute that you should consider configuring: the *useOnlyGroupingKeys* attribute.

If in your case, the number of children alarms a parent alarm can have is really too high, increasing the value of the *maxChildrenLength* attribute is not the best solution. It's better to configure your UCA for EBC Problem Detection value pack so that children alarms keep reference of their parent alarm but parent alarms don't. This is done by setting the *useOnlyGroupingKeys* attribute to *true* in the *ProblemXmlConfig.xml* file.

Below is a figure that shows how to configure the *maxChildrenLength* and *useOnlyGroupingKeys* attributes in the *ProblemXmlConfig.xml* file.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>  
<ProblemPolicies xmlns="http://config.pd.vp.expert.uca.hp.com/">  
  <mainPolicy>  
  
    <actions>  
      <defaultActionScriptReference>Exec_Localhost</defaultActionScriptReference>  
  
      <action name="TeMIP EMS">  
  
        <actionReference>TeMIP_AO_Directives_Localhost</actionReference>  
        <actionClass>com.hp.uca.expert.vp.pd.actions.TeMIPActionsFactory</actionClass>  
        <attributeUsedForKeyDuringRecognition>userText</attributeUsedForKeyDuringRecognition>  
        <attributeUsedForKeyPbAlarmCreation>User_Text</attributeUsedForKeyPbAlarmCreation>  
  
        <longs>  
          <long key="maxChildrenLength"><value>15000</value></long>  
        </longs>  
  
        <booleans>  
          <boolean key="useOnlyGroupingKeys"><value>>false</value></boolean>  
        </booleans>  
  
      </action>  
    </actions>
```

Figure 20 - Configuring *maxChildrenLength* and *useOnlyGroupingKeys* in the *ProblemXmlConfig.xml* file

The table below shows detailed information about the *maxChildrenLength* and *useOnlyGroupingKeys* attributes in the *ProblemXmlConfig.xml* file.

Attribute name	Type	Value
maxChildrenLength	Long	Maximum size in Bytes of the <i>children</i> alarm field. Default size is 15000 (15 KB) Once the maximum size of the <i>children</i> field is reached, Problem Detection stops requesting the NMS to add potential new children to the parent alarm.
useOnlyGroupingKeys	Boolean	If set to <i>true</i> (default <i>false</i>), the

Attribute name	Type	Value
		<p>GROUPALARM directive is not used. This implies that <i>parent</i> and <i>children</i> field of alarms won't be filled.</p> <p>Only the <i>grouping Keys</i> field will be used and navigation in TeMIP Client will only be possible through the <i>Alarms grouping</i> sub-menu.</p>

Table 13 - maxChildrenLength and useOnlyGroupingKeys properties in the ProblemXmlConfig.xml file

When you have set the *useOnlyGroupingKeys* attribute to *true*, you “lose” the traditional navigation between parent/children alarms in TeMIP Client, so you have to use the *AlarmGrouping* sub-menu.

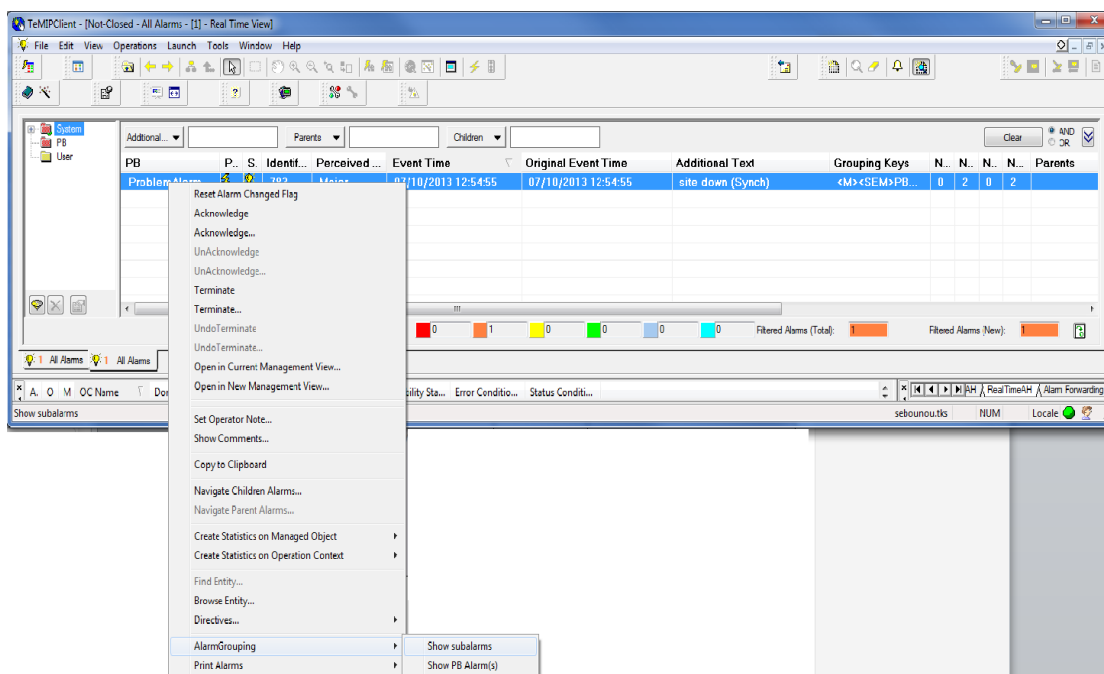


Figure 21 - Navigating using the AlarmGrouping sub-menu in TeMIP Client

In order to activate this *AlarmGrouping* sub-menu in TeMIP Client, please contact your HP representative.

Note

☞ Please refer to the [R3] UCA for EBC Inference Machine User Guide for more details on how to configure the *ProblemXmlConfig.xml* file.

2.2.3 UCA for EBC Channel Adapter

2.2.3.1 uca-ebc-ca.properties

If the UCA for EBC Server doesn't run on the same system as OSS Open Mediation or if the UCA for EBC Server collection queue port number has been changed and is different from the default value of `61666`, the UCA for EBC Channel adapter needs to be configured

This is done by modifying the `uca-ebc-ca.properties` file located in the `/var/<OSS Open Mediation root directory>/containers/instance-0/ips/uca-ebc-ca-3.2/etc` folder.

Where:

- `<OSS Open Mediation root directory>` stands for the OSS Open Mediation installation root directory, which, by default, translates to the `/opt/openmediation-71` directory
- `instance-0` is the OSS Open Mediation container instance folder name. Depending on your configuration, the container number could be different than 0. If this is the case, please adjust the name of the container instance folder accordingly

In this file, the `uca.ebc.jms.broker.host` and `uca.ebc.jms.broker.port` properties should be updated with the correct value for the UCA for EBC Server collection queue hostname and port number:

```
# UCA EBC Server to connect to
uca.ebc.jms.broker.host=localhost
uca.ebc.jms.broker.port=61666

# Action Service
action-service.host=0.0.0.0
action-service.port=26700
```

- Replace: `localhost` by the IP Address or full DNS name of the system running UCA for EBC Server. Please be aware that the value you set for the `uca.ebc.jms.broker.host` property must match the value you have set for the `uca.ebc.serverhost` property in the `${UCA_EBC_INSTANCE}/conf/uca-ebc.properties` file.

If you have set the `uca.ebc.serverhost` property to `localhost` or `127.0.0.1` in the `${UCA_EBC_INSTANCE}/conf/uca-ebc.properties` file then you must use `localhost` or `127.0.0.1` here.

Alternatively, If you have set the `uca.ebc.serverhost` property to the actual IP address/DNS name of the server (or one of the IP addresses/DNS names of the server in case the server has more than one) in the `${UCA_EBC_INSTANCE}/conf/uca-ebc.properties` file then you must use the same IP address/DNS name here.

If you have set the `uca.ebc.serverhost` property to `0.0.0.0` in the `${UCA_EBC_INSTANCE}/conf/uca-ebc.properties` file then you should be able to use `localhost`, `127.0.0.1`, or any IP address/DNS name of the server here.

- Replace: `61666` by the correct port number for UCA for EBC Server collection queue port number (only if it is different from the default value of `61666`)

Note

The port number for UCA for EBC default instance is 61666. The additional instances of UCA for EBC have different port numbers, so the above port number change is mandatory for accessing additional instances of UCA for EBC server.

If you modify the UCA for EBC Channel Adapter configuration while the UCA for EBC Channel Adapter is already deployed in an OSS Open Mediation container (this should not be the case if you're installing the UCA for EBC Channel Adapter for the first time following the instructions in these chapters), you will need to either un-deploy then redeploy the UCA for EBC Channel Adapter in the container, or restart the container for the changes in the configuration to be taken into effect.

Below are the commands to issue to restart the OSS Open Mediation container where the UCA for EBC channel adapter is installed:

On both HP-UX and Linux:

```
$ <OSS Open Mediation root directory>/bin/nom_admin --shutdown-  
container 0
```

The following text should be displayed:

```
Container instance number 0 has been SHUTDOWN.
```

On both HP-UX and Linux:

```
$ <OSS Open Mediation root directory>/bin/nom_admin --start-  
container 0
```

The following text should be displayed:

```
Container instance number 0 has been STARTED.
```

2.2.4 TeMIP Channel Adapter

2.2.4.1 TeMIP_configuration.dynamic.xml

TeMIP/TWS information

In order to properly configure its connection to TeMIP, the TeMIP Channel Adapter must be told which TeMIP director to connect to. This is done by configuring the following file:

```
/var/opt/openmediation-<version>/containers/instance-  
<instance number>/ips/temip-ca-<version>/etc/conf/  
TeMIP_configuration.dynamic.xml
```

Please check the

`<DirectorConfiguration>...</DirectorConfiguration>` section of this file and validate that the information inside this section is correct with regards to your TeMIP/TWS setup.

You should pay special attention to the following elements:

- **MachineName:** by default this element is set to `localhost`. If your TeMIP director is not located on the local host, please update the value of this element accordingly with the host name (or IP address) of your TeMIP director

- **TeMIPDirectorEntity:** this element is set by the TeMIP CA setup script (*temip_ca_setup.sh*). Please verify that the value of this element matches your TeMIP director entity name (execute *manage show temip "*"* on your TeMIP director host to get the TeMIP director entity name)
- **TWSServerPort:** this element is set to *7180* by default, which is the default TWS port number. Please verify that the value of this element matches your TWS configuration

Below is an example of the `<DirectorConfiguration>...</DirectorConfiguration>` section of the *TeMIP_configuration.dynamic.xml* file:

```
<DirectorConfiguration>
  <MachineName>mytemip.mycompany.com</MachineName>
  <!-- Put here TeMIP director name.
       If you leave this field as is, dynamic flows operations will not work -->
  <TeMIPDirectorEntity>.temip.mytemip_temip</TeMIPDirectorEntity>
  <TWSServerPort>7180</TWSServerPort>
</DirectorConfiguration>
```

Figure 22 - Example of TeMIP/TWS configuration in the *TeMIP_configuration.dynamic.xml* file

Below is an example of how to verify the TeMIP director entity name of your TeMIP director (the command below has to be executed on the TeMIP director host):

```
# manage show temip "*"

TeMIP Framework (V6.0.0)

Using default ALL IDENTIFIERS

TEMIP mytemip_ns:.temip.mytemip_temip
On director: mytemip_ns:.temip.mytemip_director
AT Wed, Aug 7, 2013 03:17:31 PM Identifiers

Examination of attributes shows
                                TeMIP Name =
mytemip_ns:.temip.mytemip_temip
```

Figure 23 - How to query the TeMIP director entity name

Alarm Object custom fields

The *TeMIP_configuration.dynamic.xml* file is also the place where you need to declare any Alarm Object custom attributes that you want the TeMIP Channel Adapter to use. Alarm collections created by the TeMIP CA will contain all the custom fields declared in the configuration of the *TeMIP_configuration.dynamic.xml* file.

Alarm Object custom attributes are to be declared in the `<CustomAttributes>...</CustomAttributes>` section of the file.

To add a new Alarm Object custom attributes, you need to add a `<CustomAttribute>...</CustomAttribute>` section inside the `<CustomAttributes>...</CustomAttributes>` section of the file.

```

</CustomAttribute>
<CustomAttribute>
  <Attribute>Correl Notif Info</Attribute>
  <Datatype>XmlString</Datatype>
</CustomAttribute>
<CustomAttribute>
  <Attribute>My Custom Attribute</Attribute>
  <Datatype>XmlString</Datatype>
</CustomAttribute>
</CustomAttributes>
<QueueSize>1000</QueueSize>
<!--PassingClasses>
  <ClassHierarchy>
    <Class>NSI_SYSTEM</Class>

```

Figure 24 - Adding a custom AO attribute in the TeMIP_configuration.dynamic.xml file

2.2.4.2 actions-to-temip-jms-connector.xml

The TeMIP Channel Adapter must be told the location of the TeMIP Web Server. This is done by configuring the following file:

```
/var/opt/openmediation-71/containers/instance-0/ips/temip-ca-21/etc/actions-to-temip-jms-connector.xml
```

Below is an example of the section of the *actions-to-temip-jms-connector.xml* file that you need to update:

```

...
<!-- TWS endpoint -->
  <endpoint id="tws"
    uri="http://mytemip.mycompany.com:7180/TeMIP_WS/services/TEMI
    P?throwExceptionOnFailure=false&bridgeEndpoint=true"/>
...

```

Figure 25 - TWS configuration in actions-to-temip-jms-connector.xml file

In this file, please replace **mytemip.mycompany.com** by your TWS server host name (or IP address) and **7180** by your TWS server port number (in case you didn't use the default port number).

2.2.4.3 actions.to-temip.*.reply.uca-to-nom.xslt

This whole section does not apply with OSS Open Mediation V710, but only with OSS Open Mediation V620 or less.

There's a known issue with the *actions.to-temip.*.reply.uca-to-nom.xslt* mapper files. The *resultExplanation* attribute of OSS Open Mediation actions is not properly mapped in these files, resulting in the *statusExplanation* attribute of UCA for EBC actions being null in UCA for EBC.

An optional configuration step for the TeMIP Channel Adapter consists of modifying these mapper files in order to add a mapping for the *resultExplanation* attribute so that the *statusExplanation* attribute of UCA for EBC actions won't always be null.

Please modify the following files located in the `/var/opt/openmediation-71/containers/instance-<instance number>/ips/temip-ca-21/etc` folder:

- `actions.to-temip.tt.reply.uca-to-nom.xslt`
- `actions.to-temip.ao.reply.uca-to-nom.xslt`

In each of these files, please add the following 2 highlighted lines:

```
...
<xsl:template match="/" >
  <xsl:variable name="rawText"
    select="/ser:executeResponse/actionResponse/listActionResponseItem/rawText"/>
  <xsl:variable name="replyType" select="$rawText/ttp:tt:ReplyType"/>
  <xsl:variable name="statusExplanation" select="/ser:executeResponse/actionResponse/responseStatusExplanation"/>
  <actions:actionResponse>
    <actions:action>
      <xsl:text>ttDirective</xsl:text>
    </actions:action>
    <xsl:choose>
      <xsl:when test="$replyType = 'Response'">
        <actions:status>SUCCESS</actions:status>
      </xsl:when>
      <xsl:when test="$replyType = 'SpecializedException' or $replyType = 'CommonException'">
        <actions:status>EXCEPTION</actions:status>
      </xsl:when>
      <xsl:otherwise>
        <actions:status>ERROR</actions:status>
      </xsl:otherwise>
    </xsl:choose>
    <actions:resultExplanation><xsl:value-of select="$statusExplanation"/></actions:resultExplanation>
    <xsl:if test="$rawText">
      <actions:resultData>
        <actions:genericData>
          ...

```

Figure 26 - Modifying the actions.to-temip.*.reply.uca-to-nom.xslt mappers in the TeMIP Channel Adapter

2.2.5 TeMIP Web Service (TWS)

2.2.5.1 TWS security settings

No security

If you do not need to enable security for your Web Service requests, then it is recommended to use the preset “no security” axis2 TWS configuration as explained below.

Please go to the

`/var/opt/temip/TWS/tomcat/webapps/TeMIP_WS/WEB-INF/conf` folder and overwrite the `axis2.xml` file with the `axis2.xml.nosecu` file as shown below:

```
# pwd
/var/opt/temip/TWS/tomcat/webapps/TeMIP_WS/WEB-INF/conf
# ls
SelfManagement.properties
axis2.xml.user_password_clear      temip.keystore
axis2.xml
axis2.xml.user_password_enc_certif
axis2.xml.nosecu                  deploy-
services.properties
# cp axis2.xml.nosecu axis2.xml
```

```
#
```

Then you need to restart TWS for the change to take effect:

```
# manage restart mcc 0 appl temip_web_services
TeMIP Framework (V6.0.0)

MCC mytemip_ns:.temip.mytemip_director APPLICATION
"temip_web_services"
On director: mytemip_ns:.temip.mytemip_director
AT Wed, Aug 7, 2013 04:26:18 PM

Application stopped successfully - automatic restart
will occur shortly

Process list = (
    self_stopped = { 17549 },
    forced_to_stop = { } )
```

User password clear

If you do need to enable the “user password clean” security for your Web Service requests, then please go to the `/var/opt/temip/TWS/tomcat/webapps/TeMIP_WS/WEB-INF/conf` folder and overwrite the `axis2.xml` file with the `axis2.xml.user_password_clear` file as shown below:

```
# pwd
/var/opt/temip/TWS/tomcat/webapps/TeMIP_WS/WEB-INF/conf
# ls
SelfManagement.properties
axis2.xml.user_password_clear      temip.keystore
axis2.xml
axis2.xml.user_password_enc_certif
axis2.xml.nosecu                  deploy-
services.properties
# cp axis2.xml.user_password_clear axis2.xml
#
```

Then you need to restart TWS for the change to take effect:

```
# manage restart mcc 0 appl temip_web_services
TeMIP Framework (V6.0.0)

MCC mytemip_ns:.temip.mytemip_director APPLICATION
"temip_web_services"
On director: mytemip_ns:.temip.mytemip_director
AT Wed, Aug 7, 2013 04:26:18 PM

Application stopped successfully - automatic restart
will occur shortly

Process list = (
    self_stopped = { 17549 },
    forced_to_stop = { } )
```


The following section does not apply with OSS Open Mediation V710, but only to OSS Open Mediation V620 or less.

In order to use this TWS security setting in the TeMIP Channel Adapter, you need to modify the following mapper files located in the `/var/opt/openmediation-71/containers/instance-<instance number>/ips/temip-ca-21/etc` folder:

- `actions.to-temip.passthru.request.xslt`
- `actions.to-temip.ao.request.uca-to-tws.xslt`
- `actions.to-temip.tt.request.uca-to-tws.xslt`

In each of these files, you need to locate the `<soapenv:Header>` tag and add the following XML code right after this tag, before any other tags:

```
...
    <soapenv:Header>

<!-- BEGIN: support for TWS user_password_clear security setting
-->
<wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd" soapenv:mustUnderstand="1">
  <wsse:UsernameToken xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" wsu:Id="UsernameToken-43">
    <wsse:Username>temip</wsse:Username>
    <wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-profile-1.0#PasswordText">TeMIP</wsse:Password>
  </wsse:UsernameToken>
</wsse:Security>
<!-- END: support for TWS user_password_clear security setting -
-->
...
```

Finally, you need to edit the `axis2.xml` file located in the `/var/opt/openmediation-71/containers/instance-<instance number>/ips/temip-ca-21/etc/conf` folder in order to instruct the TeMIP Channel Adapter to use the `user_password_clear` TWS security setting.

This is done in the `<module ref="rampart" /><parameter name="OutflowSecurity"><action><items></items></action></parameter></module>` section. In this section, you need to modify the `<items></items>` section by setting it to:

```
<items>UsernameToken</items>
```

This change will be effective once the OSS Open Mediation container is restarted or the TeMIP Channel Adapter re-deployed.

2.2.6 TeMIP

In TeMIP, the Operation Contexts used by your UCA for EBC value packs should be configured with the *Emit Aggregate Event* attribute set to *true* (if this is not already the case), otherwise alarm collection from TeMIP to these UCA for EBC value packs will fail.

On the TeMIP host, you can list the Operation Contexts (OCs) with the following command:

```
# manage show oper *

OPERATION_CONTEXT mytemip_ns:.uca_network
On director: mytemip_ns:.temip.mytemip_director
AT Fri, Sep 20, 2013 12:06:41 PM Identifiers

                                Name =
mytemip_ns:.uca_network

OPERATION_CONTEXT mytemip_ns:.uca_pbalarm
On director: mytemip_ns:.temip.mytemip_director
AT Fri, Sep 20, 2013 12:06:41 PM Identifiers

                                Name =
mytemip_ns:.uca_pbalarm
```

Then for each OC used by your UCA for EBC Value Packs, you can issue the following command in order to check the value of the *Emit Aggregate Event* attribute:

```
# manage show OPERATION_CONTEXT <OC for example
mytemip ns:.uca network> Emit Aggregate Event

OPERATION_CONTEXT mytemip_ns:.uca_network
On director: mytemip_ns:.temip.mytemip_director
AT Fri, Sep 20, 2013 12:10:25 PM Characteristics

                                Emit Aggregate Event = True
```

Finally, you need to set the *Emit Aggregate Event* attribute to *true* for each OC used by your UCA for EBC Value Packs that does not have the *Emit Aggregate Event* attribute set to *true* already.

2.3 Optional configuration parameters

2.3.1 Action timeouts

2.3.1.1 UCA for EBC Server

The timeout of actions sent to TeMIP by UCA for EBC value packs can be set globally at the UCA for EBC level by editing the `uca-ebc.properties` file located in the following folder:

```
/var/opt/UCA-EBC/instances/default/conf
```

The `action.timeout = 60000` part in this file identifies the action timeout. The default value is `60000` (60000 milliseconds = 60 seconds).

If the TeMIP Channel Adapter does not reply to action requests from UCA for EBC value packs within the configured timeout, then these actions will fail. The status of these actions in UCA for EBC will be set to `Failed` and the status explanation will indicate that a timeout has occurred.

Please be aware that there's also a timeout for actions at the UCA for EBC Channel Adapter level that might take precedence if its value is less than the value of the action timeout configured in the `uca-ebc.properties` file.

```
#  
# Action Manager thread pool size  
# and action timeout (in milliseconds)  
action.threads = 20  
action.timeout = 60000
```

Figure 27 - Setting the action timeout in the UCA for EBC `uca-ebc.properties` file

In addition to the global timeout for actions at the UCA for EBC level, it is also possible to set individual timeouts per action that will take precedence over the timeout set at the UCA for EBC level.

This is done by executing the `public void setActionTimeout (int actionTimeout)` method on a `com.hp.uca.mediation.action.client.Action` object. The `actionTimeout` argument to the method is expected to be an integer value for the timeout of the action in milliseconds.

2.3.1.2 UCA for EBC Channel Adapter

The timeout of actions sent to TeMIP by UCA for EBC value packs can be set at the UCA for EBC Channel Adapter level by editing the `actions-to-nom.xml` file located in the following folder:

```
/var/opt/openmediation-71/containers/instance-0/ips/uca-  
ebc-ca-3.2/etc
```

The `requestTimeout=20000` part in this file identifies the action timeout. The default value is `20000` (20000 milliseconds = 20 seconds).

If the TeMIP Channel Adapter does not reply to action requests from UCA for EBC value packs within the configured timeout, then these actions will fail. The status of these actions in UCA for EBC will be set to *Failed* and the status explanation will indicate that a timeout has occurred.

Please be aware that there's also a timeout for actions at the UCA for EBC level that might take precedence if its value is less than the value of the action timeout configured in the `actions-to-nom.xml` file.

```
<?xml version="1.0" encoding="UTF-8"?>
...
    <!-- Sending action request to NOM -->
    <log loggingLevel="DEBUG" message="Sending action request to NOM" />
    <convertBodyTo type="java.lang.String" />
    <to uri="activemq:topic:com.hp.openmediation.actions?requestTimeout=20000" />
...
</beans>
```

Figure 28 - Setting the action timeout in the UCA for EBC Channel Adapter `actions-to-nom.xml` file

2.3.2 Sizing options

2.3.2.1 OSS Open Mediation

For performance reasons, it is recommended to tune the java memory and GC (Garbage Collector) options of the JVM (Java Virtual Machine) of OSS Open Mediation containers.

This is done by editing the `servicemix` file located in the following folder:

```
/var/opt/openmediation-71/containers/instance-0/bin
setupDefaults() {
    ###DEFAULT_JAVA_OPTS="$EXTRA_JVM_OPTS -XX:MaxPermSize=$JAVA_PERMGEN_MAX_MEM -Xms$JAVA_MIN_MEM -Xmx$JAVA_MAX_MEM -
    Dderby.system.home=$SERVICEMIX_HOME/data/derby -Dderby.storage.fileSyncTransactionLog=true -
    Dorg.apache.cxf.Logger=org.apache.cxf.common.logging.Log4jLogger -Dcom.sun.management.jmxremote"
    DEFAULT_JAVA_OPTS="$EXTRA_JVM_OPTS -Xms4096m -Xmx4096m -XX:PermSize=1300m -XX:MaxNewSize=2600m -XX:NewSize=2600m -
    XX:SurvivorRatio=32 -Dderby.system.home=$SERVICEMIX_HOME/data/derby -Dderby.storage.fileSyncTransactionLog=true -
    Dorg.apache.cxf.Logger=org.apache.cxf.common.logging.Log4jLogger -Dcom.sun.management.jmxremote"
```

Figure 29 - Setting extra JVM memory and GC options in the `servicemix` file

2.3.2.2 TeMIP Web Service (TWS)

For performance reasons, it is recommended to increase the heap size of TeMIP Web Service (TWS).

This is done by editing the `/var/opt/temip/start/tws_startup.sh` file.

The value of the `CATALINA_OPTS` environment variable should be modified in order to increase the heap size of TeMIP Web Service (TWS).

By default this variable is set to `"-Xms64m -Xmx512m"`. It is recommended to change it to `"-Xms128m -Xmx1024m"` as show below:

```
#-----
#
# © Copyright 2009 Hewlett-Packard Development Company, L.P.
#
# Confidential computer software.
# Valid license from HP required for possession, use or copying.
# Consistent with FAR 12.211 and 12.212, Commercial Computer Software,
# Computer Software Documentation, and Technical Data for Commercial Items
# are licensed to the U.S.
# Government under vendor's standard commercial license.
#
#-----
JAVA_HOME=/usr/opt/temip_3pps/java/jdk1.6 ; export JAVA_HOME
XERCES_HOME=/usr/opt/temip_3pps/xerces/3.0.1 ; export XERCES_HOME
CATALINA_BASE=/var/opt/temip/TWS/tomcat ; export CATALINA_BASE
CATALINA_HOME=/usr/opt/temip_3pps/tomcat/apache-tomcat-6 ; export CATALINA_HOME
JAVA_OPTS=-d64 ; export JAVA_OPTS

...

#CATALINA_OPTS="-Xms64m -Xmx512m" ; export CATALINA_OPTS
CATALINA_OPTS="-Xms128m -Xmx1024m" ; export CATALINA_OPTS

...
```

Figure 30 - Setting the heap size in the TeMIP Web Service (TWS) tws_startup.sh file

In the same manner, it is recommended to modify the maximum size of a TWS reply, and the maximum size of a bulk of replies in the following file:

/var/opt/temip/TWS/tomcat/webapps/TeMIP_WS/WEB-INF/conf/SelfManagement.properties

```
SelfManagement.properties
#
#Mon Nov 28 11:44:54 CET 2011
#RespSizeMax=200000
RespSizeMax=200000
PrintAesSelector=19
CallTimeout=60
#ReplyBulkSizeMax=500
ReplyBulkSizeMax=1000
CallDuration=60
SimultCallMax=120
```

Figure 31 - Setting sizing options in the TeMIP Web Service (TWS) SelfManagement.properties file

2.3.2.3 TeMIP

For performance reasons, it is recommended set the following parameters in the */var/opt/temip/conf/.temip_config* TeMIP configuration file:

```

### BEGIN TAL SERVER UPDATE - TeMIP Access Library Server
# DO NOT INSERT MODIFICATIONS BETWEEN THESE FLAGS
# Define the TAL Server reply queue (queue per client)
# Maximum size
TAL_SERVER_REPLY_QUEUE_MAX_SIZE=2000
# Maximum threshold (congestion reached)
TAL_SERVER_REPLY_QUEUE_THR_MAX=1990
# Minimum threshold (congestion cleared)
TAL_SERVER_REPLY_QUEUE_THR_MIN=1750
# Maximum number of replies per network access
TAL_SERVER_REPLY_QUEUE_GROUP_SIZE=1000

```

Figure 32 - Setting sizing options in the TeMIP .temip_config file

2.4 Alarm object custom attribute configuration

2.4.1 Create custom attribute in TeMIP

To use custom attribute, the first thing to do is to create it in TeMIP. This can be done interactively through TeMIP command `temip_ah_user_defined_attr`. For more information about how to manage custom attribute for alarm object please refer to the HP TeMIP Framework Customization Guide document.

As an example, here we assume we already have a custom attribute created with name "My Custom Field" and the type "Latin1String".

2.4.2 Reading custom attribute value from alarm

2.4.2.1 TeMIP Channel Adapter configuration for custom attribute

For a custom attribute to be readable on UCA side, we need to add its configuration for TeMIP Channel Adapter.

The file to be modified is below.

```

/var/opt/openmediation-<version>/containers/instance-
<instance number>/ips/temip-ca-<version>/etc/conf/
TeMIP_configuration.dynamic.xml

```

Adding a new element `CustomAttribute` in the parent element `CustomAttributes`. Following is the example configuration for the custom attribute "My Custom Field".

```
<CustomAttribute>
  <Attribute>My Custom Field</Attribute>
  <Datatype>XmlString</Datatype>
</CustomAttribute>
```

2.4.2.2 Custom attribute name mapping

A custom attribute has different names in different environments. For example the custom attribute name is “My Custom Field” in TeMIP manage console. And in TWS alarm message, it is encoded into an XML element name. Below is the rule for TWS to do the mapping.

1. Space characters in TeMIP Presentation Names (MSL keywords) are replaced by a separator. The default value is ‘_’ (empty string follows usual XML Schema and WSDL writing convention).
2. The first letter character is to be transformed into uppercase.
3. After a non-letter character, next letter is to be transformed into uppercase.
4. After an uppercased character however
 - a) next continued uppercase letters are to be transformed into lowercase.
 - b) next continued lowercase characters are kept;
5. After lowercase character
 - a) next character is kept.

The output message from TWS is the input of TeMIP Channel Adapter. TeMIP Channel Adapter will do one more mapping for the custom attribute name and normalize the attribute name into camel case. For example the name for “My_Custom_Field” in TWS is converted to “myCustomField” in TeMIP Channel Adapter. The rule is shown below.

1. The first letter character is to be transformed into lowercase.
2. All underscore ‘_’ are removed.

Finally the alarm message from the TeMIP Channel Adapter is consumed by the UCA for EBC Channel Adapter and forwarded to the UCA engine. Following is the example to read the custom field from Java code.

```
Alarm a = ...;
String v = a.getCustomFieldValue("myCustomField");
```

For more information about the attribute name mapping please refer to OSS Open Mediation TeMIP Channel Adapter V210 Installation and Configuration Guide.

2.4.3 Update custom attribute value through “SET” action command

2.4.3.1 Using default name in action command

Custom attribute can be modified by the “Set” command through UCA action. There is no additional configuration required in case you are using the default naming rule following the TWS message format. The default configuration of TeMIP CA supports

this scenario by directly mapping the field name to TWS message for "SET" TeMIP command.

For instance the following code shows how to modify the "My Custom Field" for an existing alarm.

```
String alarmId = ...;
Action act = new
Action("TeMIP_AO_Directives_localhost");
action.addCommand("directiveName", "SET");
action.addCommand("entityName", alarmId);
action.addCommand("My_Custom_Field", "Updated Value");
... ..
action.executeSync();
```

2.4.3.2 Using another name in action command

If the default name does not fit your requirement and you prefer to use another name in action for some reason, this section describes how this can be done through modifying the default XLST configuration.

For example, assuming the name to be passed through action command is "myCustomField", the code will be as shown below.

```
Alarm a = ...;
Action action = new
Action("TeMIP_AO_Directives_localhost");
action.addCommand("directiveName", "SET");
action.addCommand("entityName", a.getIdentifier());
action.addCommand("myCustomField", "Updated Value");
... ..
action.executeSync();
```

Below is the XLST file that manage the converting logic and we should modify it to add our personal one.

```
/var/opt/openmediation-<version>/containers/instance-
<instance number>/ips/temip-ca-<version>/etc/actions.to-
temip.ao.request.uca-to-tws.xslt
```

As an example solution, in following code, a new variable of `of_type_my_custom_field_set_node` and a "when" clause are added for "SET" action command message. Template with name `simple_node` is called when the variable indicates the current element is exactly the custom field we are looking for. In parameters, we provide the proper attribute name `"My_Custom_Field"` and so the generated TWS contains the right attribute name. Please note the newly inserted 'when' block before the last 'when' block.

```
<xsl:if test="($request_type='Set')">
  <oper:Arguments>
    <oper:Attribute_Values>
      ... ..
      <xsl:variable
name="of_type_my_custom_field_set_field_node"
select="('myCustomField')"/>
```



```

... ..
<xsl:for-each select="command/entry">
  <xsl:variable name="key_name"
select="key/text()" />
  <xsl:choose>
    ... ..
    <xsl:when test="$key name =
$of_type_my_custom_field_set_node">
      <xsl:call-template name="simple_node">
        <xsl:with-param name="input_node"
select="." />
        <xsl:with-param name="output_node_name"
select="My_Custom_Field" />
      </xsl:call-template>
    </xsl:when>
    <xsl:when test=" not ($key_name =
$requestKnownAttributes)">
      ... ..
    </xsl:when>
  </xsl:choose>
</xsl:for-each>
</oper:Attribute_Values>
</oper:Arguments>
</xsl:if>

```

2.4.4 Providing custom attribute value in “CREATE” command

Additional configuration is necessary for creating alarm with the custom attribute provided in "CREATE" command.

For example the following code creates an alarm with key "My_Custom_Field" for the custom attribute. Another name such as "myCustomField" can obviously be used.

```

String alarmId = ...;
Action action = new
Action("TeMIP_AO_Directives_localhost");
action.addCommand("directiveName", "CREATE");
action.addCommand("entityName", alarmId);
action.addCommand("Managed_Object", "BSS
ccmeph11_ns:.bssl BTS bts1");
action.addCommand("Perceived_Severity", "CRITICAL");
action.addCommand("Alarm_Type", "EquipmentAlarm");
action.addCommand("Probable_Cause", "LossOfSignal");
action.addCommand("My_Custom_Field", "CreatedByAction");
;
... ..
action.executeSync();

```

Below is the XLST file you need to modify.

```

/var/opt/openmediation-<version>/containers/instance-
<instance number>/ips/temip-ca-<version>/etc/actions.to-
temip.ao.request.uca-to-tws.xslt

```

As an example solution, in following excerpt, code for template calling is inserted for the "CREATE" command. First parameter is the command entry element that contains the custom attribute key and value. The second parameter is the new name to be used in generated TWS message.

```
<xsl:if test="($request_type='Create')">
  <oper:Arguments>
    ... ..
    <xsl:call-template name="simple_node">
      <xsl:with-param name="input_node"
select="command/entry[key='My_Custom_Field']" />
      <xsl:with-param name="output_node_name"
select="'My_Custom_Field'" />
    </xsl:call-template>
    ... ..
  </oper:Arguments>
</xsl:if>
```

If you use another name such as "myCustomField" in action code, the XLST should be modified as below.

```
<xsl:if test="($request_type='Create')">
  <oper:Arguments>
    ... ..
    <xsl:call-template name="simple_node">
      <xsl:with-param name="input_node"
select="command/entry[key='myCustomField']" />
      <xsl:with-param name="output_node_name"
select="'My_Custom_Field'" />
    </xsl:call-template>
    ... ..
  </oper:Arguments>
</xsl:if>
```

Chapter 3 Tuning

3.1 Action threads

In cases where action performance in your solution is key, the number of actions in parallel that the whole UCA for EBC, OSS Open Mediation, and TeMIP solution can handle can be increased.

This chapter describes how to configure the whole chain, from UCA for EBC to OSS Open Mediation and TeMIP, so that it can handle 50 actions in parallel.

The following products need to be configured in order to achieve 50 actions in parallel:

- UCA for EBC
- OSS Open Mediation
- UCA for EBC Channel Adapter
- TeMIP Channel Adapter
- TeMIP Web Services (TWS)

The configuration of each of the components is different depending on the version of UCA for EBC, OSS Open Mediation, UCA for EBC Channel Adapter, and TeMIP Channel Adapter.

Each product specific configuration is detailed in the next chapters.

3.1.1 UCA for EBC Server

3.1.1.1 UCA for EBC Channel Adapter V3.2or V3.0

The number of action threads used by UCA for EBC to send asynchronous action requests to TeMIP through OSS Open Mediation can be set globally at the UCA for EBC level by editing the *uca-ebc.properties* file located in the following folder:

/var/opt/UCA-EBC/instances/default/conf

It is recommended to set the number of action threads to the following value in this file:

- *action.threads* = 50 (The default value is 20 threads).

```
#
# Action Manager thread pool size
# and action timeout (in milliseconds)
action.threads = 50
action.timeout = 60000
```

Figure 33 – Setting the number of action threads in the uca-ebc.properties file

3.1.2 OSS Open Mediation

3.1.2.1 OSS Open Mediation V710 or V620

The core and maximum thread pool size of OSS Open Mediation can be set globally at the OSS Open Mediation level by editing the *servicemix.properties* file located in the following folder:

```
/var/opt/openmediation-<version>/containers/instance-  
0/conf
```

It is recommended to set the core and maximum thread pool size to the following values in this file:

- *servicemix.corePoolSize* = 64 (The default value is 32 threads).
- *servicemix.maximumPoolSize* = 128 (The default value is 64 threads).

```
#Fri Apr 11 15:21:07 CEST 2014  
activemq.host=localhost  
activemq.port=10000  
hub0.activemq.port=10000  
hub.activemq.url=tcp://${hub.activemq.host}:${hub0.activemq.port}  
servicemix.queueSize=256  
activemq.url=nio://${activemq.host}:${activemq.port}  
hub.activemq.host=localhost  
jmx.url=service\:jmx\:rmi\\://jndi/rmi\\://${rmi.host}:${rmi.port}/jmxrmi  
rmi.host=localhost  
servicemix.maximumPoolSize=128  
servicemix.corePoolSize=64  
broker.name=instance-0-at-temiplinux  
rmi.port=10001  
activemq.brokernetwork.ttl=3
```

Figure 34 – Setting the core and max thread pool size in the servicemix.properties file

3.1.3 UCA for EBC Channel Adapter

3.1.3.1 UCA for EBC Channel Adapter V3.2

The thread pool size options of the UCA for EBC Channel Adapter with regards to actions can be set by editing the *actions-to-nom.xml* file located in the following folder:

```
/var/opt/openmediation-71/containers/instance-<instance  
number>/ips/uca-ebc-ca-3.2/etc
```

It is recommended to add threading parameters (to the CXF component) as shown in the following screenshot (the lines to add are highlighted):

```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
  xmlns:context="http://www.springframework.org/schema/context"
  xmlns:tns="http://hp.com/openmediation/${ca.name}/${ca.version.artifacts}"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:uca="http://server.action.mediation.uca.hp.com/"
  xmlns:actions="http://hp.com/openmediation/actions/2011/08"
  xmlns:cxf="http://camel.apache.org/schema/cxf"
  xmlns:lang="http://www.springframework.org/schema/lang"
  xmlns:httpj="http://cxf.apache.org/transport/http-jetty/configuration"
  xsi:schemaLocation="
    http://www.springframework.org/schema/beans http://www.springframework.org/schema/beans/spring-beans.xsd
    http://www.springframework.org/schema/context http://www.springframework.org/schema/context/spring-context.xsd
    http://camel.apache.org/schema/spring http://camel.apache.org/schema/spring/camel-spring.xsd
    http://camel.apache.org/schema/cxf http://camel.apache.org/schema/cxf/camel-cxf.xsd
    http://www.springframework.org/schema/lang http://www.springframework.org/schema/lang/spring-lang.xsd
    http://cxf.apache.org/transport/http-jetty/configuration http://cxf.apache.org/schemas/configuration/http-jetty.xsd">

  <import resource="classpath:META-INF/cxf/cxf.xml" />
  <http:engine-factory bus="cxf">
    <http:engine port="${action-service.port}">
      <http:threadingParameters minThreads="5" maxThreads="50" />
    </http:engine>
  </http:engine-factory>

```

Figure 35 – Setting the CXF component thread pool size in the actions-to-nom.xml file

You should adjust the *maxThreads* property value according to the *action.threads* property of the *UCA_EBC_INSTANCE}/conf/uca-ebc.properties* file using the following formula:

$$\text{maxThreads (in UCA EBC CA)} = \text{action.threads (in UCA EBC)} + 4$$

3.1.3.2 UCA for EBC Channel Adapter V3.0

The Action Service CXF BC component should be made asynchronous.

This can be done by editing the *action-service.xml* file located in the following folder:

```

/var/opt/openmediation-V62/containers/instance-<instance
number>/ips/uca-ebc-ca-3.0/etc

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns:cxfbc="http://servicemix.apache.org/cxfbc/1.0"
  xmlns:action="http://server.action.mediation.uca.hp.com/">
  <bean class="org.springframework.beans.factory.config.PropertyPlaceholderConfigurer">
    <property name="location" value="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.0/etc/uca-ebc-ca.properties"/>
  </bean>
  <cxfbc:consumer wsdl="classpath:ActionService.wsdl"
    targetInterface="action:ActionServiceProxy"
    targetService="action:ActionService" locationURI="http://${action-service.host}:${action-
service.port}/uca/mediation/action/ActionService/" synchronous="false"/>
</beans>

```

Figure 36 – Setting the Action Service CXF BC component in asynchronous mode in the action-service.xml file

3.1.4 TeMIP Channel Adapter

3.1.4.1 TeMIP Channel Adapter V210

The thread pool size options of the TeMIP Channel Adapter with regards to actions can be set by editing the *actions-to-temip-jms-connector.xml* file located in the following folder:

```
/var/opt/openmediation-71/containers/instance-<instance
number>/ips/temip-ca-21/etc
```

It is recommended to set the thread pool size (for the *temip-ca-actions-to-temip-old-ao-and-tt* route) to the following value in this file:

- *poolSize* = 50 (The default value is 20 threads).

Also it is recommended to add a thread pool profile (to the camelContext) as shown in the following screenshot:

```
<camelContext xmlns="http://camel.apache.org/schema/spring" >
  <threadPoolProfile id="defaultThreadPoolProfile" defaultProfile="true"
    poolSize="30" maxPoolSize="60" maxQueueSize="1000"
    rejectedPolicy="CallerRuns"/>

  <!-- TT translation endpoints -->
  ...
  <!-- TWS endpoint -->
  <endpoint id="tws" uri="http://localhost:7180/TeMIP_WS/services/TEMIP?throwExceptionOnFailure=false&bridgeEndpoint=true"/>
  <!-- Old route for AO and TT requests only (left for backward compatibility) -->
  <route id="temip-ca-actions-to-temip-old-ao-and-tt" trace="false">
    <from uri="activemq-nom:topic:com.hp.openmediation.actions?
      disableReplyTo=true&asynConsumer=true&selector=(NOMType='http://hp.com/openmediation/actions/2011/08' AND
      NOMActionMessageType='ActionRequest' AND ( NOMActionNameHint='aoDirective' OR NOMActionNameHint='ttDirective' ) )"/>
    <threads poolSize="50">
      <log loggingLevel="DEBUG" message="Starting processing action request"/>
      <!-- Store reply destination for later use -->
      <setHeader headerName="CamelJmsDestination">
        <header>JMSReplyTo</header>
      </setHeader>
      <removeHeader headerName="JMSReplyTo"/>
    ...
  </route>
</camelContext>
```

Figure 37 – Setting the thread pool size options in the actions-to-temip-jms-connector.xml file

3.1.4.2 TeMIP Channel Adapter V120

The thread pool size options of the TeMIP Channel Adapter with regards to actions can be set by editing the *actions-to-temip-jms-connector.xml* file located in the following folder:

```
/var/opt/openmediation-V62/containers/instance-<instance
number>/ips/temip-ca-V12/etc
```

It is recommended to set the thread pool size (for the *temip-ca-actions-to-temip-old-ao-and-tt* route) to the following value in this file:

- *poolSize* = 50 (The default value is 20 threads).

```
<!-- TWS endpoint -->
<endpoint id="tws" uri="http://localhost:7180/TeMIP_WS/services/TEMIP?
throwExceptionOnFailure=false&bridgeEndpoint=true"/>
<!-- Old route for AO and TT requests only (left for backward compatibility) -->
<route id="temip-ca-actions-to-temip-old-ao-and-tt" trace="false">
  <from uri="activemq-nom:topic:com.hp.openmediation.actions?
    disableReplyTo=true&selector=(NOMType='http://hp.com/openmediation/actions/2011/08' AND
    NOMActionMessageType='ActionRequest' AND ( NOMActionNameHint='aoDirective' OR NOMActionNameHint='ttDirective' ) )"/>
    <threads poolSize="50">
      <log loggingLevel="DEBUG" message="Starting processing action request"/>
      <!-- Store reply destination for later use -->
      <setHeader headerName="CamelJmsDestination">
```

Figure 38 – Setting the thread pool size in the actions-to-temip-jms-connector.xml file

3.1.5 TeMIP Web Service (TWS)

Please first make sure that TeMIP Web Service (TWS) security setting is set to « *No security* » as detailed in chapter 2.2.5.1 “TWS security settings”.

Then, it is recommended to set the maximum size of a bulk of TWS replies to *1000* in the following file:

```
/var/opt/temip/TWS/tomcat/webapps/TeMIP_WS/WEB-INF/conf/SelfManagement.properties
```

```
SelfManagement.properties
#
#Mon Nov 28 11:44:54 CET 2011
#RespSizeMax=200000
RespSizeMax=200000
PrintAesSelector=19
CallTimeout=60
#ReplyBulkSizeMax=500
ReplyBulkSizeMax=1000
CallDuration=60
SimultCallMax=120
```

Figure 39 - Setting ReplyBulkSizeMax option in the TeMIP Web Service (TWS) SelfManagement.properties file

Chapter 4 Validation

4.1 Health check

Once you have properly configured your UCA for EBC, OSS Open Mediation, TeMIP solution, you may want to perform a health check to make sure that every part of the solution works.

4.1.1 UCA for EBC Server

On the UCA for EBC host, there are some commands that can be run to check the health of a UCA EBC Server instance.

The following command checks the status of a UCA for EBC Server instance. The expected output from this command is that the “*Server is running*”.

```
uca> /opt/UCA-EBC/bin/uca-ebc show
INFO - Server is running.
```

The following command lists all the value packs of a UCA for EBC Server instance. Please validate that all value packs that are supposed to be “*Running*” are indeed “*Running*”.

```
uca> /opt/UCA-EBC/bin/uca-ebc-admin --list
INFO -
=====
=====
===== Value Pack : name= VPpbd , version=1.0 ,
status=Running
-----
----- Scenario: com.hp.uca.expert.vp.pd.ProblemDetection
Rule File: file:./deploy/VPpbd-
1.0/pd/ProblemDetection_Rules.pkg
=====
```

Note

Please note that the `uca-ebc` and `uca-ebc-admin` commands must be run using the `uca` user account.

4.1.2 OSS Open Mediation

On the OSS Open Mediation host, there are some commands that can be run to check the health of an OSS Open Mediation container.

The following command checks the status of an OSS Open Mediation container. The expected output from this command is that the container is “*STARTED*”.

```
> /opt/openmediation-71/bin/nom_admin --list-container
List of the containers:
0          STARTED          Hub
```

The following command lists all the installation packages (i.e. Channel Adapters) of an OSS Open Mediation container. Please validate that all installation packages that are supposed to be “*DEPLOYED*” are indeed “*DEPLOYED*”.

```
> /opt/openmediation-71/bin/nom_admin --list-ip-in-
container
DEPLOYED    nom-basic-smx-components
DEPLOYED    smx-basic-components
DEPLOYED    smx-extra-components
DEPLOYED    temip-ca-21
DEPLOYED    uca-ebc-ca-3.2
```

Note

Please note that the *nom-admin* commands must be run using the same user account that was used to setup OSS Open Mediation in Chapter 1.3.1 “OSS Open Mediation V710 installation”.

4.1.3 TeMIP Web Service (TWS)

On the TeMIP host, there are some commands that can be run to check the health of TeMIP Web Service (TWS).

The following command checks that TWS is enabled. The expected output from this command is that the *Operational State* of the *temip_web_services* application is “*Enabled*”.

```
> manage show mcc 0 APPLICATION "temip_web_services" all
attr
TeMIP Framework (V6.0.0)

MCC mytemip_ns:.temip.mytemip_director APPLICATION
"temip_web_services"
On director: mytemip_ns:.temip.mytemip_director
AT Wed, Aug 7, 2013 03:50:56 PM ALL Attributes
```

```

Application Name = "temip_web_services"
Application Type = Permanent_appli
Filename =
/usr/opt/temip/mmexe/temip_web_services
Arguments =
"/var/opt/temip/start/tws_startup.sh"
Automatic Startup = True
Trace File =
/var/opt/temip/TWS/tomcat/logs/tws_cpp.Log

Trace Mask = 4294902840
Framework Trace Mask = 0
Monitored = True
Additional Information = ""
Terminate Timeout = 10
Creation Time = Fri, Jun 25, 2010 06:03:17 PM
Start Time = Mon, Jul 8, 2013 10:07:28 AM
Number Restart = 0
Number Start = 1
Operational State = Enabled
Availability Status = { }
Status Explanation = "Processes are running"
Error Condition Status = -- Attribute Not Available
Delete Pending = False
Stop Pending = False

```

Using an Internet Browser, you can check that the TWS WSDL is accessible (this indicates that TWS is working properly) by connecting to the following URL:

```

http://<TWS server
host>:7180/TeMIP_WS/services/OPERATION_CONTECT-
alarm_object?WSDL

```

4.2 End to end validation

In order to make an end to end validation of your UCA for EBC, OSS Open Mediation, TeMIP solution, you may want to:

- Generate alarms in the TeMIP Operation Contexts used by your UCA for EBC value pack(s)
- Validate that the alarms are received in UCA for EBC
- Validate that actions sent to TeMIP by your UCA for EBC value pack(s) are successful
- Validate that the behaviour of your UCA for EBC value pack(s) is as expected (for example, if one of your UCA for EBC value pack is a Problem Detection value pack, you can check that problem alarms are properly created in TeMIP)

Chapter 5 Troubleshooting

5.1 Frequently met problems

5.1.1 Wrong patch level

5.1.2 list of OCs not existing

5.1.3 wrong config parameters

5.1.4 internationalization

5.1.5 After installing TWS, temip_synchro_mdata fails to synchronize dictionary, dispatch tables between source and target servers

5.1.6 Alarms from TeMIP are not received by UCA for EBC

In case alarms from TeMIP are not received by UCA for EBC, you can perform a series of checks:

- Check TeMIP CA state
- Check TWS state
- Check ACS FM state
- Check UTAF BC configuration

Check TeMIP CA state

On the OSS Open Mediation host, please run the following command and validate that the TeMIP CA installation package is in the “*DEPLOYED*” state:

```
> /opt/openmediation-71/bin/nom_admin --list-ip-in-container <container name or id>
```

DEPLOYED	nom-basic-smx-components
DEPLOYED	smx-basic-components

DEPLOYED	smx-extra-components
DEPLOYED	temip-ca-21
DEPLOYED	uca-ebc-ca-3.2

Note

Please note that the *nom-admin* commands must be run using the same user account that was used to setup OSS Open Mediation in Chapter 1.3.1 “OSS Open Mediation V710 installation”.

Check TWS state

On the TeMIP host, please run the following command and validate that *temip_web_service* is running:

```
> /usr/opt/temip/bin/temip_show | grep
temip_web_services
10092    acloc      PA
/usr/opt/temip/mmexe/temip_web_services
```

Check ACS FM state

On the TeMIP host, please run the following command and validate that *temip_acs_fm* is running:

```
> /usr/opt/temip/bin/temip_show | grep acs_fm
15787    acloc    397    AM
/usr/opt/temip/mmexe/temip_acs_fm
```

Check UTAF BC configuration

In the *uca-mediation-vp-utaf.xml* file located in the */var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc* folder, all endpoints must use the same *rootDirectory* otherwise this setting will be overwritten. Please validate that this is the case:

```
<!-- Dynamic flows-->
<utaf:provider
  service="ca:utaf_bc_dynamic_flows"
  endpoint="endpoint"
  targetService="ca:alarms_from_temip_jms_provider"
  targetEndpoint="endpoint"
  configurationFile="ips/temip-ca-21/etc/conf/TeMIP_configuration.dynamic.xml"
  rootDirectory="ips/temip-ca-21/etc"
  staticConfiguration="false" />
<!-- Static flows-->
```

```

<!-- <utaf:provider
  service="ca:utaf_bc_static_flow1"
  endpoint="static_flow1"
  targetService="ca:alarms_from_temip_jms_provider"
  targetEndpoint="endpoint"
  configurationFile="ips/temip-ca-21/etc/conf/
TeMIP_configuration.xml"
  rootDirectory="ips/temip-ca-21/etc"
  staticConfiguration="true" /> -->

```

In the *TeMIP_configuration.dynamic.xml* file (or the configuration file used by static flows referenced in the *uca-mediation-vp-utaf.xml* file: *TeMIP_configuration.xml* in our example above) located in the */var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc/conf* folder, please validate that the *TeMIPDirectorEntity* and *OperationContext* attributes are properly set:

```

<TeMIPDirectorEntity>.temip.mytemip_temip</TeMIPDirectorEntity>
<OperationContext>myoc</OperationContext>

```

5.1.7 Emit aggregate events not set to True

On the TeMIP host, please run the following command and validate that the Operation Contexts that are used by your UCA for EBC have the *Emit Aggregate Event* attribute set to *true*:

```

> /usr/opt/temip/bin/manage show OPERATION_CONTEXT
gdrceb_ns:.wandl_1_test_oc Emit Aggregate Event
OPERATION_CONTEXT gdrceb_ns:.wandl_1_test_oc
On director: gdrceb_ns:.temip.gdrceb_director
AT Thu 29 Dec 2011 06:57:45 Characteristics

Emit Aggregate Event = True

```

5.1.8 TWS in secured mode, FATAL error

If your Alarm Object directives (AODirectives) result in the following error, it indicates that TeMIP Web Service (TWS) is not properly configured:

```

2011-12-30 09:04:27,391 FATAL [T-AcsColln-static_flow1]
com.hp.temip.temip_ws.common.call - Exception caught
during Create Collection call:
org.apache.axiom.soap.SOAPProcessingException: First
Element must contain the local name, Envelope , but found
html

```

You should verify TeMIP Web Service (TWS) configuration as indicated in Chapter 2.2.5 "TeMIP Web Service (TWS)".

5.1.9 TeMIP Alarm Object or Trouble Ticket actions are failing

In case TeMIP Alarm Object or Trouble Ticket actions are failing, you can perform the following checks on the OSS Open Mediation host.

Check actions-to-temip-jms-connector.xml file in TeMIP Channel Adapter

Please check the `actions-to-temip-jms-connector.xml` file located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder and validate that the `selector` part is as shown below:

```
<from uri="activemq-  
nom:topic:com.hp.openmediation.actions?disableReplyTo=true&  
asyncConsumer=true&selector=(NOMType='http://hp  
.com/openmediation/actions/2011/08' AND  
NOMActionMessageType='ActionRequest' AND (   
NOMActionNameHint='aoDirective' OR  
NOMActionNameHint='ttDirective' ) )"/>
```

Check actions.to-temip.ao.request.nom-to-uca.xslt file in TeMIP Channel Adapter

The `actions.to-temip.ao.request.nom-to-uca.xslt` file is located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder.

Source message should comply with <http://hp.com/openmediation/actions/2011/08>

Resulting message should comply with <http://server.action.mediation.uca.hp.com/>

Check actions.to-temip.ao.request.uca-to-tws.xslt file in TeMIP Channel Adapter

The `actions.to-temip.ao.request.uca-to-tws.xslt` file is located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder.

Source message should comply with <http://server.action.mediation.uca.hp.com/>

Resulting message should comply with http://operation_context-alarm_object.types.ws.temip.ov.hp.com

Check actions.to-temip.ao.reply.tws-to-uca.xslt file in TeMIP Channel Adapter

The `actions.to-temip.ao.reply.tws-to-uca.xslt` file is located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder.

Source message complies with http://operation_context-alarm_object.types.ws.temip.ov.hp.com

Resulting message should comply with <http://server.action.mediation.uca.hp.com/>

Check actions.to-temip.ao.reply.uca-to-nom.xslt file in TeMIP Channel Adapter

The `actions.to-temip.ao.reply.uca-to-nom.xslt` file is located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder.

Source message complies with <http://server.action.mediation.uca.hp.com/>

Resulting message should comply with <http://hp.com/openmediation/actions/2011/08>

If you modified any of the files of the TeMIP Channel Adapter, you will need to re-deploy it using the following commands to apply the modifications:

```
> /opt/openmediation-71/bin/nom_admin --undeploy-ip-in-container temip-ca-21
> /opt/openmediation-71/bin/nom_admin --deploy-ip-in-container temip-ca-21
```

5.1.10 TeMIP Pass-through actions are failing

In case TeMIP Pass-through actions are failing, you can perform the following checks on the OSS Open Mediation host.

Check actions-to-temip-jms-connector.xml file in TeMIP Channel Adapter

Please check the `actions-to-temip-jms-connector.xml` file located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder and validate that the `selector` part is as shown below:

```
<from uri="activemq-
nom:topic:com.hp.openmediation.actions?disableReplyTo=true&
asyncConsumer=true&selector=(NOMType='http://hp
.com/openmediation/actions/2011/08' AND
NOMActionMessageType='ActionRequest' AND
NOMActionNameHint='temipPassthroughDirective')"/>
```

Check actions.to-temip.passthru.request.xslt file in TeMIP Channel Adapter

The `actions.to-temip.passthru.request.xslt` file is located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder.

Source message complies with <http://hp.com/openmediation/actions/2011/08>

Resulting message should comply with TeMIP Web Services interface format

Check actions.to-temip.passthru.reply.xslt file in TeMIP Channel Adapter

The `actions.to-temip.passthru.reply.xslt` file is located in the `/var/opt/openmediation-<version>/containers/instance-<instance number>/ips/temip-ca-<version>/etc` folder.

Source message complies with TeMIP Web Services interface format

Resulting message should comply with
<http://hp.com/openmediation/actions/2011/08>

If you modified any of the files of the TeMIP Channel Adapter, you will need to re-deploy it using the following commands to apply the modifications:

```
> /opt/openmediation-71/bin/nom_admin --undeploy-ip-in-  
container temip-ca-21  
> /opt/openmediation-71/bin/nom_admin --deploy-ip-in-  
container temip-ca-21
```

5.1.11 The following errors are not really a problem

If you encounter the following error, this error can be ignored as this is not a sign of a problem:

```
2011-11-06 02:21:54,519 ERROR [T-UcaAlarm-static_flow1]  
com.hp.uca.mediation.vp.temip.utaf.client - Exception  
has occur:  
java.lang.InterruptedException  
    at  
java.util.concurrent.locks.AbstractQueuedSynchronizer$Con  
ditionObject.reportInterruptAfterWait (AbstractQueuedSynch  
ronizer.java:1961)  
    at  
java.util.concurrent.locks.AbstractQueuedSynchronizer$Con  
ditionObject.await (AbstractQueuedSynchronizer.java:1996)  
    at  
java.util.concurrent.ArrayBlockingQueue.take (ArrayBlockin  
gQueue.java:317)  
    at  
com.hp.temip.temip_ws.common.queue.TeMIPMonitoredQueue.su  
bscribe (TeMIPMonitoredQueue.java:71)  
    at  
com.hp.uca.mediation.vp.temip.utaf.SendUcaAlarmThread.run  
(SendUcaAlarmThread.java:87)
```

Similarly, if you encounter the following error, this error can be ignored as this is not a sign of a problem:

```
2011-11-06 02:20:58,580 WARN [AsyncDeployer for init  
uca-temip-mvp-utaf-bc-su]  
com.hp.temip.temip_ws.common.properties - Instance  
already exist:  
UniversalAlarmForwarder:name=Properties,type=Application  
2011-11-06 02:21:54,389 ERROR [T-AcsColln-static_flow1]  
com.hp.temip.temip_ws.acs_ws.collection -  
com.hp.temip.temip_ws.common.call.exception.TeMIPCallStop  
pedException: Current call stopped  
  
2011-11-06 02:21:54,522 WARN [AsyncDeployer for init uca-  
temip-mvp-utaf-bc-su]  
com.hp.temip.temip_ws.acs_ws.properties - Instance not  
found:
```



```

UniversalAlarmForwarder:name=AcsCollection,side=Properties,type=static_flow1

2011-11-06 02:21:54,522 ERROR [AsyncDeployer for init
uca-temip-mvp-utaf-bc-su]
com.hp.temip.temip_ws.acs_ws.properties -
com.hp.temip.temip_ws.common.jmx.exception.TeMIPMXBeanExc
eption: javax.management.InstanceNotFoundException:
UniversalAlarmForwarder:type=static_flow1,side=Properties
,name=AcsCollection

```

If you encounter the following error, this error can be ignored as this is not a sign of a problem (an error occurred but the UTAF component in TeMIP Channel Adapter was able to recover from the error):

```

2011-08-08 20:46:40,693 ERROR [T-AcsColln-static_flow1]
com.hp.temip.temip_ws.acs_ws.collection -
=====
=====
===== AcsCollectionThread
=====
=====
~~~~~
~~~~~ Queue Information
~~~~~
~~~~~
2011-08-08 20:46:40,693 WARN [T-AcsColln-static_flow1]
com.hp.temip.temip_ws.acs_ws.collection - The Automatic
retry mode is selected... trying to recreate collection
2011-08-08 20:46:40,797 ERROR [T-AcsColln-static_flow1]
com.hp.temip.temip_ws.acs_ws.call - Delete Collection
call has failed: CollectionBeingSubscribed: Empty
2011-08-08 20:46:46,440 WARN [T-AcsColln-static_flow1]
com.hp.temip.temip_ws.acs_ws.collection - Failover
succesful, collection restarted...

```

Dynamic alarms flows (from TeMIP) are not persisted. Thus if the TeMIP Channel Adapter was re-deployed or if the OSS Open Mediation container instance was restarted, all dynamic alarms flows (from TeMIP) have been reset and no alarms will be sent for them. This is not error. Other channel adapters should re-send subscription requests or an administrator should configure static flows.

5.2 Enabling more logging

This chapter explains how to enable more logging in various parts of the UCA for EBC - TeMIP chain.

5.2.1 OSS Open Mediation

To enable the “troubleshooting” logging configuration for an OSS Open Mediation container, you need to overwrite the `log4j.xml` file with the `log4j.xml.troubleshooting.xml` file in the `/var/opt/openmediation-71/containers/instance-0/conf/` folder:

```
> cd /var/opt/openmediation-71/containers/instance-0/conf/
> cp log4j.xml.troubleshooting.xml log4j.xml
```

No restart of the OSS Open Mediation container is required. Changes will take effect automatically after a couple of minutes.

Below is the list of log files of an OSS Open Mediation container. These log files are located in the `/var/opt/openmediation-71/containers/instance-0/data/log` folder.

File	Description
<code>servicemix-error.log</code>	Contains ERROR and WARNING messages. Should be checked first
<code>servicemix-info.log</code>	Contains INFO and above messages. Could give ideas about root cause of the problem
<code>servicemix-message-flow.log</code>	Contains all messages flowing on NMR and Camel tracer
<code>servicemix-debug.log</code>	Contains all log messages

Table 14 – List of log files of an OSS Open Mediation container

To revert back to the “production” logging configuration for an OSS Open Mediation container, you need to overwrite the `log4j.xml` file with the `log4j.xml.production.xml` file in the `/var/opt/openmediation-71/containers/instance-0/conf/` folder.

```
> cd /var/opt/openmediation-71/containers/instance-0/conf/
> cp log4j.xml.production.xml log4j.xml
```

5.2.2 UCA for EBC Channel Adapter

To enable more logging in the UCA for EBC Channel Adapter, there are several ways to do it.

5.2.2.1 Enabling debug logging to a single file

This step is not recommended for production environments since it involves logging messages at the DEBUG level.

In case you want to configure OSS Open Mediation to log all UCA for EBC Channel Adapter DEBUG log messages to a single file, you can edit the

`/var/opt/openmediation-71/containers/instance-0/conf/log4j.xml` file to add an UCA for EBC Channel Adapter specific appender and loggers (the highlighted parts need to be added to the file):

```
...
    <appender name="UCA-EBC-CA" class="org.apache.log4j.RollingFileAppender">
        <param name="threshold" value="DEBUG"/>
        <param name="File" value="data/log/servicemix-uca-ebc-ca.log"/>
        <param name="MaxFileSize" value="50MB"/>
        <param name="MaxBackupIndex" value="10"/>
        <layout class="org.apache.log4j.PatternLayout">
            <param name="ConversionPattern" value="%d %-5p [%t] %c %x
- %m%n"/>
        </layout>
    </appender>
...
    <logger name="uca-ebc-ca-actions-to-nom" additivity="false">
        <level value="DEBUG"/>
        <appender-ref ref="UCA-EBC-CA"/>
    </logger>
    <logger name="uca-ebc-ca-alarms-to-nom" additivity="false">
        <level value="DEBUG"/>
        <appender-ref ref="UCA-EBC-CA"/>
    </logger>
    <logger name="uca-ebc-ca-alarms-from-nom" additivity="false">
        <level value="DEBUG"/>
        <appender-ref ref="UCA-EBC-CA"/>
    </logger>
...
```

No restart of the OSS Open Mediation container is required. Changes will take effect automatically after a couple of minutes.

Once the changes are effective, all UCA for EBC Channel Adapter DEBUG log messages will be logged to the `/var/opt/openmediation-71/containers/instance-0/data/log/servicemix-uca-ebc-ca.log` file.

These DEBUG log messages include alarm (both alarms from TeMIP to UCA for EBC and alarms from UCA for EBC to OSS Open Mediation) and action requests/responses (from UCA for EBC to TeMIP) dump log messages.

5.2.2.2 Logging alarms to files

This step is not recommended for production environments since it involves logging each alarm passing through the UCA for EBC Channel Adapter to a separate file.

If you want to dump alarms coming from TeMIP and going to UCA for EBC in both OSS Open Mediation and UCA for EBC alarm format to files, please edit the `/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/etc/alarms-from-nom.xml` file as show below (the highlighted parts should be uncommented in the file)

```
...
    <camelContext xmlns="http://camel.apache.org/schema/spring">
        <endpoint id="file-out1"
uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
```

```

SNAPSHOT/misc/alarms-from-nom-output-just-from-bus"/>
    <!-- endpoint id="file-out2"
uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/alarms-from-nom-output-to-mapper"/-->
    <endpoint id="file-out3"
uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/alarms-from-nom-output-from-mapper-to-uca-jms-
connector"/>
    <!-- endpoint id="file-out4"
uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/alarms-from-nom-output-after-uca-jms-connector"/-->
    <endpoint id="transform-alarms-from-nom"
uri="xslt:file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/etc/alarms-from-nom-to-uca-
ebc.xslt?transformerFactory=saxon"/>
    <route id="uca-ebc-ca-alarms-from-nom" trace="true">
    <from uri="activemq-
nom:topic:com.hp.openmediation.alarms?selector=(NOMType='http://hp.com/
openmediation/alarms/2011/08')"/>
    <to ref="file-out1"/>
    <log loggingLevel="DEBUG" message="Starting processing alarm
collection"/>
    <log loggingLevel="DEBUG" message="Dumping alarm collection
(before mapping) to file"/>
    <setHeader headerName="CamelFileName">
    <simple>alarm-${date:now:yyyy-MM-dd-HH-mm-ss-
SSS}.txt</simple>
    </setHeader>
    <log loggingLevel="DEBUG" message="Transforming alarms
message from NOM to UCA EBC format using XSLT"/>
    <convertBodyTo type="org.w3c.dom.Document"/>
    <!-- to ref="file-out2"/-->
    <log message="Alarm from NOM = ${body}" loggingLevel="DEBUG"
/>
    <to ref="transform-alarms-from-nom"/>
    <to ref="file-out3"/>
    <log loggingLevel="DEBUG" message="Sending alarm collection to
UCA EBC"/>
    <convertBodyTo type="java.lang.String" />
    <to uri="activemq-uca-ebc:topic:com.hp.uca.ebc.alarms"/>
    <!-- to ref="file-out4"/-->
    <log loggingLevel="DEBUG" message="Alarm collection processing
finished"/>
    </route>
</camelContext>
...

```

Once the UCA for EBC Channel Adapter is un-deployed and re-deployed or the OSS Open Mediation container restarted, the changes in the file will be effective and each alarm coming from TeMIP and going to UCA for EBC will be logged in a separate file in the following folders:

- Alarms in OSS Open Mediation format: `/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/misc/alarms-from-nom-output-just-from-bus`
- Alarms in UCA for EBC format: `/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-`

5.2.2.3 Logging action request/responses to files

This step is not recommended for production environments since it involves logging each action request/response passing through the UCA for EBC Channel Adapter to a separate file.

If you want to dump UCA for EBC action requests/responses to TeMIP in both OSS Open Mediation and UCA for EBC action format to files, please edit the `/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/etc/actions-to-nom.xml` file as show below (the highlighted parts should be uncommented in the file)

```
...
    <camelContext xmlns="http://camel.apache.org/schema/spring">

        <endpoint id="transform-action-requests-from-uca-ebc-to-nom"
            uri="xslt:file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-
SP1/etc/action-requests-from-uca-ebc-to-
nom.xslt?transformerFactory=saxon" />
        <endpoint id="file-action-requests-uca-ebc-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1/misc/action-
requests/uca-ebc-format"/>
        <endpoint id="file-action-requests-nom-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1/misc/action-
requests/nom-format"/>

        <endpoint id="transform-action-responses-from-nom-to-uca-ebc"
            uri="xslt:file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-
SP1/etc/action-responses-from-nom-to-uca-
ebc.xslt?transformerFactory=saxon" />
        <endpoint id="file-action-responses-nom-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1/misc/action-
responses/nom-format"/>
        <endpoint id="file-action-responses-uca-ebc-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1/misc/action-
responses/uca-ebc-format"/>

        <route id="uca-ebc-ca-actions-to-nom" trace="true">
            <from uri="cxf:bean:actionservice" />
            <log loggingLevel="DEBUG" message="Starting processing action"
/>

            <!-- Setting NOM headers of action request -->
            <log loggingLevel="DEBUG"
                message="Setting NOM FinalConsumer headers of action
request" />
            <convertBodyTo type="org.w3c.dom.Document" />
            <setHeader headerName="NOMFinalConsumer">
                <xpath
resultType="java.lang.String">concat(//mvpName/text(), '-',
//mvpVersion/text())</xpath>
                </setHeader>
                <setHeader headerName="NOMFinalConsumerEndpoint">
                    <xpath
resultType="java.lang.String">//serviceName/text()</xpath>
                    </setHeader>
                    <setHeader headerName="NOMFinalConsumerHost">
```

```

        <xpath
resultType="java.lang.String">//nmsName/text()</xpath>
        </setHeader>
        <!-- Add temporary headers -->
        <setHeader headerName="actionId">
        <xpath
resultType="java.lang.String">//actionId/text()</xpath>
        </setHeader>

        <!-- Processing action request -->
        <!-- log loggingLevel="DEBUG" message="Dumping action request
in UCA EBC format to file" / -->
        <to ref="file-action-requests-uca-ebc-format"/>
        <log loggingLevel="DEBUG"
            message="Transforming action request from UCA EBC format
to NOM format using XSLT" />
        <to ref="transform-action-requests-from-uca-ebc-to-nom" />
        <log message="Action Request = ${body}" loggingLevel="DEBUG"
/>
        <!-- log loggingLevel="DEBUG" message="Dumping action request
in NOM format to file" / -->
        <to ref="file-action-requests-nom-format"/>

        <!-- Setting NOM headers of action request -->
        <log loggingLevel="DEBUG"
            message="Setting NOM OriginalProvider headers of action
request" />
        <convertBodyTo type="org.w3c.dom.Document" />
        <setHeader headerName="NOMOriginalProvider">
            <constant>uca-ebc-ca-3.2-SP1</constant>
        </setHeader>
        <setHeader
headerName="NOMOriginalProviderContainerInstanceNumber">
            <simple>${sys.nom_instance_number}</simple>
        </setHeader>
        <process ref="setNOMOriginalProviderHost" />
        <setHeader headerName="NOMActionMessageType">
            <constant>ActionRequest</constant>
        </setHeader>
        <setHeader headerName="NOMType">

        <constant>http://hp.com/openmediation/actions/2011/08</constant>
        </setHeader>
        <setHeader headerName="NOMActionNameHint">
            <xpath
resultType="java.lang.String">/actions:ActionRequest/actions:action/text()</x
path>
            </setHeader>

        <!-- Sending action request to NOM -->
        <log loggingLevel="DEBUG" message="Sending action request to
NOM" />
        <convertBodyTo type="java.lang.String" />
        <to
uri="activemq:topic:com.hp.openmediation.actions?requestTimeout=20000"
/>

        <!-- Enforcing JMSTextMessage type of reply message -->
        <convertBodyTo type="java.lang.String" />

```

```

        <!-- Processing action response -->
        <!-- log loggingLevel="DEBUG" message="Dumping action
response in NOM format to file" / -->
        <to ref="file-action-responses-nom-format"/>
        <log message="Action Response = ${body}" loggingLevel="DEBUG"
/>

        <log loggingLevel="DEBUG" message="Transforming action
responses from NOM format to UCA EBC format using XSLT" />
        <to ref="transform-action-responses-from-nom-to-uca-ebc" />
        <!-- log loggingLevel="DEBUG" message="Dumping action
response in UCA EBC format to file" / -->
        <to ref="file-action-responses-uca-ebc-format"/>

        <!-- Remove temporary headers -->
        <removeHeaders pattern="actionId" />

        <log loggingLevel="DEBUG" message="Sending action response
back to UCA EBC" />
        <log loggingLevel="DEBUG" message="Action processing finished"
/>
    </route>
</camelContext>
...

```

Once the UCA for EBC Channel Adapter is un-deployed and re-deployed or the OSS Open Mediation container restarted, the changes in the file will be effective and each UCA for EBC action request/response to TeMIP will be logged in a separate file in the following folders:

- Action Requests in UCA for EBC format: */var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/misc/action-requests/uca-ebc-format*
- Action Requests in OSS Open Mediation format:
/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/misc/action-requests/nom-format
- Action Responses in OSS Open Mediation format:
/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/misc/action-responses/nom-format
- Action Responses in UCA for EBC format: */var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/misc/action-responses/uca-ebc-format*

5.2.2.4 Using Apache ActiveMQ Browser to monitor actions requests/responses

This step is not recommended for production environments since it involves making copies of each action request/response passing through the UCA for EBC Channel Adapter and sending them to JMS Topics on the ActiveMQ Broker of the OSS Open Mediation container.

Apache ActiveMQBrowser is a tool that can be used to monitor action requests/responses in the UCA for EBC Channel Adapter.

Apache ActiveMQBrowser can be downloaded from:
<http://sourceforge.net/projects/activemqbrowser/>

Once you have installed Apache ActiveMQBrowser on your system, you will need to make some modification to the UCA for EBC Channel Adapter so that action requests/responses can be monitored.

Please edit the `/var/opt/openmediation-71/containers/instance-0/ips/uca-ebc-ca-3.2/etc/actions-to-nom.xml` file as show below (the highlighted parts should be added to the file)

```
...
    <camelContext xmlns="http://camel.apache.org/schema/spring">

        <endpoint id="transform-action-requests-from-uca-ebc-to-nom"
            uri="xslt:file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-
SP1/etc/action-requests-from-uca-ebc-to-
nom.xslt?transformerFactory=saxon" />
        <endpoint id="file-action-requests-uca-ebc-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/action-requests/uca-ebc-format"/>
        <endpoint id="file-action-requests-nom-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/action-requests/nom-format"/>

        <endpoint id="transform-action-responses-from-nom-to-uca-ebc"
            uri="xslt:file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-
SP1-SNAPSHOT/etc/action-responses-from-nom-to-uca-
ebc.xslt?transformerFactory=saxon" />
        <endpoint id="file-action-responses-nom-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/action-responses/nom-format"/>
        <endpoint id="file-action-responses-uca-ebc-format"
            uri="file:${path_nom_ips_deployment_dir}/uca-ebc-ca-3.2-SP1-
SNAPSHOT/misc/action-responses/uca-ebc-format"/>

        <route id="uca-ebc-ca-actions-to-nom" trace="true">
            <from uri="cxf:bean:actionservice" />
            <log loggingLevel="DEBUG" message="Starting processing action"
/>
            <wiretap
uri="activemq:topic:com.hp.uca.ebc.ca.requests?preserveMessageQos=true"/
>

            <!-- Setting NOM headers of action request -->
            <log loggingLevel="DEBUG"
                message="Setting NOM FinalConsumer headers of action
request" />
            <convertBodyTo type="org.w3c.dom.Document" />
            <setHeader headerName="NOMFinalConsumer">
                <xpath
resultType="java.lang.String">concat(//mvpName/text(), '-',
//mvpVersion/text())</xpath>
                </setHeader>
                <setHeader headerName="NOMFinalConsumerEndpoint">
                    <xpath
resultType="java.lang.String">//serviceName/text()</xpath>
                    </setHeader>
                    <setHeader headerName="NOMFinalConsumerHost">
                        <xpath
resultType="java.lang.String">//nmsName/text()</xpath>
```



```

        </setHeader>
        <!-- Add temporary headers -->
        <setHeader headerName="actionId">
            <xpath
resultType="java.lang.String">//actionId/text()</xpath>
        </setHeader>

        <!-- Processing action request -->
        <!-- log loggingLevel="DEBUG" message="Dumping action request
in UCA EBC format to file"/ -->
        <to ref="file-action-requests-uca-ebc-format"/>
        <log loggingLevel="DEBUG"
            message="Transforming action request from UCA EBC format
to NOM format using XSLT" />
        <to ref="transform-action-requests-from-uca-ebc-to-nom" />
        <log message="Action Request = ${body}" loggingLevel="DEBUG"
/>

        <!-- log loggingLevel="DEBUG" message="Dumping action request
in NOM format to file"/ -->
        <to ref="file-action-requests-nom-format"/>

        <!-- Setting NOM headers of action request -->
        <log loggingLevel="DEBUG"
            message="Setting NOM OriginalProvider headers of action
request" />
        <convertBodyTo type="org.w3c.dom.Document" />
        <setHeader headerName="NOMOriginalProvider">
            <constant>uca-ebc-ca-3.2-SP1-SNAPSHOT</constant>
        </setHeader>
        <setHeader
headerName="NOMOriginalProviderContainerInstanceNumber">
            <simple>${sys.nom_instance_number}</simple>
        </setHeader>
        <process ref="setNOMOriginalProviderHost" />
        <setHeader headerName="NOMActionMessageType">
            <constant>ActionRequest</constant>
        </setHeader>
        <setHeader headerName="NOMType">

        <constant>http://hp.com/openmediation/actions/2011/08</constant>
        </setHeader>
        <setHeader headerName="NOMActionNameHint">
            <xpath
resultType="java.lang.String">/actions:ActionRequest/actions:action/text()</x
path>
        </setHeader>

        <!-- Sending action request to NOM -->
        <log loggingLevel="DEBUG" message="Sending action request to
NOM" />
        <convertBodyTo type="java.lang.String" />
        <to
uri="activemq:topic:com.hp.openmediation.actions?requestTimeout=20000"
/>

        <!-- Enforcing JMSTextMessage type of reply message -->
        <convertBodyTo type="java.lang.String" />

        <!-- Processing action response -->
        <!-- log loggingLevel="DEBUG" message="Dumping action

```

```

response in NOM format to file"/ -->
    <to ref="file-action-responses-nom-format"/>
    <log message="Action Response = ${body}" loggingLevel="DEBUG"
/>
    <log loggingLevel="DEBUG" message="Transforming action
responses from NOM format to UCA EBC format using XSLT" />
    <to ref="transform-action-responses-from-nom-to-uca-ebc" />
    <!-- log loggingLevel="DEBUG" message="Dumping action
response in UCA EBC format to file"/ -->
    <to ref="file-action-responses-uca-ebc-format"/>
    <wiretap
uri="activemq:topic:com.hp.uca.ebc.ca.responses?preserveMessageQos=true"
/>

    <!-- Remove temporary headers -->
    <removeHeaders pattern="actionId" />

    <log loggingLevel="DEBUG" message="Sending action response
back to UCA EBC" />
    <log loggingLevel="DEBUG" message="Action processing finished"
/>
</route>
</camelContext>
...

```

Once the UCA for EBC Channel Adapter is un-deployed and re-deployed or the OSS Open Mediation container restarted, the changes in the file will be effective and each action request/response to TeMIP will be logged to the following JMS topics on the ActiveMQ Broker of the OSS Open Mediation container:

- Action Requests in UCA for EBC format:
com.hp.uca.ebc.ca.requests
- Action Responses in UCA for EBC format:
com.hp.uca.ebc.ca.responses

Then you need to start Apache ActiveMQBrowser in order to start monitoring action requests/responses passing through the UCA for EBC Channel Adapter.

In the File menu, please select the “New Connection” menu item.

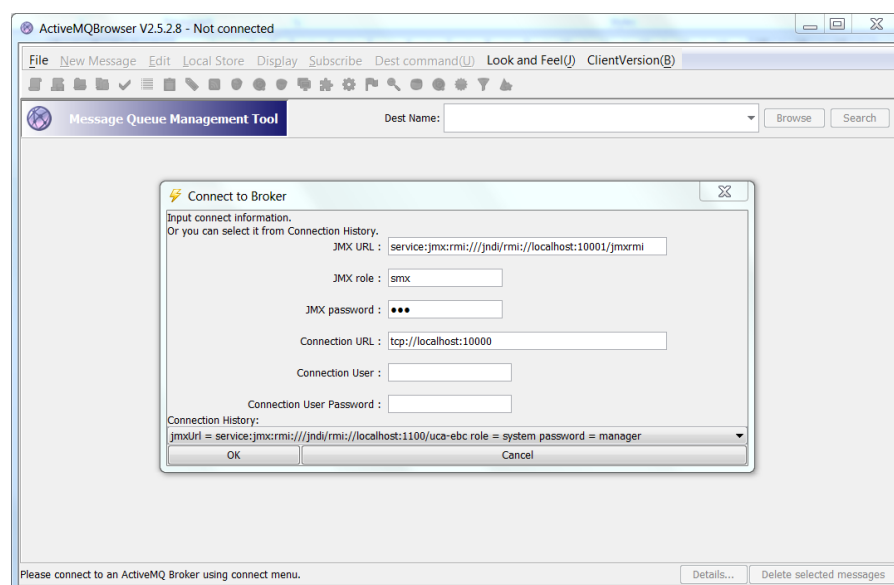


Figure 40 – Apache ActiveMQBrowser “Connect to Broker” window

In the “Connect to Broker” window, you need to use the following credentials for connecting to the ActiveMQ Broker of the OSS Open Mediation container:

Attribute name	Value
JMX URL	service:jmx:rmi://localhost/jndi/rmi://localhost:10001/jmxrmi
JMX role	smx
JMX password	smx
Connection URL	tcp://localhost:10000
Connection User	
Connection Password	

Table 15 – Apache ActiveMQBrowser credentials to use to connect to an OSS Open Mediation container

In the credentials that you use to connect, please replace **localhost** with the name (or IP address) of the OSS Open Mediation host.

Then you need to subscribe to the following topics:

- *com.hp.uca.ebc.ca.requests*
- *com.hp.uca.ebc.ca.responses*

The following screenshots show how to monitor the *com.hp.uca.ebc.ca.responses* topic.

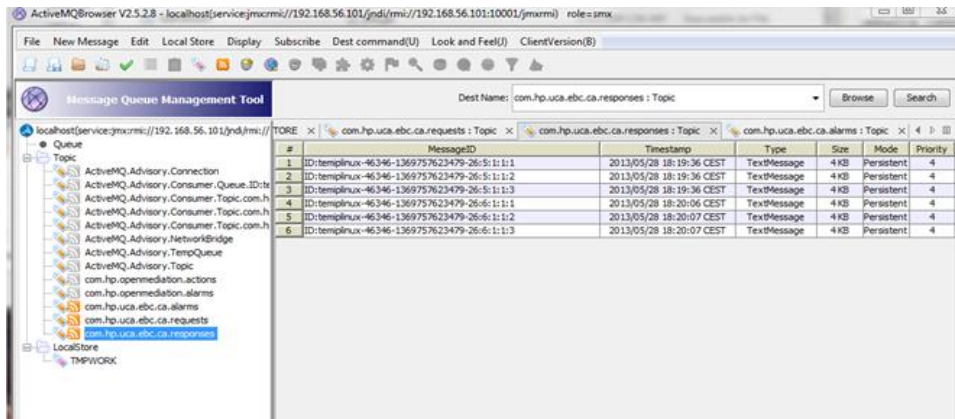


Figure 41 – Using Apache ActiveMQBrowser to list action responses

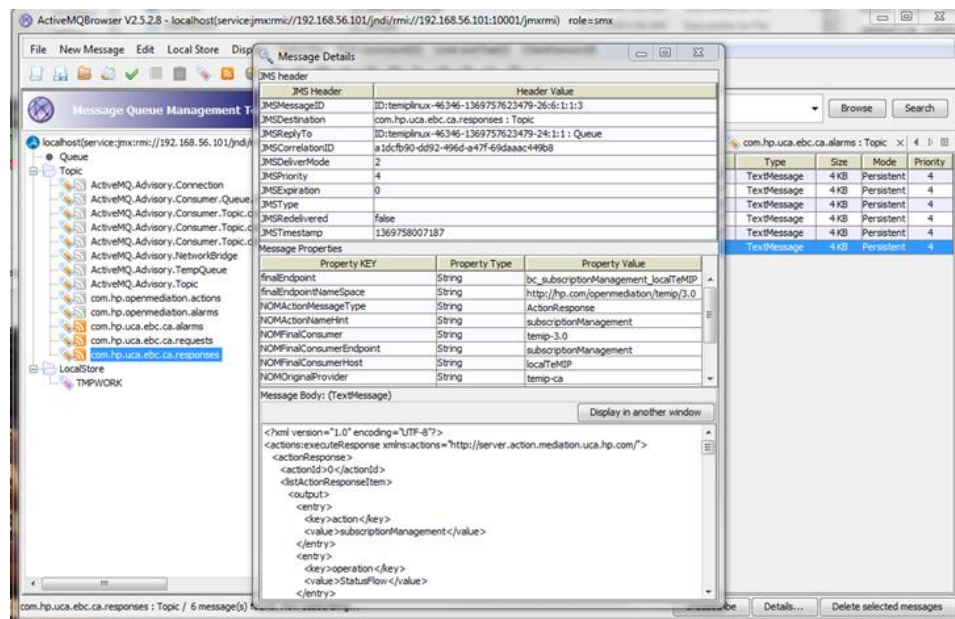


Figure 42 – Using Apache ActiveMQBrowser to display an action response

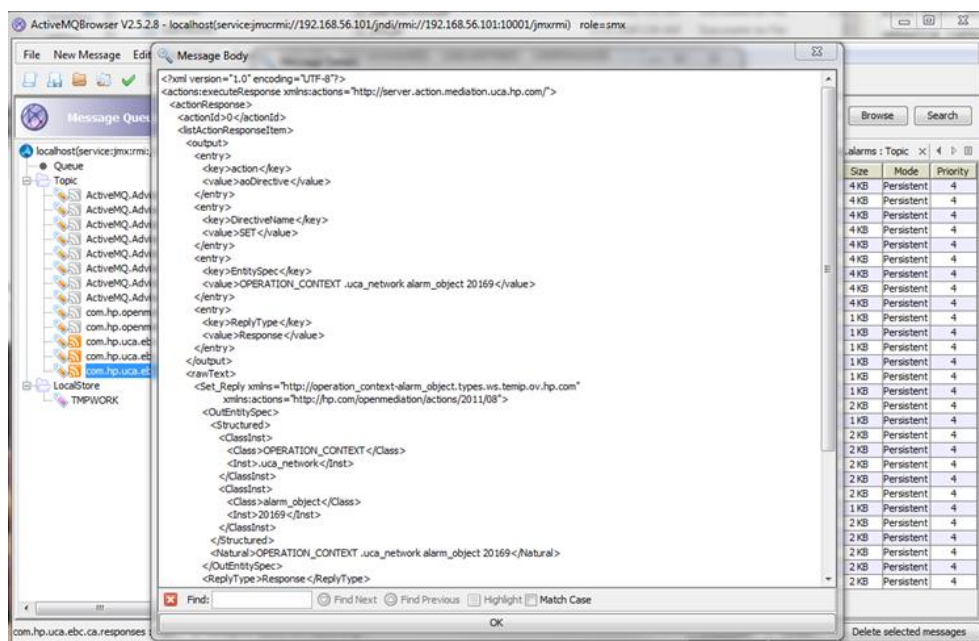


Figure 43 – Using Apache ActiveMQBrowser to display an action response message body

5.2.3 TeMIP Channel Adapter

To trace **AO Directives, TT Directives or any Directive**:

- Edit the `actions-to-temip-jms-connector.xml` file in the `/var/opt/openmediation-71/containers/instance-0/ips/temip-ca-21/etc/` folder
- Replace `<route id="temip-ca-actions-to-temip" trace="false">` with `<route id="temip-ca-actions-to-temip" trace="true">`

To trace **alarms from TeMIP**:

- Edit the `alarms-from-temip-jms-connector.xml` file in the `/var/opt/openmediation-71/containers/instance-0/ips/temip-ca-21/etc/` folder
- Replace `<route id="temip-ca-alarms-from-temip" trace="false">` with `<route id="temip-ca-alarms-from-temip" trace="true">`

To trace **AO notifications flow management**:

- Edit the `utaf-bc-jms-connector.xml` file in the `/var/opt/openmediation-71/containers/instance-0/ips/temip-ca-21/etc/` folder
- Replace `<route id="temip-ca-utaf-bc-jms-connector" trace="false">` with `<route id="temip-ca-utaf-bc-jms-connector" trace="true">`

To trace **alarms resynchronizations**:

- Edit the `actions-from-temip-camel.xml` file in the `/var/opt/openmediation-71/containers/instance-0/ips/temip-ca-21/etc/` folder
- Replace `<route id="temip-ca-actions-from-temip" trace="false">` with `<route id="temip-ca-actions-from-temip" trace="true">`

To trace **alarms to TeMIP**:

- Edit the `alarms-to-temip-jms-connector.xml` file in the `/var/opt/openmediation-71/containers/instance-0/ips/temip-ca-21/etc/` folder
- Replace `<route id="temip-ca-alarms-to-temip">` with `<route id="temip-ca-alarms-to-temip" trace="true">`

If you modified any of the above files, you will need to re-deploy the TeMIP Channel Adapter using the following commands to apply the modifications:

```
> /opt/openmediation-71/bin/nom_admin --undeploy-ip-in-  
container temip-ca-21  
> /opt/openmediation-71/bin/nom_admin --deploy-ip-in-  
container temip-ca-21
```

Glossary

UCA: Unified Correlation Analyzer

EBC: Event Based Correlation

IP: Installation Package for OSS Open Mediation

JDK: Java Development Kit

JMS: Java Messaging Service

JMX: Java Management eXtension, used to access or process action on the UCA for EBC product

JNDI: Java Naming and Directory Interface

JRE: Java Runtime Environment

Inference Engine: Process that uses a Rete algorithm

DRL: Drools Rule file

XML: Extensible Markup Language

XSD: Schema of an XML file, describing its structure

X733: Standard describing the structure of an Alarm used in telecommunication environment