How to Configure and Execute User Defined Message Search

Applicable Releases:
SAP NetWeaver Process Integration 7.3x and higher

Topic Area:
SOA Middleware

Capability:
SOA Management

Version 1.0
April 2012
## Document History

<table>
<thead>
<tr>
<th>Document Version</th>
<th>Description</th>
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<tr>
<td>1.00</td>
<td>First official release of this guide</td>
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## Typographic Conventions

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<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation</td>
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<td>Emphasized words or phrases in body text, graphic titles, and table titles</td>
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<td><strong>Example Text</strong></td>
<td>File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
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## Icons

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1. **Introduction**

User Defined Message Search enables to search for asynchronous messages using the information available in payload or adapter-specific message attributes. Payload search is integrated in local message monitoring of both Integration engine and Adapter Engine. Payload fields are extracted during message processing and are stored in an index table for the messages that meets the filter criteria which is described in detail in section 3.

Index are archived together with message, Indexed fields can also be displayed in message based alerts. User defined attributes are displayed for each message if it is configured. Using User defined message search, messages can be searched for one attribute or for more than one attribute.

2. **Business scenario**

Material master details are transferred from SAP ERP System to a legacy system using Process Integration.

![Business Scenario](image)

Figure 1: Business Scenario

At a later point of time, user wants to check a message status or the contents of a message processed earlier with a particular material number in payload.

This can be achieved using the user defined message search feature available in Process Integration.

![User Defined Message Search Process flow Diagram](image)

Figure 2: User Defined Message Search Process flow Diagram
3. **Prerequisites**

2.1 **Roles**
Users should have assigned to one of Process Integration monitoring roles, for more information about roles check [Monitoring Roles](#).

2.2 **Software**
SAP NetWeaver PI 7.3 Java Only Installation or
SAP NetWeaver PI 7.3 (ABAP + Java) Installation or higher is installed.

2.3 **Objects**
An asynchronous scenario in working condition with all the required objects created in Enterprise Service Repository and configured in Integration Directory.

2.4 **Relevant SAP Notes**
1424832- Include User-Defined Search Attributes in XI Alerts
1247043- Release Restrictions for EHP 1 for SAP NetWeaver PI 7.1

4. **Configuration Overview**
User Defined Message Search can be configured locally on each component:

- NWA for Adapter Engine
- SAPGui for Integration engine

**Steps to configure UDMS in IE and AE:**

4.1 **Define Filters**
Filters are created by specifying Service Interface, Sender and Receiver details to search messages.

4.2 **Define Search Criteria**
For each filter, search criteria have to be created by specifying which elements of the payload or the dynamic header to be searched.

There are two types available here to choose:

- XPath
  
  This type of Search Criteria uses an XPath expression to search for attributes in the main payload of a message
  
- Dynamic Header
This type of extractor searches for adapter-specific message attributes. These are identified by interface name and namespace.

4.3 Define Namespace prefixes

For each filter, namespace prefix has to be defined instead of specifying a namespace in XPath expressions. It can be used for all search criteria of type XPath for this filter.

4.4 Index Messages

Choose Indexing Options to create an index of the messages that match the active filters and search criteria. This index is used to find messages in the message monitor with a user-defined search. Start and end date of the period for which messages should be indexed are specified here. After the indexing starts, you can check whether the indexing job has been completed using the Indexing Status button.

4.5 Test Search Criteria

To test if a search criteria can locate a particular message as intended.

5. Configuration steps in Integration Engine

To configure UDMS for messages processed on Integration Engine, Logon to Integration Engine client of PI and go to Transaction ‘SXMS_LMS_CONF’.

Figure 3: Open Tn. SXMS_LMS_CONF

5.1 Define Filters

Choose Add in the Filter section and specify the required selection criteria like Interface, Sender Component and Receiver Component.
Choose continue then the new filter appears in the filter list.

Note: Filter can be activated only if the search criteria are defined for this filter.

5.2 Define Search Criteria

Search criteria have to be created for each filter.

To create Search Criteria, proceed as follows:

1. In the filter list, double-click the filter for which Search criteria have to be defined.
2. Specify the XPath expression for the field to be used for searching messages.

3. Message indexing happens based on the following methods selected here.
   - **Extract During Message Processing**
     Select this method if the attributes to be extracted from the selected messages when the messages are processed.
   - **Extract with External Job**
     Select this method to extract attributes from messages that were already processed, or if there is any change in attributes of search criteria of extracted message. For this method, Execute report ‘SXMS_EXTRACT_MESSAGES’.

4. Choose Continue. Then new search criteria will appear in the list of search criterias for the selected filter.

   Note: The Search Criteria is only active if at least one of the two available methods is selected.

### 5.3 Defining Namespace Prefixes

Choose add and specify the Prefix for the namespace.

![Figure 6: Define Namespace Prefix](image)

Choose Continue. Then the new namespace prefix will appear in the list of namespace prefixes for the selected filter.

### 5.4 Test Search Criteria

Click on Test Search Criteria and Enter Message id of already processed message for this filter.

![Figure 7: Test Search Criteria](image)

Choose Continue to test if search criteria extracts attributes from a particular message as intended.
Then Extractor Log will be displayed with the values found for the attributes of filter.

![Display Extraction Log](image)

**Figure 8: Display Extraction Log**

### 6. Execution in Integration Engine

The message monitoring for messages processed on Integration Engine can be accessed in transaction SXI_MONITOR.

![Open Tn. SXI_MONITOR](image)

**Figure 9: Open Tn. SXI_MONITOR**

#### 6.1 Search for one attribute

Open the tab User-Defined Selection Criteria and using input help enter one relevant UDMS selection criteria.
How To Configure and Execute User Defined Message Search

Click on Execute. List of messages satisfies the selection criteria are listed.

Select the message and click on ‘Attributes’ to see the User-defined Attributes.
6.2 Search for multiple attribute

Using input help enter one or more relevant UDMS selection criteria in ‘User-Defined Selection Criteria’ tab.

Click on Execute. List of messages satisfies the selection criteria are listed.

Select the message and click on ‘Attributes’ to see the User-defined Attributes.
6.3 Search messages with wildcard

Using input help choose attribute name and enter value with wildcard ‘*’ if part of the value is known. Then click on Execute. List of messages satisfies the selection criteria will be listed.

![Monitor for Processed XML Messages]

**Figure 15: Maintain User Defined selection Criteria for attribute with widcard**

Select the message and click on ‘Attributes’ to see the User-defined Attributes.

![Monitor for Processed XML Messages]

**Figure 16: Display User Defined Attributes**
7. Configuration steps in Adapter Engine

User defined message search configuration page for Adapter Engine can be accessed by either of the following:

Open a browser and go to http://[host]:[port]/nwa to access SAP NetWeaver Administrator. Then choose SOA Monitoring -> PI Adapter -> User-Defined Message Search.

(Or)

Open a browser and go to http://[host]:[port]/dir to access the Process Integration tools.

Then choose -> Configuration and Administration -> Adapter Engine -> User-Defined Search Configuration.

![Process Integration Tools Page](image)

**Figure 17: Process Integration Tools Page**

![Open User Defined Search configuration Page](image)

**Figure 18: Open User Defined Search configuration Page**
### 7.1 Create Filters

1. Click on new button to create a new filter
2. Specify the sender, receiver details. It is mandatory to enter the interface and namespace. When needed, more than one filter can be created for the same interface.
3. Set the status of the filter to Active.

![Create Filter](image)

**Figure 19: Create Filter**

4. Choose Add and then Save.

### 7.2 Define Search Criteria

1. Select the filter for which search criteria has to be defined and choose the Search Criteria tab.
2. Choose New to create new search criteria.
3. Enter a name and optionally a description.
4. Enter XPath Expression to search for particular attribute in the message payload.
How To Configure and Execute User Defined Message Search

5. Choose Add and then Save.

7.3 Define Namespace Prefixes

1. In the filter list, select the filter for which namespace prefix has to be defined.
2. Choose the Prefixes tab and then choose New.
3. Enter the namespace and the prefix.
4. Choose Add and then Save.
7.4 **Activate Filter**

Click on Activate to activate the filter.

![Activate Filter](image22.png)

**Figure 22: Activate Filter**

7.5 **Index Messages**

1. Choose Indexing Options to create an index of the messages that match the active filters and search criteria.
2. Specify the start and end date of the period for which messages should be indexed.
3. Then click on start indexing.

![Index Messages](image23.png)

**Figure 23: Index Messages**

After starting index, Indexing status can be used to check the status of indexing job whether it is completed or running.
### 7.6 Test Search Criteria

Choose Test Search Criteria, enter the ID of the message, specify the direction of the message, and run the test.

### 8. Execution in Adapter Engine

The message monitoring for messages processed on Adapter Engine can be accessed either via the NetWeaver Administrator (NWA) or via the Monitoring Home page.


(Or)

Option 2: On the Monitoring Home page, switch to tab Adapter Engine below tab Monitoring, and select link Message Monitoring.

In the NWA Message Monitoring go to the tab “Database” and click on “Advanced” search section.
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**Figure 25:** Choose Advanced in message monitor page

Choose User defined Search criteria. To add search criteria, choose Add Pre-defined or Add Custom. The first option allows to choose an interface and one of its search criteria. The second option allows to simply enter the name of a search criteria.

**8.1 Search for one attribute**

Choose Add Predefined and enter the values for the attributes defined.

**Figure 26:** Add a predefined Search Criteria with Value
Then click on ‘go’ to search messages.

Select the message and open User Defined Attributes tab to check Attributes and its values.

![List of messages displayed](image)

**Figure 27: List of messages displayed**

![Display User defined attributes](image)

**Figure 28: Display User defined attributes**
8.2 Search for more attribute

Add one or more attributes with values and choose search for all values in menu.

The system searches for all messages that have all of the corresponding message parts with the specified values.

Check tab User-Defined Attributes for the attributes and its values.
9. Appendix

9.1 Help Documentation
Configuring the User-Defined Message Search in Integration engine.

Configuring the User-Defined Message Search in Adapter engine.
http://help.sap.com/saphelp_nw73/helpdata/en/48/b2e0186b156ff4e10000000a42189b/content.htm
www.sdn.sap.com/irj/SDN/howtoguides