HP Operations Orchestration Software

Software Version: 9.00

HP Service Manager Integration Guide

Document Release Date: June 2010

Software Release Date: June 2010

Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

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.

Copyright Notices

Trademark Notices

For information on open-source and third-party software acknowledgements, see in the documentation set for this release, Open-Source and Third-Party Software Acknowledgements (3rdPartyOpenNotices.pdf).

On the Web: Finding OO support and documentation

There are two Web sites where you can find support and documentation, including updates to OO Help systems, guides, and tutorials:

- The OO Support site
- BSA Essentials Network

Support

Documentation enhancements are a continual project at Hewlett-Packard Software. You can obtain or update the HP OO documentation set and tutorials at any time from the HP Software Product Manuals Web site. You will need an HP Passport to log in to the Web site.

To obtain HP OO documentation and tutorials

1. Go to the HP Software Product Manuals Web site (http://support.openview.hp.com/selfsolve/manuals).
2. Log in with your HP Passport user name and password.

   OR

   If you do not have an HP Passport, click **New users – please register** to create an HP Passport, then return to this page and log in.

   If you need help getting an HP Passport, see your HP OO contact.
3. In the **Product** list box, scroll down to and select **Operations Orchestration**.
4. In the **Product Version** list, click the version of the manuals that you're interested in.
5. In the **Operating System** list, click the relevant operating system.
6. Click the **Search** button.
7. In the **Results** list, click the link for the file that you want.

BSA Essentials Network

For support information, including patches, troubleshooting aids, support contract management, product manuals and more, visit the following site: http://www.hp.com/go/bsaessentialsnetwork

This is the **BSA Essentials Network** Web page. To sign in:

1. Click **Login Now**.
2. On the **HP Passport sign-in** page, enter your HP Passport user ID and password and then click **Sign-in**.
3. If you do not already have an HP Passport account, do the following:
   a. On the **HP Passport sign-in** page, click **New user registration**.
   b. On the **HP Passport new user registration** page, enter the required information and then click **Continue**.
   c. On the confirmation page that opens, check your information and then click **Register**.
   d. On the **Terms of Service** page, read the Terms of use and legal restrictions, select the **Agree** button, and then click **Submit**.
4. On the **BSA Essentials Network** page, click **Operations Orchestration Community.**

The Operations Orchestration Community page contains links to announcements, discussions, downloads, documentation, help, and support.

Note: Contact your OO contact if you have any difficulties with this process.

In OO: How to find Help, PDFs, and tutorials

The HP Operations Orchestration software (HP OO) documentation set is made up of the following:

- Help for Central

  Central Help provides information to the following:

  - Finding and running flows
  - For HP OO administrators, configuring the functioning of HP OO
  - Generating and viewing the information available from the outcomes of flow runs

  The Central Help system is also available as a PDF document in the HP OO home directory, in the \Central\docs subdirectory.

- Help for Studio

  Studio Help instructs flow authors at varying levels of programming ability.

  The Studio Help system is also available as a PDF document in the HP OO home directory, in the \Studio\docs subdirectory.

- Animated tutorials for Central and Studio

  HP OO tutorials can each be completed in less than half an hour and provide basic instruction on the following:

  - In Central, finding, running, and viewing information from flows
  - In Studio, modifying flows

  The tutorials are available in the Central and Studio subdirectories of the HP OO home directory.

- Self-documentation for operations and flows in the Accelerator Packs and ITIL folders

  Self-documentation is available in the descriptions of the operations and steps that are included in the flows.

Table of Contents

Installation and configuration instructions

Service Manager (SM) 7 comes with a default WSDL configuration. Each ticket type (such as change, incident, and problem) has a service associated with it that makes possible the communication between OO and SM. SM operations communicate with three main services: ChangeManagement, IncidentManagement, and ProblemManagement.

Each service has a WSDL that specifies which fields are exposed from the different tables and which actions are allowed to be performed on an SM server. To make sure that SM operations work properly, the server must configure these WSDL files to expose all of the fields needed for the operations.

Each field from an SM operation maps to a field in the Service Manager corresponding WSDL. For example the **Update Change** operation invokes the ChangeManagement service. The operation invokes the action “Update” providing the service with the appropriate field values from the operation’s inputs. As a result, the service calls the appropriate SM processes to update the change, performs the request, and returns a message with a result or an error.

Before running any of the SM operations, we strongly recommend that you make the following configurations on all SM versions as shown in the following sections.

Service Manager 7.00 and 7.01 configurations

Change configuration

For the OO operations that work with changes to execute successfully, you must make sure that Service Manager is properly configured. This can be done in the following steps:

1. In the System Navigator go to **Menu Navigation**, then **Tailoring**, and then **WSDL Configuration**.

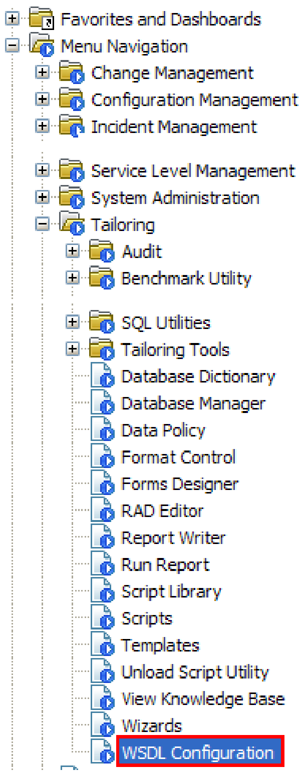


Figure 1 - Location in menu of WSDL Configuration

2. In the **Service Name** field, enter the value **ChangeManagement**, and then click **Search**.

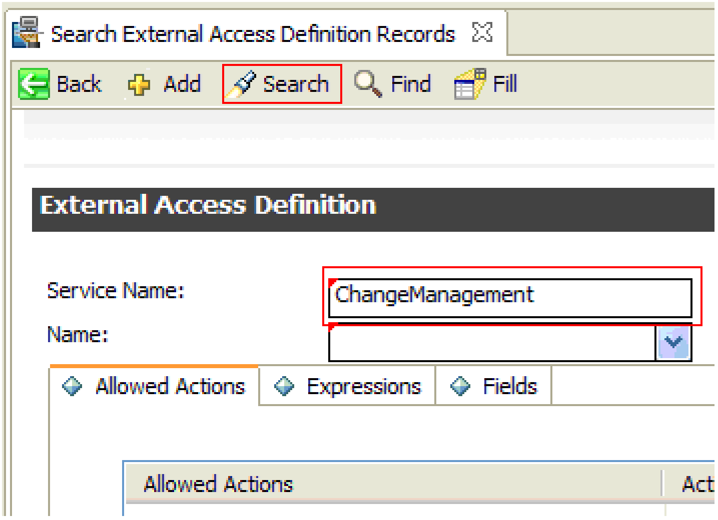


Figure 2 - Search for ChangeManagement

3. In the upper part of the window, there is a list of SM objects. If it is not already selected, choose the **Change** object. Now, your screen should look like this:

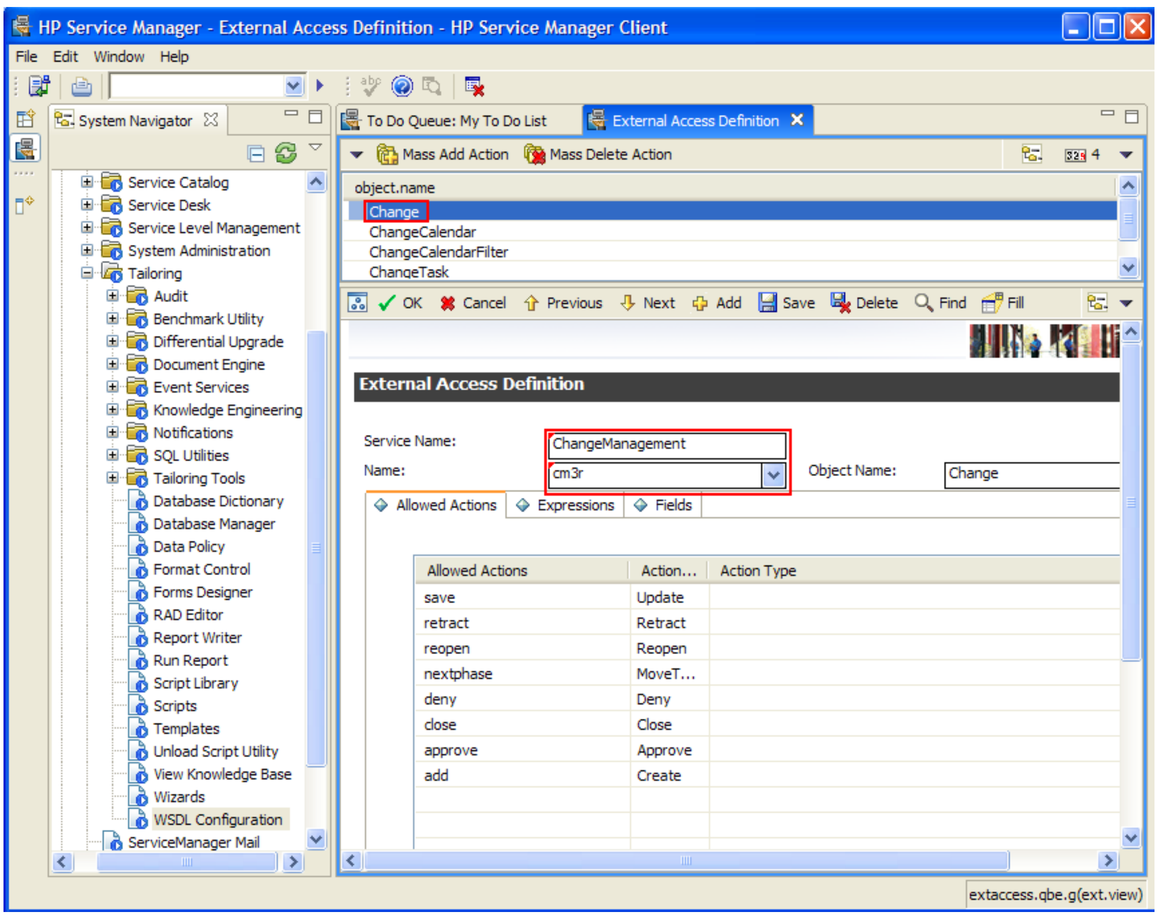


Figure 3 - Change External Access Definition

4. Look on the **Allowed Actions** tab and check that the available actions are EXACTLY as in the following image. If not, you can add a new action by simply writing in the empty fields.

Allowed Actions	Action Names	Action Type
add	Create	
approve	Approve	
close	Close	
deny	Deny	
nextphase	MoveToNextPhase	
reopen	Reopen	
retract	Retract	
save	Update	

Figure 4 - Change actions

5. Look on the **Fields** tab and check that the available fields are EXACTLY as in the following image. If not, you can add a new field by writing in the empty fields or change an existing one by retyping the field value.

Field	Caption	Type
close,closing.comments	ClosingComments	
close,completion.code	CompletionCode	
description.structure,backout.method	BackoutMethod	
description.structure,description	Description	
description.structure,justification	Justification	
header,agreement.id	SLAAgreementID	IntType
header,approval.status	ApprovalStatus	
header,assigned.to	AssignedTo	
header,backout.duration	BackoutDuration	DurationType
header,brief.description	BriefDescription	
header,category	Category	
header,close.time	CloseTime	DateTimeType
header,company	Company	
header,coord.phone	CoordinatorPhone	
header,coordinator	Coordinator	
header,current.phase	CurrentPhase	
header,date.entered	DateEntered	DateTimeType
header,foreign.id	ForeignID	
header,number	ChangeNumber	
header,open	Open	BooleanType
header,planned.end	PlannedEndDate	DateTimeType
header,planned.start	PlannedStartDate	DateTimeType
header,priority.code	Priority	
header,reason	Reason	
header,requested.by	RequestedBy	
header,risk.assessment	RiskAssessment	
header,status	Status	
header,subcategory	Subcategory	
header,type.level2	RFCType2	
initial.impact	InitialAssessment	StringType
middle,actual.cost	ActualCost	
middle,actual.outage.end	ActualOutageEnd	DateTimeType
middle,actual.price	ActualPrice	
middle,assets	Assets	
middle,down.end	OutageEnd	DateTimeType
middle,down.start	OutageStart	DateTimeType
middle,estimate.description	EstimateDescription	
middle,estimate.price	EstimatePrice	StringType
middle,location	Location	
middle,logical.name	ConfigurationItem	
middle,misc.array1	MiscArray1	
middle,misc.array2	MiscArray2	
middle,misc.array3	MiscArray3	
middle,misc1	Misc1	
middle,misc10	Misc10	
middle,misc2	Misc2	
middle,misc3	Misc3	
middle,misc4	Misc4	
middle,misc5	Misc5	
middle,misc6	Misc6	
middle,misc7	Misc7	
middle,misc8	Misc8	
middle,misc9	Misc9	
middle,sched.outage.end	ScheduledOutageEnd	DateTimeType
middle,sched.outage.start	ScheduledOutageStart	DateTimeType
severity	Urgency	StringType
release.type	ReleaseType	
header,assign.dept	Department	

Figure 5 - Change fields

6. Click the **Save** button, and then click **OK**.

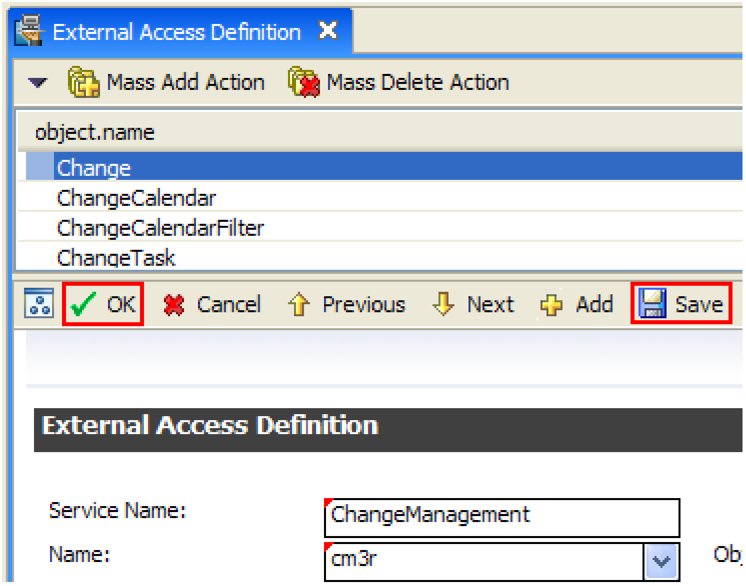


Figure 6 - Save changes

Incident configuration

For the OO operations that work with incidents to execute successfully, you must make sure that Service Manager is properly configured. This can be done in the following steps:

1. In the System Navigator go to **Menu Navigation**, then **Tailoring**, and then **WSDL Configuration**.

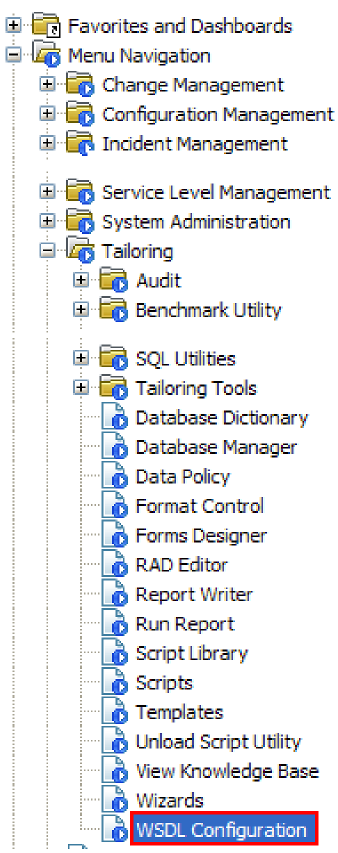


Figure 7 - Location in menu of WSDL Configuration

2. In the **Service Name** field, enter the value **IncidentManagement** and then click **Search**.

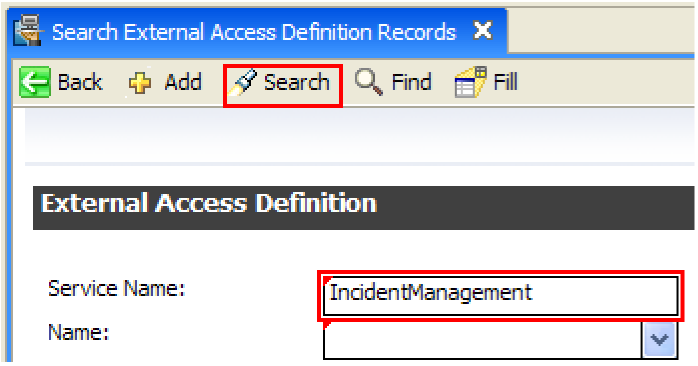


Figure 8 - Search for IncidentManagement

3. Now, your screen should look like this:

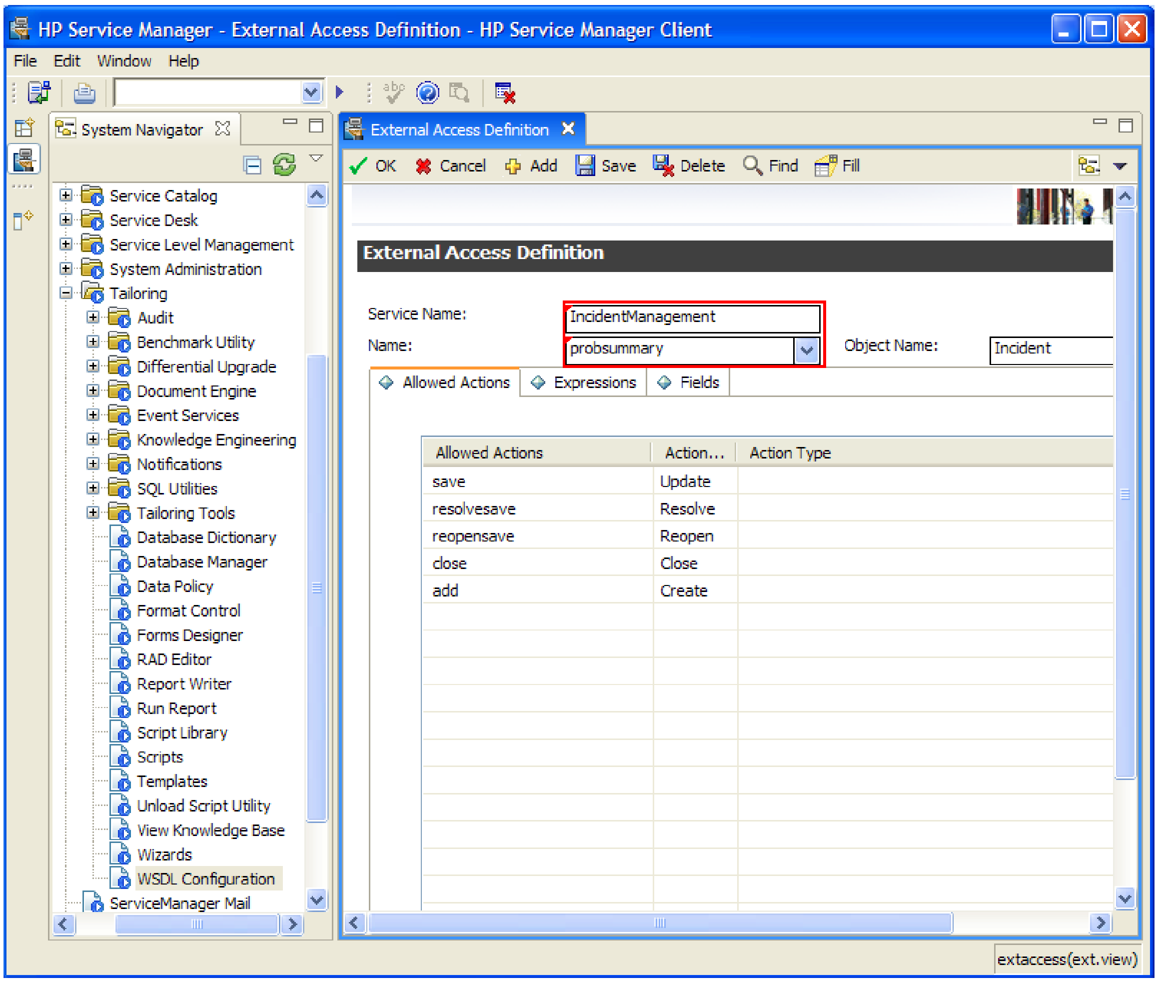


Figure 9 - Incident External Access Definition

4. Look on the **Allowed Actions** tab and check that the available actions are EXACTLY as in the following image. If not, you can add a new action by simply writing in the empty fields.

Allowed Actions	Action Names	Action Type
save	Update	
resolvesave	Resolve	
reopensave	Reopen	
close	Close	
add	Create	

Figure 10 - Incident actions

5. Look on the **Fields** tab and check that the available fields are EXACTLY as in the following image. If not, you can add a new field by writing in the empty fields or change an existing one by retyping the field value.

Field	Caption	Type
action	IncidentDescription	
agreement.id	SLAAgreementID	
status	AlertStatus	
assignee.name	AssigneeName	
assignment	PrimaryAssignmentGroup	
brief.description	BriefDescription	
category	Category	
close.time	ClosedTime	DateTimeType
closed.by	ClosedBy	
company	Company	
contact.name	Contact	
explanation	Solution	
first.name	ContactFirstName	
fix.type	ResolutionFixType	
folder		
initial.impact	InitialImpact	
last.name	ContactLastName	
location	Location	
logical.name	ConfigurationItem	
number	IncidentID	
open.time	OpenTime	DateTimeType
opened.by	OpenedBy	
problem.status	IMTicketStatus	
problem.type	ProblemType	
product.type	ProductType	
resolution	Resolution	
resolution.code	ClosureCode	
severity		
site.category	SiteCategory	
subcategory	Subcategory	
ticket.owner	TicketOwner	
update.action	JournalUpdates	
update.time	UpdatedTime	DateTimeType
updated.by	UpdatedBy	
user.priority	UserPriority	

Figure 11 - Incident fields

6. Click the **Save** button, and then **OK**.

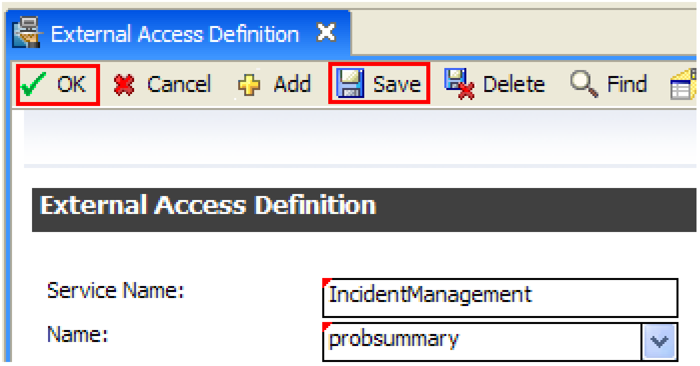


Figure 12 - Save changes

Problem configuration

For the OO operations that work with problems to execute successfully, you must make sure that Service Manager is properly configured. This can be done in the following steps:

1. In the System Navigator go to **Menu Navigation**, then **Tailoring**, and then **WSDL Configuration**.

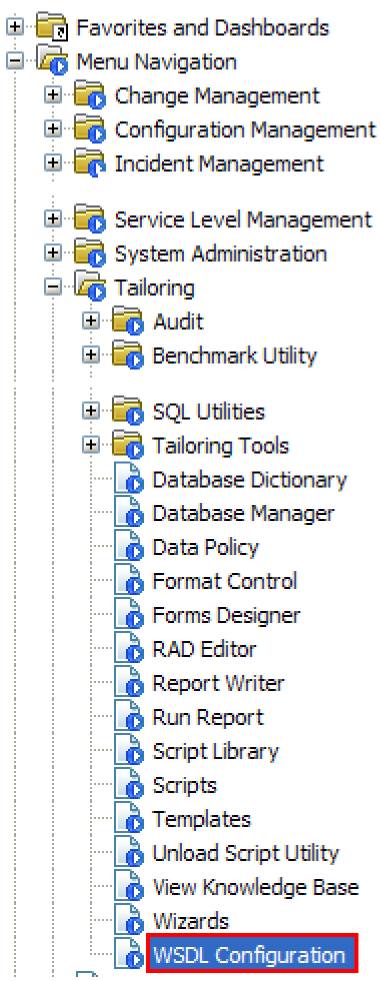


Figure 13 - Location in menu of WSDL Configuration

2. In the **Service Name** field, input the value **ProblemManagement**, and then click **Search**.

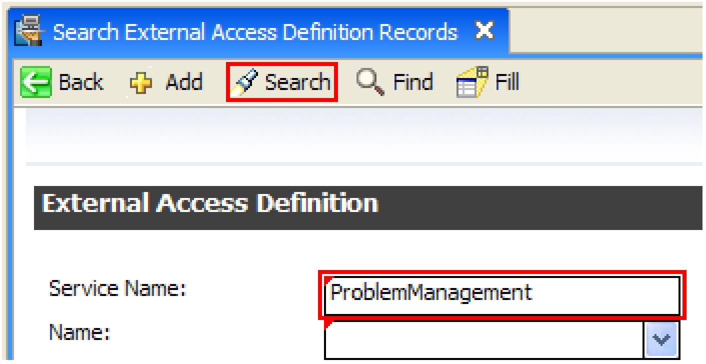


Figure 14 - Search for ProblemManagement

3. Now, your screen should look like this:

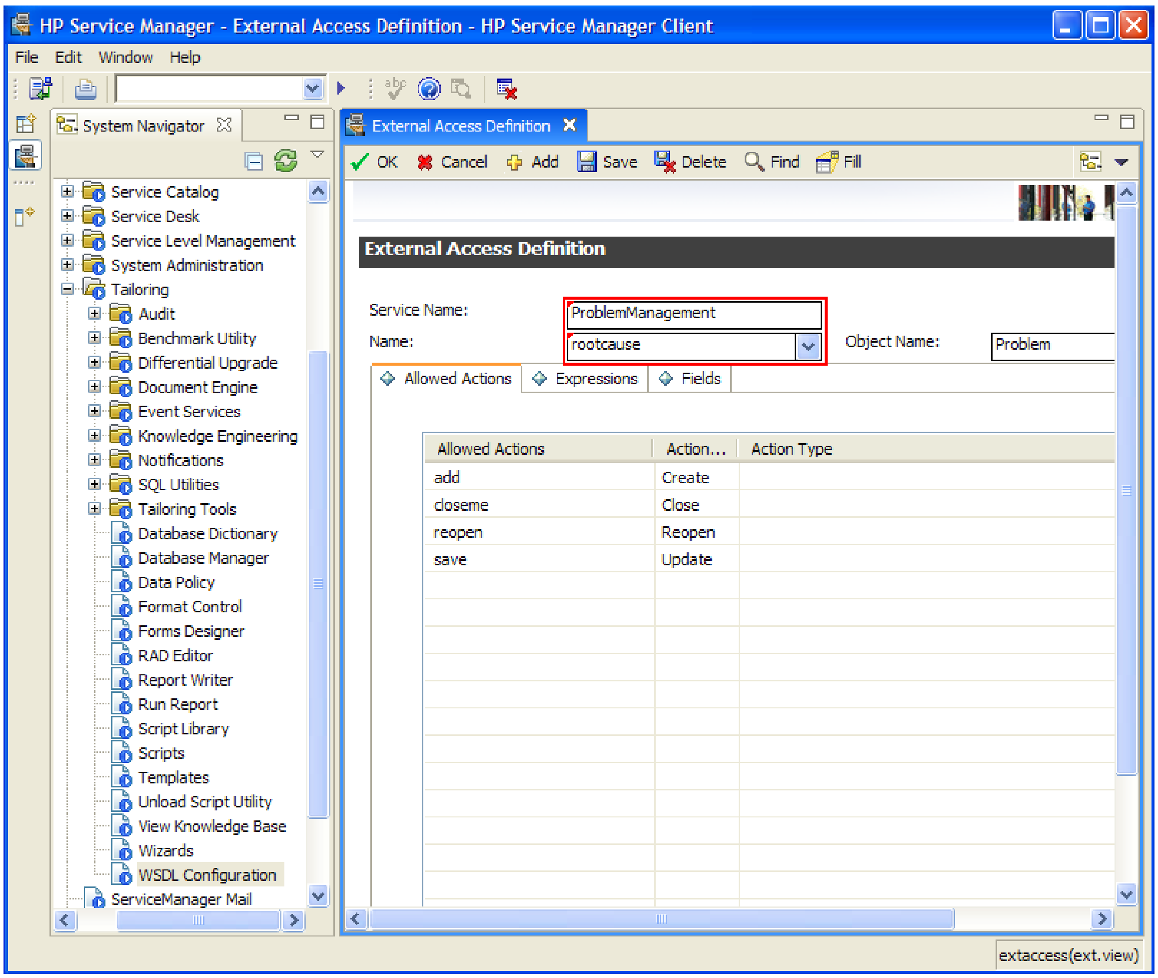


Figure 15 - Problem External Access Definition

4. Look on the **Allowed Actions** tab and check that the available actions are EXACTLY as in the following image. If not, you can add a new action by simply writing in the empty fields.

Allowed Actions	Action Names	Action Type
add	Create	
closeme	Close	
reopen	Reopen	
save	Update	

Figure 16 - Problem actions

5. Look on the **Fields** tab and check that the available fields are EXACTLY as in the following image. If not, you can add a new field by writing in the empty fields or change an existing one by retyping the field value.

Field	Caption	Type
folder		
assignee.name	Assignee	
brief.description	BriefDescription	
description	Description	
id	ProblemNumber	StringType
close.time	ClosedTime	DateTimeType
closed.by	ClosedBy	
assignment	PrimaryAssignmentGroup	StringType
open.time	OpenTime	DateTimeType
opened.by	OpenedBy	
initial.impact	InitialImpact	
logical.name	ConfigurationItem	
severity	Severity	
updated.by	UpdatedBy	
update.time	UpdateTime	DateTimeType
agreement.id	SLAAgreementID	
ticket.owner	TicketOwner	
problem.type	ProblemType	
product.type	ProductType	
reopen.time	ReopenTime	DateTimeType
reopened.by	ReopenedBy	
category	ProblemCategory	
subcategory	Subcategory	
current.phase	CurrentPhase	
company	Company	
incident.category	Category	
update	Update	
status	Status	

Figure 17 - Problem fields

6. Look on the **Expression** tab and search for the expression:

```
if (not same(update in $L.file, update in $L.file.save)) then
($G.bg.activity.type="External Update";$G.bg.activity.text=update
in $L.file;update in $L.file=update in $L.file.save)
```

Add it if you can't find it there.

7. Click the **Save** button, and then **OK**.

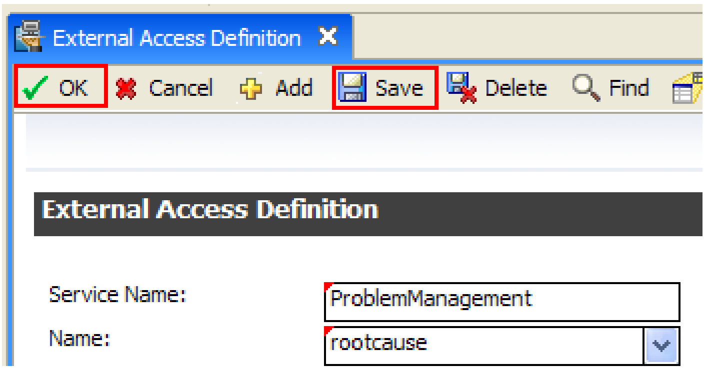


Figure 18 - Save changes

Service Manager 7.10 and 7.11 configurations

Change configuration

For the OO operations that work with changes to execute successfully, you must make sure that Service Manager is properly configured. This can be done in the following steps:

1. In the System Navigator go to **Menu Navigation**, then **Tailoring**, then **Web Services**, and then **WSDL Configuration**.

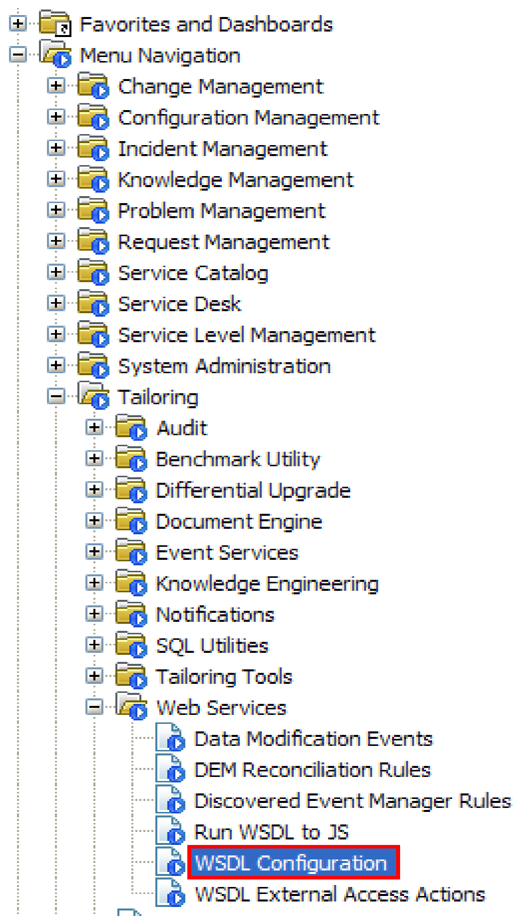


Figure 19 - Location in menu of WSDL Configuration

2. In the **Object Name** field, input the value **Change**, and then click **Search**.

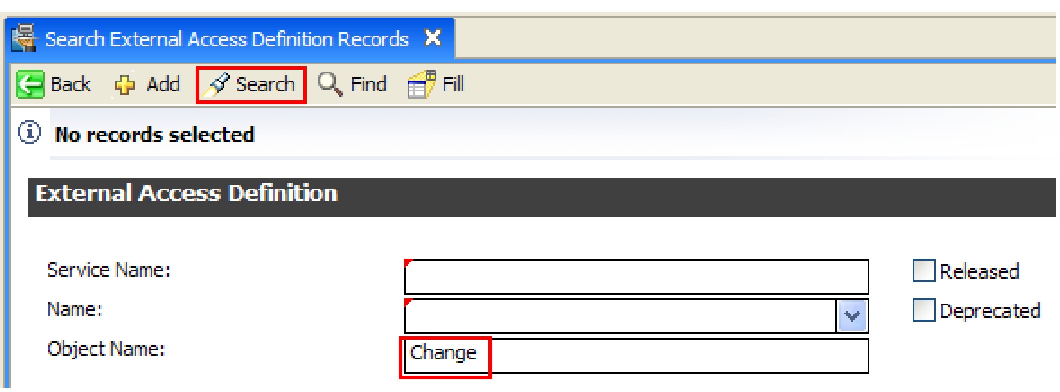


Figure 20 - Search for Change External Access Definition

3. On the upper side of the window, you can see a list of SM objects. If it's not already selected, choose the **Change** object. Now, your screen should look like this:

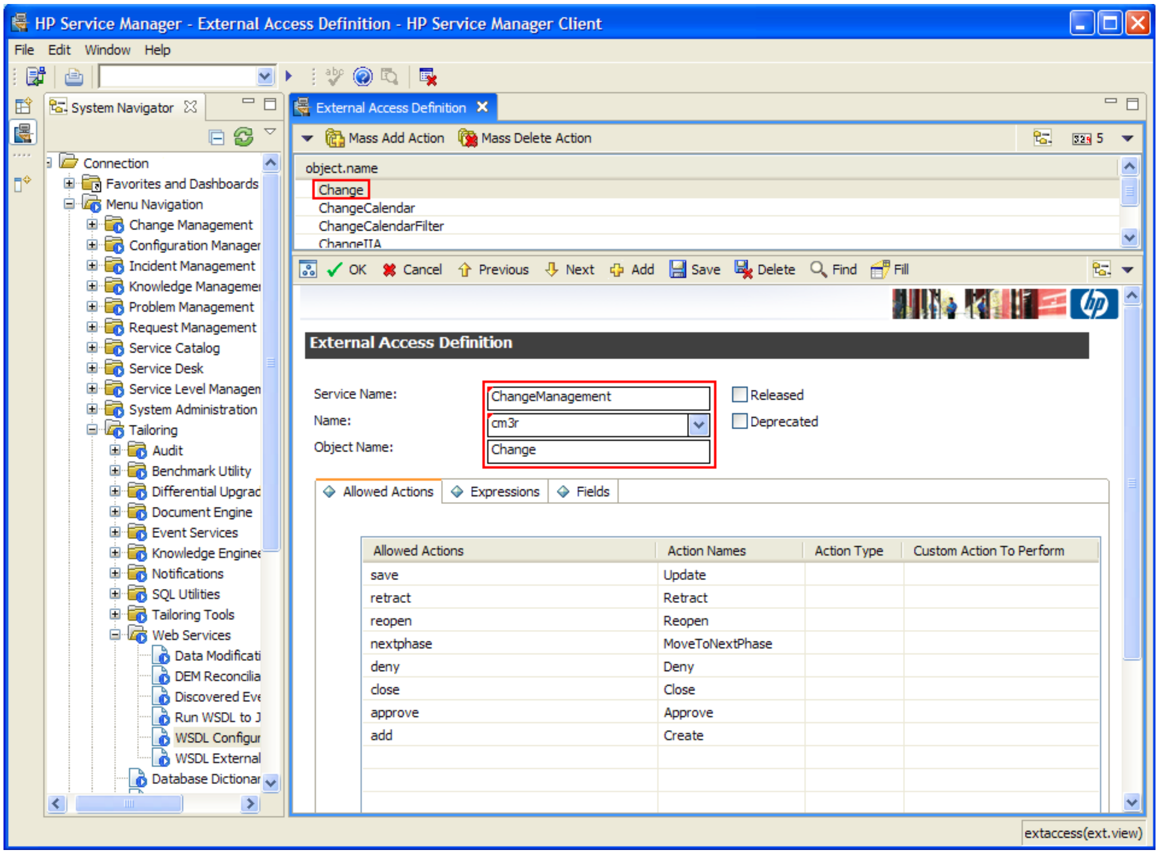
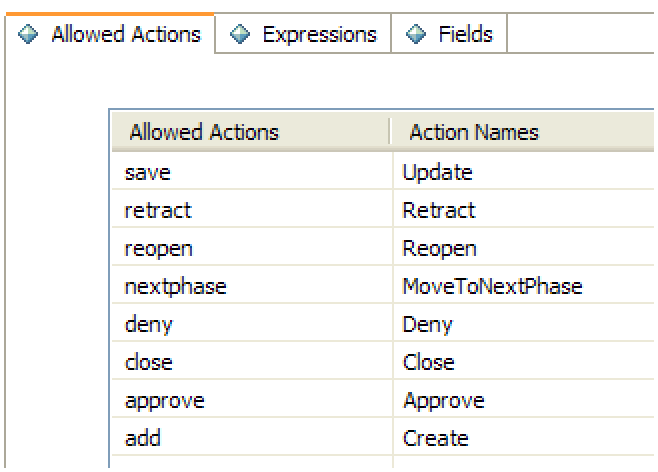


Figure 21 - Change External Access Definition

4. Look on the **Allowed Actions** tab and check that the available actions are EXACTLY as in the following image. If not, you can add a new action by simply writing in the empty fields.



Allowed Actions	Action Names
save	Update
retract	Retract
reopen	Reopen
nextphase	MoveToNextPhase
deny	Deny
close	Close
approve	Approve
add	Create

Figure 22 - Change actions

5. Look on the **Fields** tab and check that the available fields are EXACTLY as in the following image. If not, you can add a new field by writing in the empty fields or change an existing one by retyping the field value.

Allowed Actions | Expressions | Fields

Field	Caption	Type
close,closing.comments	ClosingComments	
close,completion.code	CompletionCode	
description.structure,backout.method	BackoutMethod	
description.structure,description	Description	
description.structure,justification	Justification	
header,agreement.id	SLAAgreementID	IntType
header,approval.status	ApprovalStatus	
header,assigned.to	AssignedTo	
header,backout.duration	BackoutDuration	DurationType
header,brief.description	BriefDescription	
header,category	Category	
header,close.time	CloseTime	DateTimeType
header,company	Company	
header,coord.phone	CoordinatorPhone	
header,coordinator	Coordinator	
header,current.phase	CurrentPhase	
header,date.entered	DateEntered	DateTimeType
header,foreign.id	ForeignID	
header,number	ChangeNumber	
header,open	Open	BooleanType
header,planned.end	PlannedEndDate	DateTimeType
header,planned.start	PlannedStartDate	DateTimeType
header,priority.code	Priority	
header,reason	Reason	
header,requested.by	RequestedBy	
header,risk.assessment	RiskAssessment	
header,status	Status	
header,subcategory	Subcategory	
header,type.level2	RFCType2	
initial.impact	InitialAssessment	StringType
middle,actual.cost	ActualCost	
middle,actual.outage.end	ActualOutageEnd	DateTimeType
middle,actual.outage.start	ActualOutageStart	DateTimeType
middle,actual.price	ActualPrice	
middle,assets	Assets	
middle,down.end	OutageEnd	DateTimeType
middle,down.start	OutageStart	DateTimeType
middle,estimate.description	EstimateDescription	
middle,estimate.price	EstimatePrice	StringType

Figure 23 - Change fields

middle,logical.name	ConfigurationItem	
middle,misc.array1	MiscArray1	
middle,misc.array2	MiscArray2	
middle,misc.array3	MiscArray3	
middle,misc1	Misc1	
middle,misc10	Misc10	
middle,misc2	Misc2	
middle,misc3	Misc3	
middle,misc4	Misc4	
middle,misc5	Misc5	
middle,misc6	Misc6	
middle,misc7	Misc7	
middle,misc8	Misc8	
middle,misc9	Misc9	
middle,sched.outage.end	ScheduledOutageEnd	DateTimeType
middle,sched.outage.start	ScheduledOutageStart	DateTimeType
severity	Urgency	StringType
requestedDate	RequestedDate	DateTimeType
releaseCandidate	ReleaseCandidate	BooleanType
emergency	Emergency	BooleanType
closureComments	ClosureComments	
affected.item	Service	
header,assign.dept	AssignmentGroup	
release.type	ReleaseType	
middle,location	Location	
location.full.name	LocationFullName	

Figure 24 - Change fields

6. Click the **Save** button, and then **OK**.

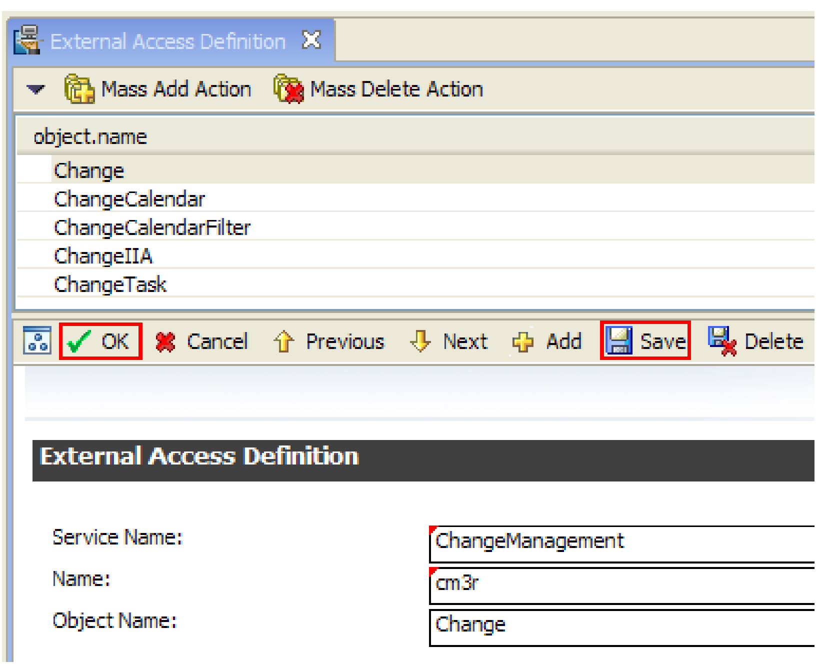


Figure 25 - Save changes

Incident configuration

For the OO operations that work with incidents to execute successfully, you must make sure that Service Manager is properly configured. This can be done in the following steps:

1. In the System Navigator go to **Menu Navigation**, then **Tailoring**, then **Web Services**, and then **WSDL Configuration**.

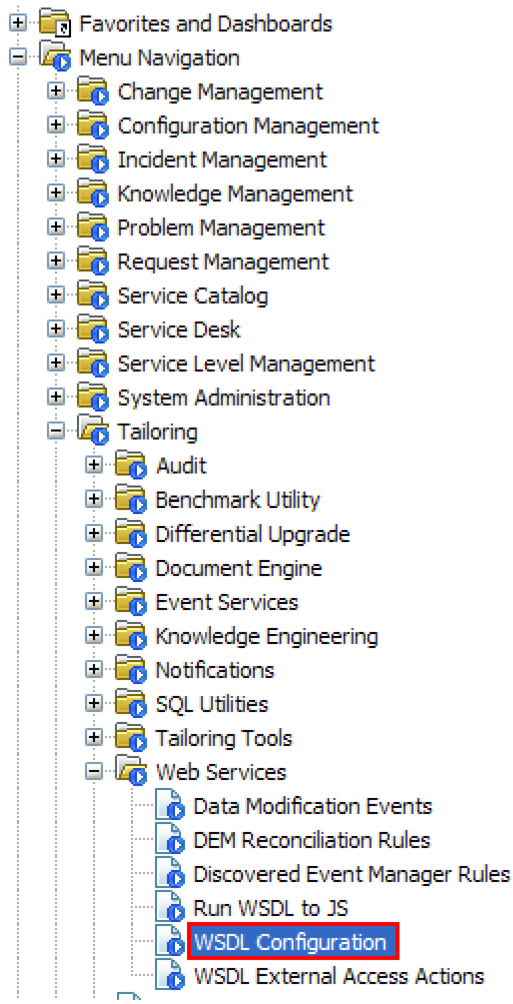


Figure 26 - Location in menu of WSDL Configuration

2. In the **Object Name** field, input the value **Incident**, and then click **Search**.

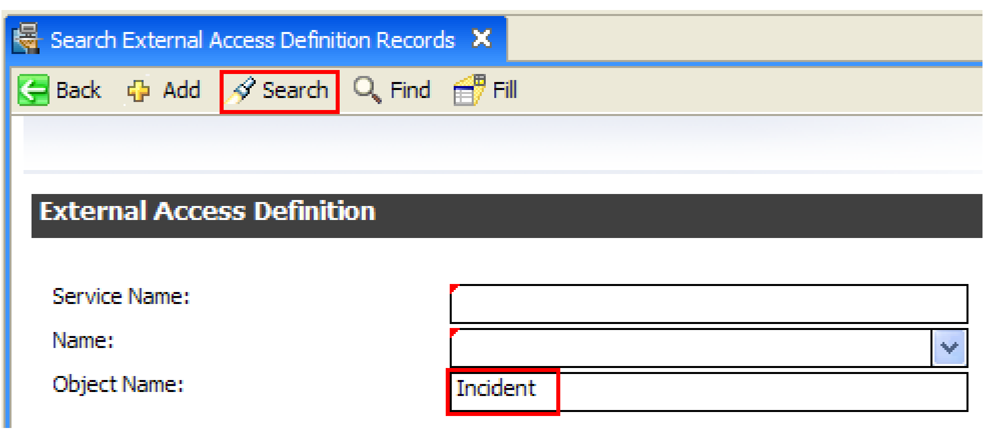


Figure 27 - Search for Incident External Access Definition

3. Now, your screen should look like this:

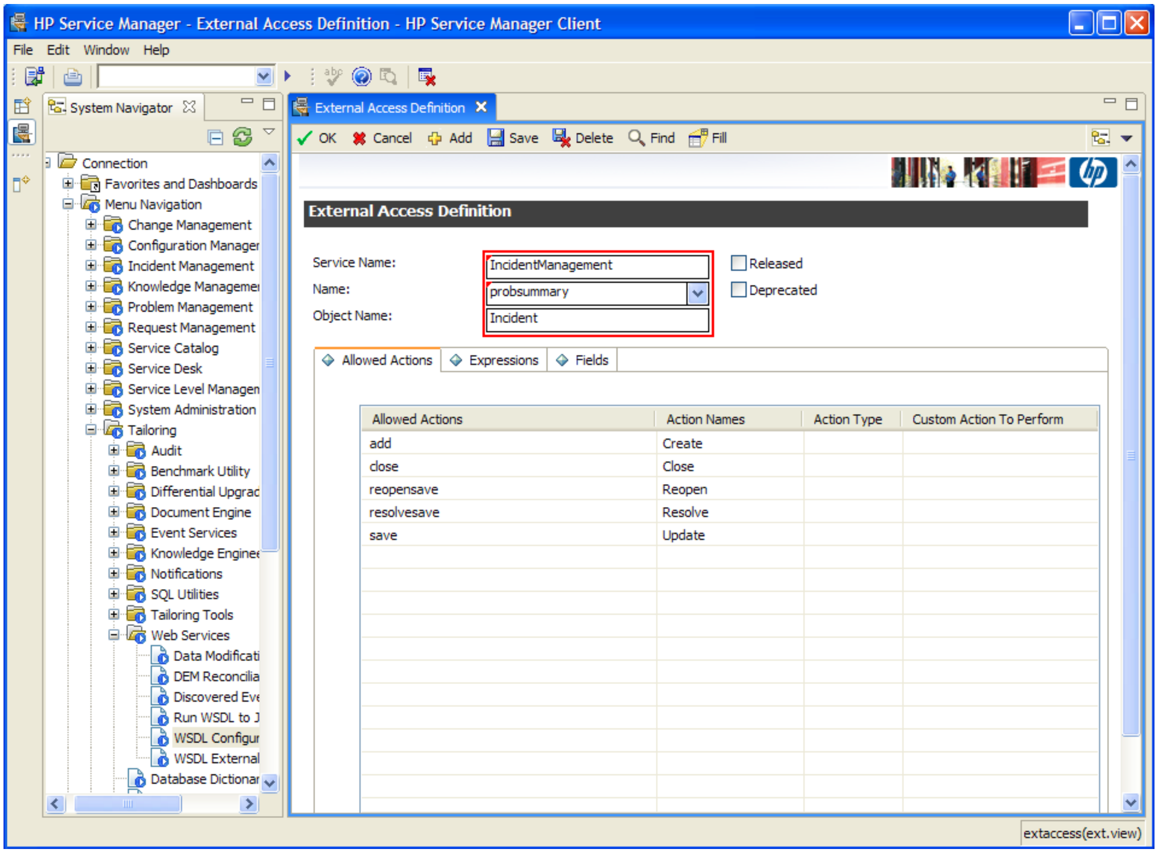


Figure 28 - Incident External Access Definition

4. Look on the **Allowed Actions** tab and check that the available actions are EXACTLY as in the following image. If not, you can add a new action by simply writing in the empty fields.

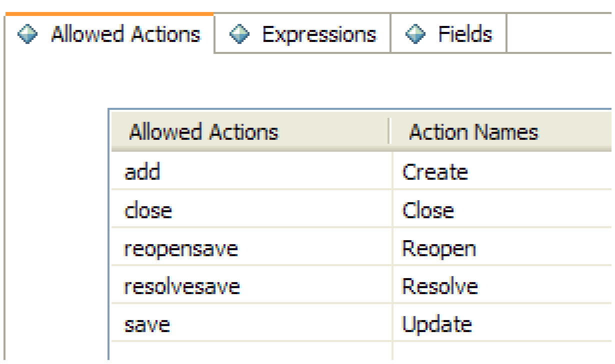


Figure 29 - Incident actions

5. Look on the **Fields** tab and check that the available fields are EXACTLY as in the following image. If not, you can add a new field by writing in the empty fields or change an existing one by retyping the field value.

Allowed Actions | Expressions | Fields

Field	Caption	Type
action	IncidentDescription	
agreement.id	SLAAgreementID	
status	AlertStatus	
assignee.name	AssigneeName	
assignment	PrimaryAssignmentGroup	
brief.description	BriefDescription	
category	Category	
close.time	ClosedTime	DateTimeType
closed.by	ClosedBy	
company	Company	
contact.name	Contact	
explanation	Solution	
first.name	ContactFirstName	
fix.type	ResolutionFixType	
folder		
initial.impact	InitialImpact	
last.name	ContactLastName	
location.full.name	Location	
logical.name	AffectedItem	
number	IncidentID	
open.time	OpenTime	DateTimeType
opened.by	OpenedBy	
problem.status	IMTicketStatus	
problem.type	ProblemType	
product.type	ProductType	
resolution	Resolution	
resolution.code	ClosureCode	
severity		
site.category	SiteCategory	
subcategory	Subcategory	
ticket.owner	TicketOwner	
update.action	JournalUpdates	
update.time	UpdatedTime	DateTimeType
updated.by	UpdatedBy	
user.priority	UserPriority	
affected.item	Service	

Figure 30 - Incident fields

6. Click the **Save** button, and then **OK**.

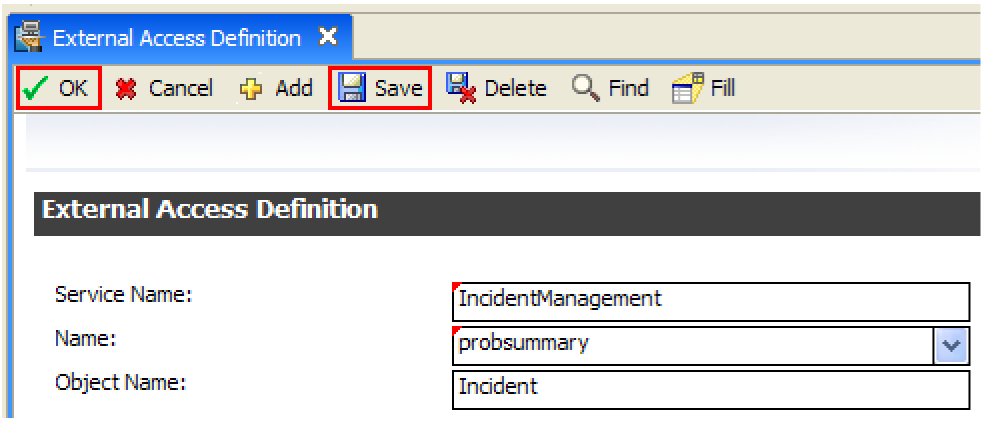


Figure 31 - Save changes

Problem configuration

For the OO operations that work with problems to execute successfully, you must make sure that Service Manager is properly configured. This can be done in the following steps:

1. In the System Navigator go to **Menu Navigation**, then **Tailoring**, then **Web Services**, and then **WSDL Configuration**.

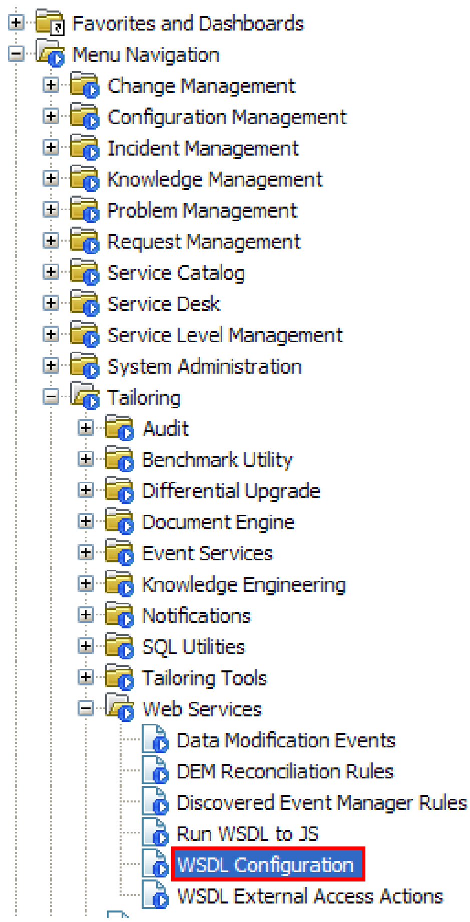


Figure 32 - Location in menu of WSDL Configuration

2. In the **Object Name** field, input the value **Problem**, and then click **Search**.

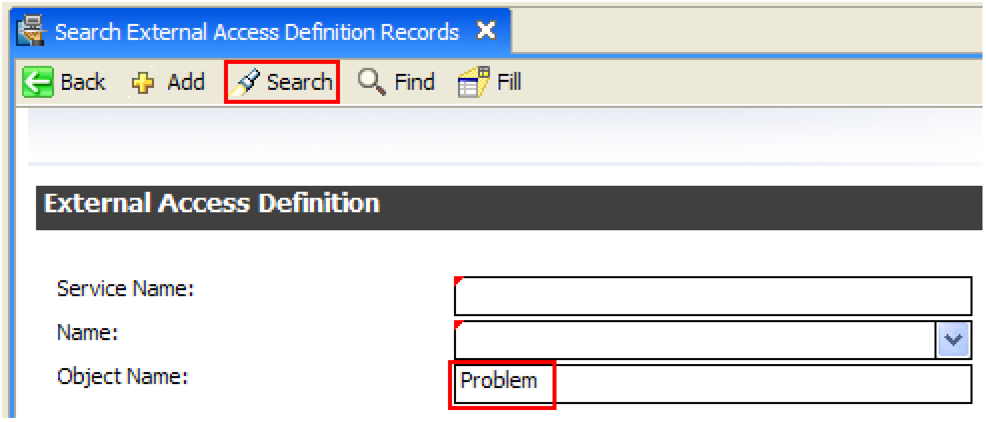


Figure 33 - Search for Problem External Access Definition

3. Now, your screen should look like this:

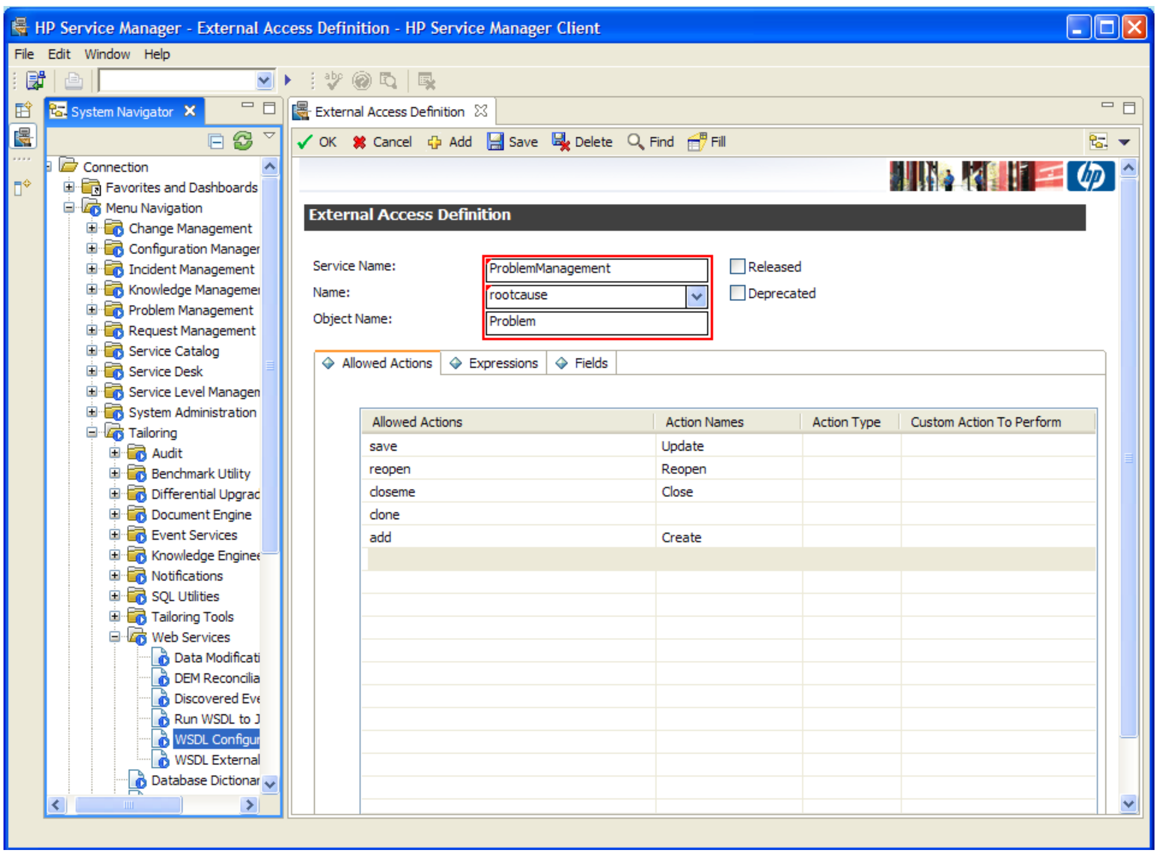


Figure 34 - Problem External Access Definition

4. Look on the **Allowed Actions** tab and check that the available actions are EXACTLY as in the following image. If not, you can add a new action by simply writing in the empty fields.

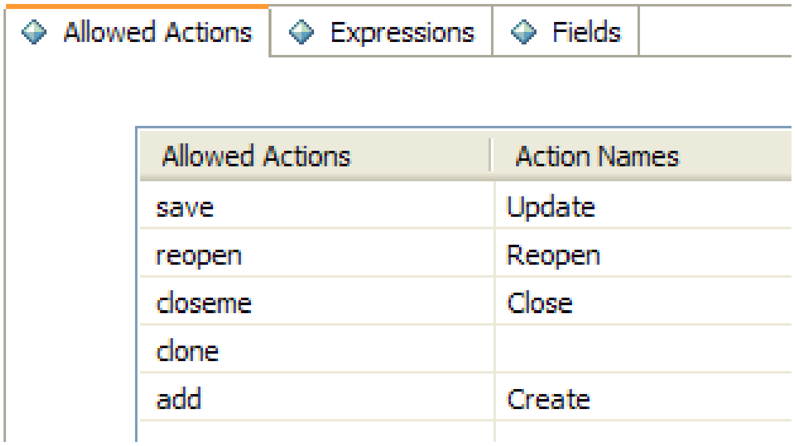


Figure 35 - Problem actions

5. Look on the **Fields** tab and check that the available fields are EXACTLY as in the following image. If not, you can add a new field by writing in the empty fields or change an existing one by retyping the field value.

Allowed Actions | Expressions | Fields

Field	Caption	Type
folder		
assignee.name	Assignee	
category	ProblemCategory	
closed.by	ClosedBy	
description	Description	
brief.description	BriefDescription	
initial.impact	InitialImpact	
close.time	ClosedTime	DateTimeType
assignment	PrimaryAssignmentGroup	StringType
open.time	OpenTime	DateTimeType
opened.by	OpenedBy	
logical.name	ConfigurationItem	
severity	Severity	
updated.by	UpdatedBy	
update.time	UpdateTime	DateTimeType
agreement.id	SLAAgreementID	
ticket.owner	TicketOwner	
problem.type	ProblemType	
product.type	ProductType	
reopen.time	ReopenTime	DateTimeType
reopened.by	ReopenedBy	
subcategory	Subcategory	
current.phase	CurrentPhase	
company	Company	
incident.category	Category	
update	Update	
closure.code	ClosureCode	
affected.item	Service	StringType
rcStatus	Status	

Figure 36 - Problem fields

6. Look on the **Expression** tab and search for the expression:

```
if (not same(update in $L.file, update in $L.file.save)) then
($G.bg.activity.type="External Update";$G.bg.activity.text=update
in $L.file;update in $L.file=update in $L.file.save)
```

   Add it if you can't find it there.

7. Click the **Save** button, and then **OK**.

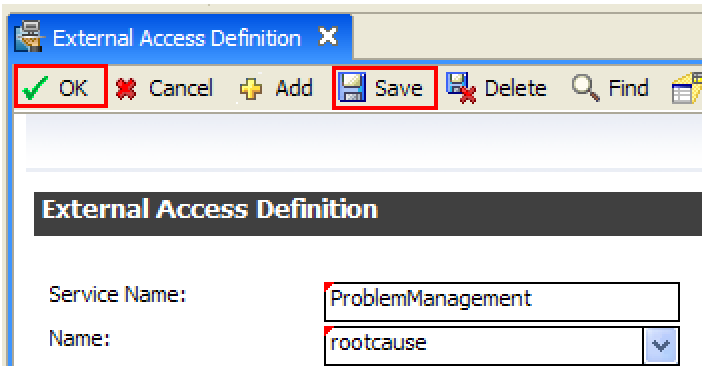


Figure 37 - Save changes

Other configurations on all SM versions

Adding “Change Category Phases” global list

To run the **Get Change Category Phases** operation form OO, you must create a global list on the server. This global list exposes data from Service Manager needed in the OO operation. The global list can be created in the following way:

1. Go to **Menu Navigation**, then **Tailoring**, and then **Tailoring Tools**.
2. Open **Global Lists**.
3. Fill in the window as in the following image.

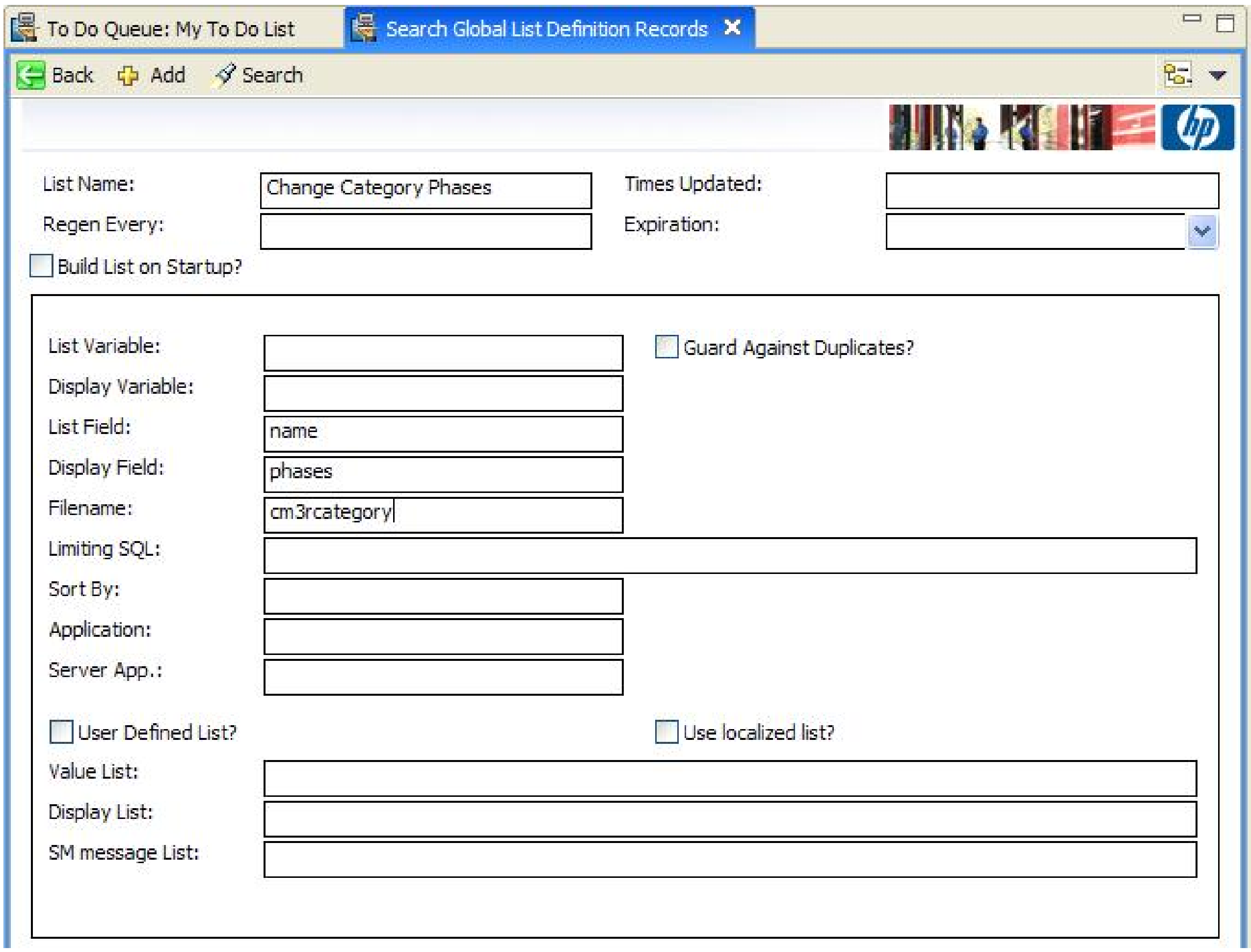


Figure 38 - New Global List values

4. Click the **Add** button.

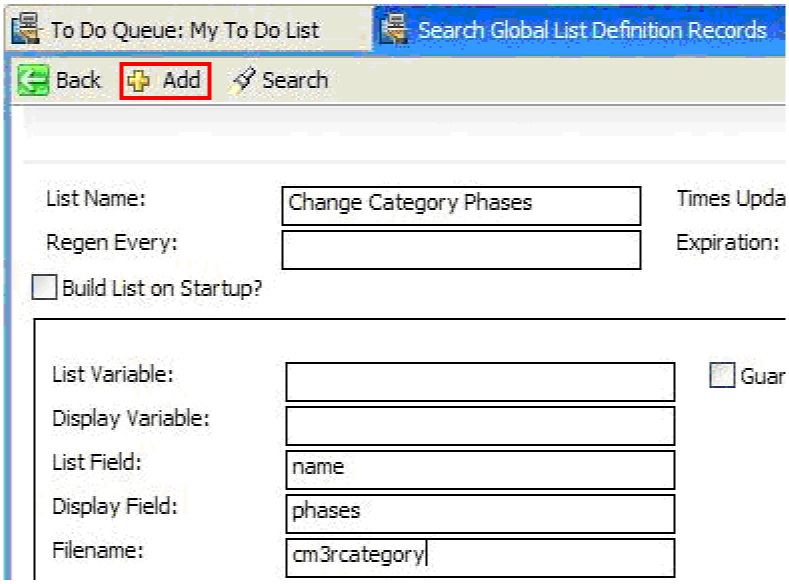


Figure 39 - Add new Global List

5. Make sure that it generates the global list:

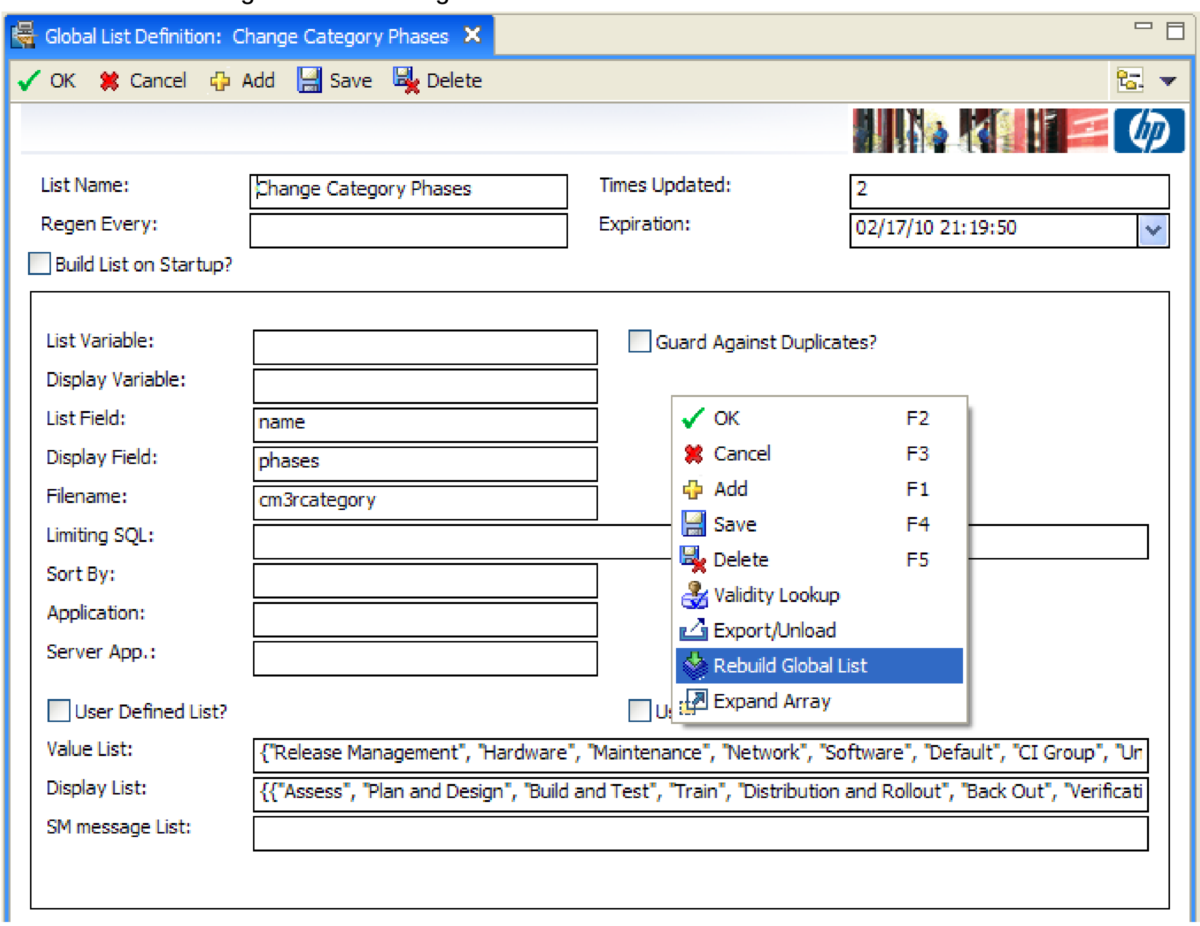


Figure 40 - Build Global List

Adding "Change Subcat" global list

To run the **Get Change Subcategories** operation form OO, you must create a global list on the server. This global list exposes data from Service Manager needed in the OO operation. The global list can be created using the following steps:

1. Go to **Menu Navigation**, then **Tailoring**, and then **Tailoring Tools**.
2. Open **Global Lists**.
3. Fill in the window as in the following image.

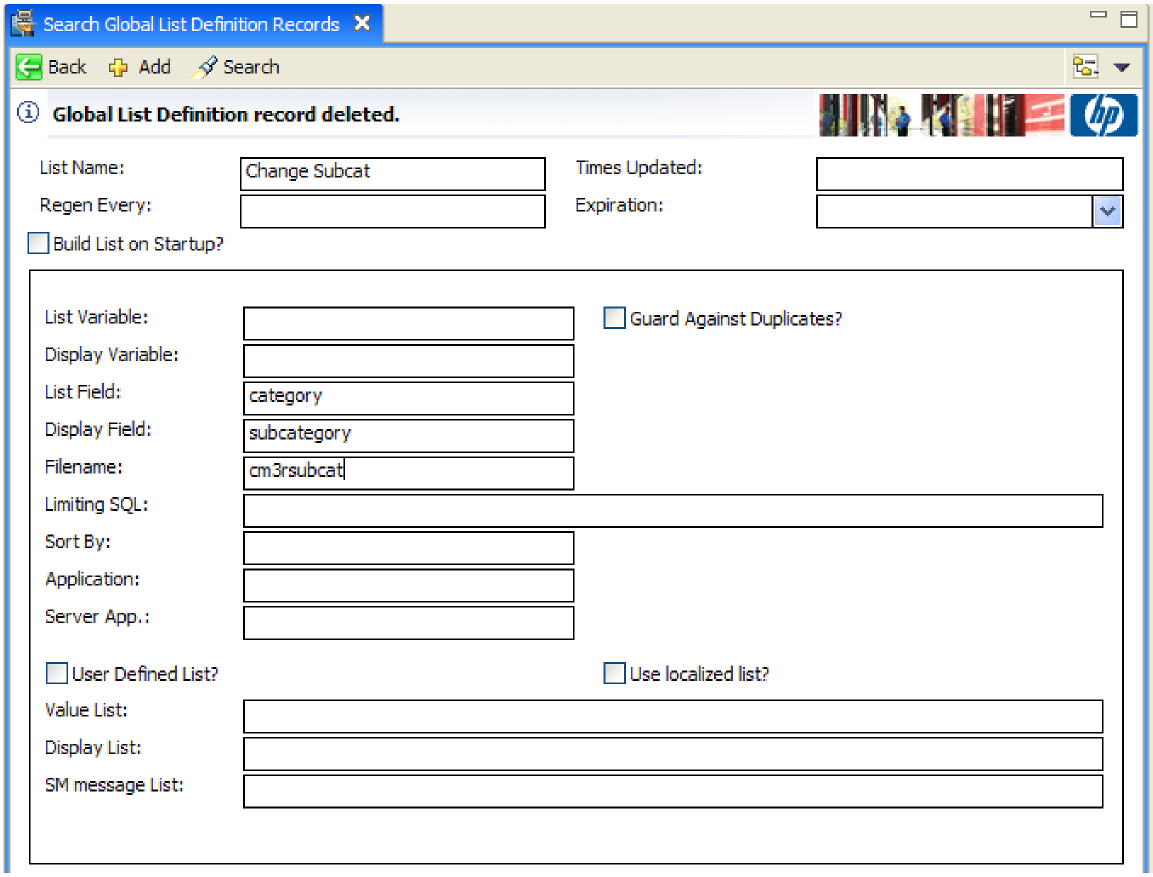


Figure 41 - New Global List values

4. Click the **Add** button.

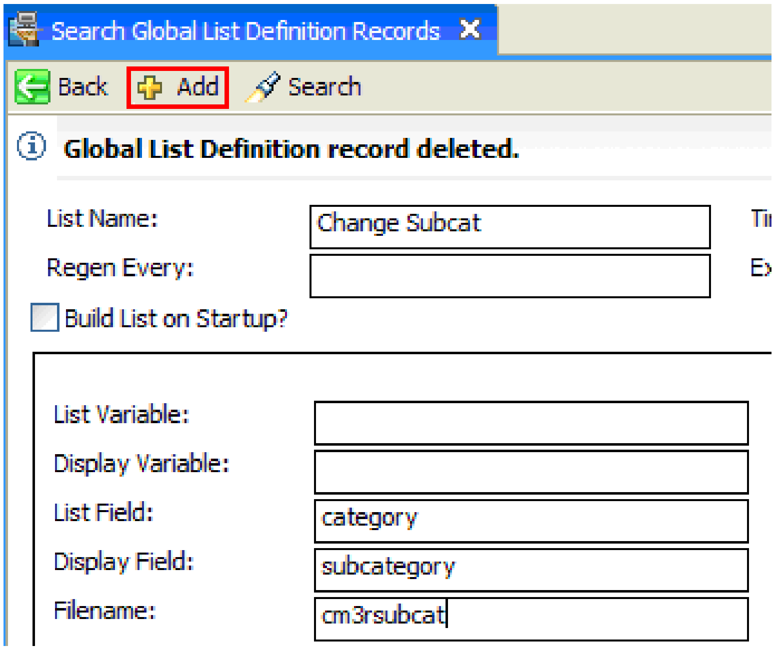


Figure 42 - Add new Global List

5. Make sure you rebuild the global list so it updates its content.

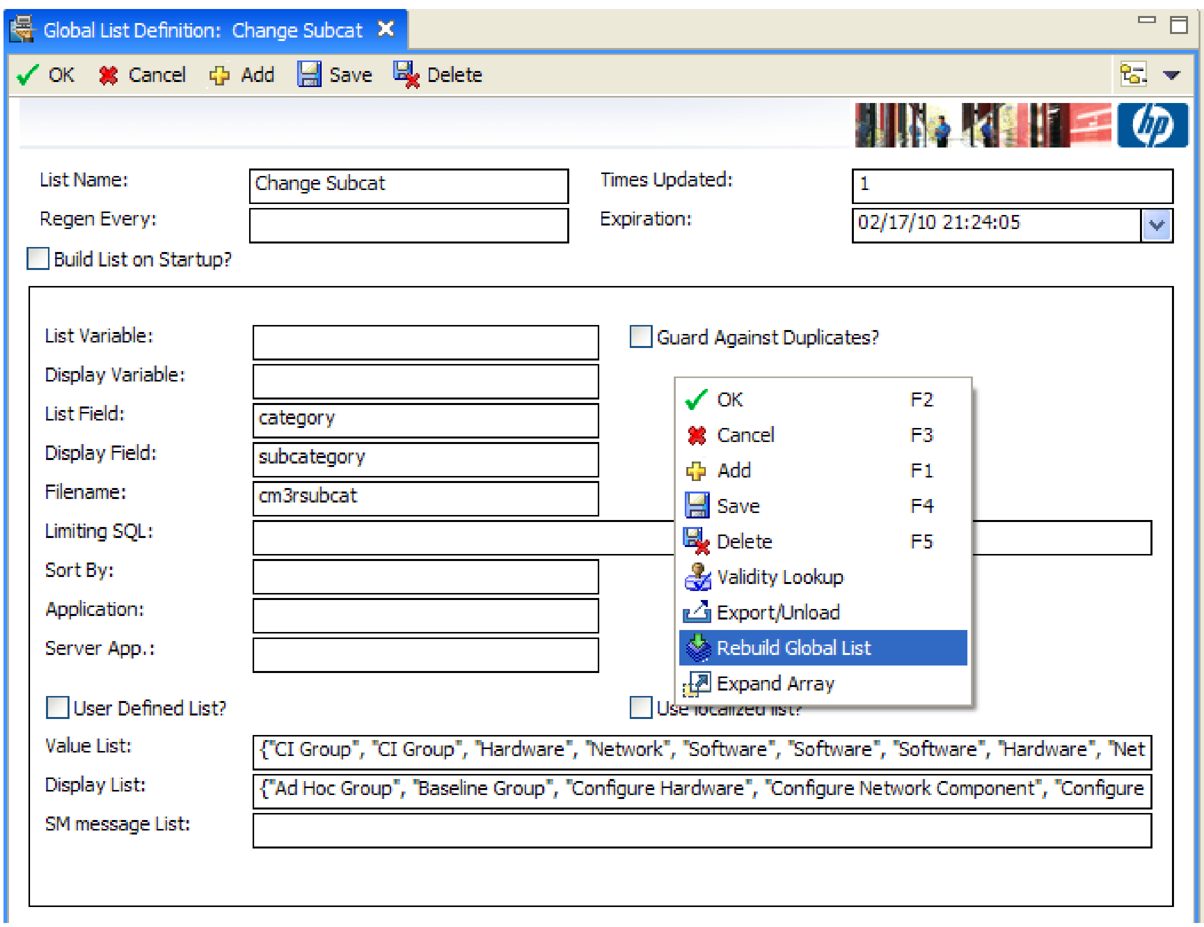


Figure 43 - Build Global List

Adding “Problem and Incident Closure Codes” global list

To run the **GetTicketClosureCodes** operation from OO, you must create a global list on the server. This list makes available to OO the closure codes that can be used in order to close a problem/incident ticket. The global list can be created using the following steps:

1. Go to **Menu Navigation**, then **Tailoring**, then **Tailoring Tools**, and then **Global Lists**.
2. Fill in the form as in the following image (use the same capitalization as in the image!):
   `List Name: Problem and Incident Closure Codes`
   `List Field: cause.code`
   `Display Field: resolution.code`
   `Filename: probcause`

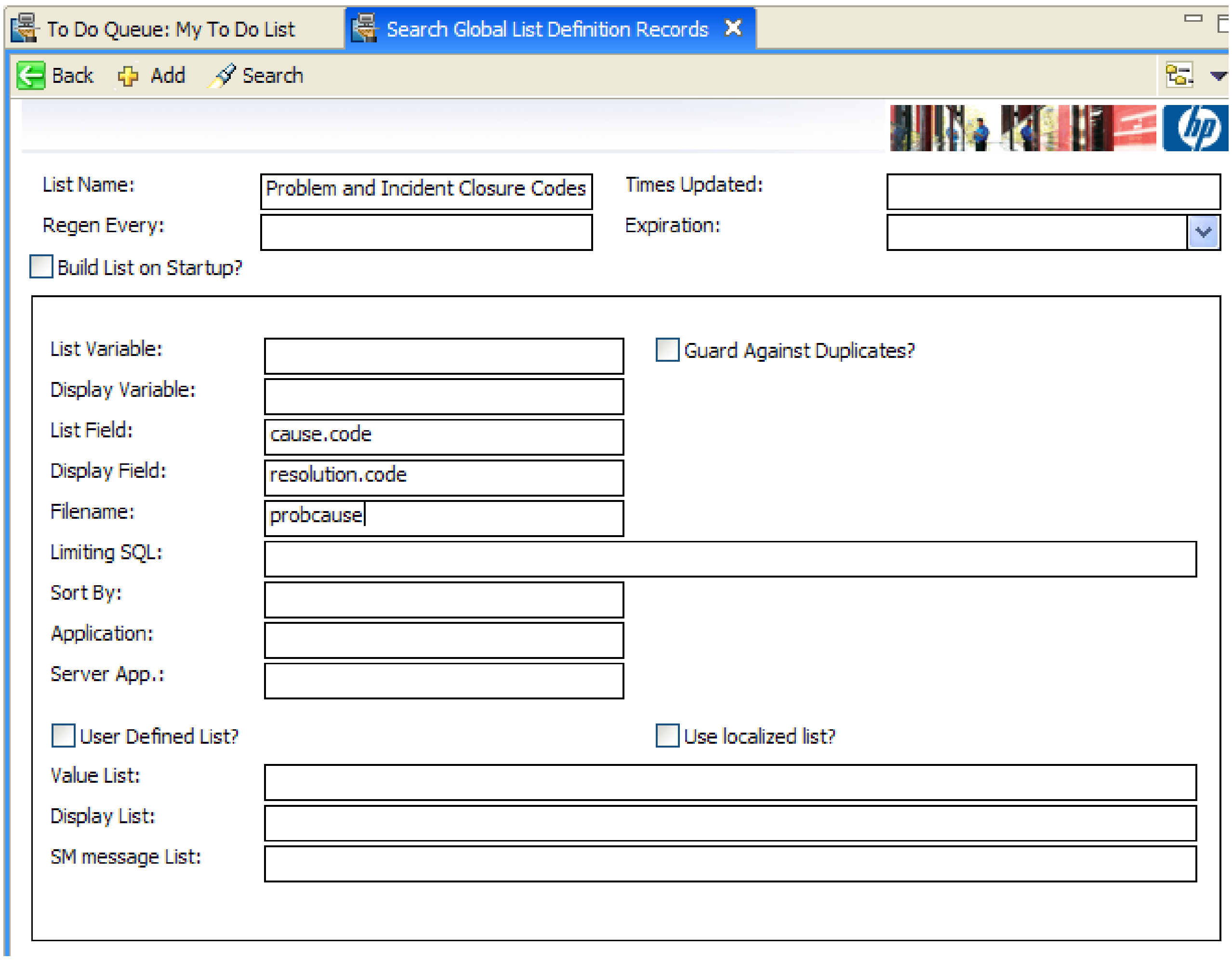


Figure 44- New Global List values

3. Click the **Add** button.

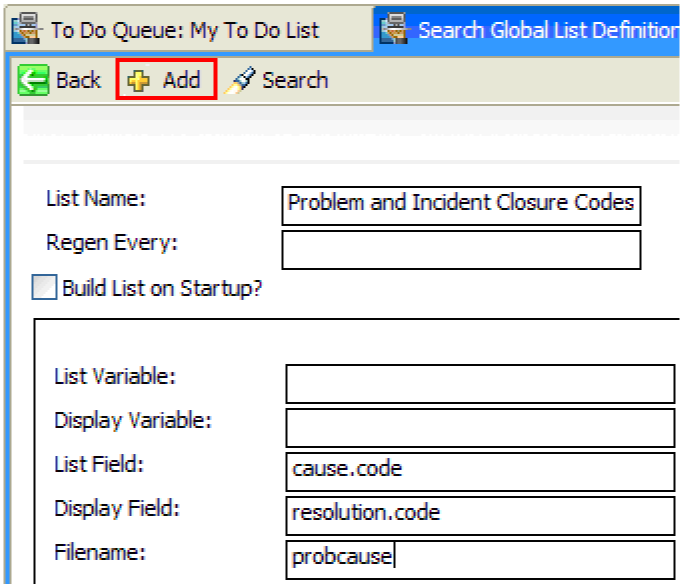


Figure 45 - Add new Global List

4. Right-click the form, and then click **Rebuild Global List** to make sure that the **Value list** is automatically filled with the closure code values.

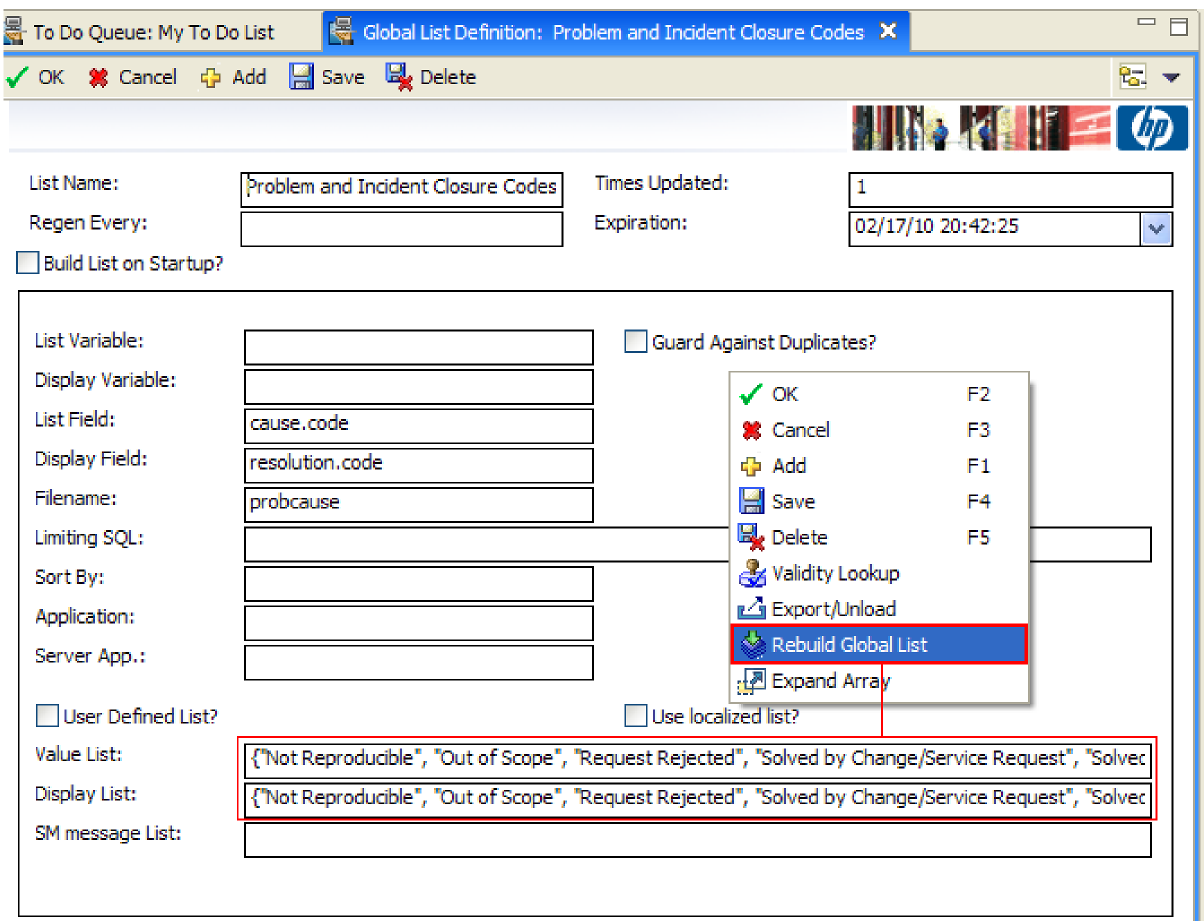


Figure 46 - Build Global List

5. Click **Save** and then click **OK**.

“Opened By” field is not set for a newly created Change (SM 7.11 & 7.10)

When you create a new change from OO, the **Opened By** field is not set. The **orig.operator** field (Opened By) is not set because the code that is responsible for it (cm.open) is bypassed by the Web services process. To populate the field do the following:

1. In System Navigator, go to **System Definition**, then **Tables**, and then open the **Process** table.

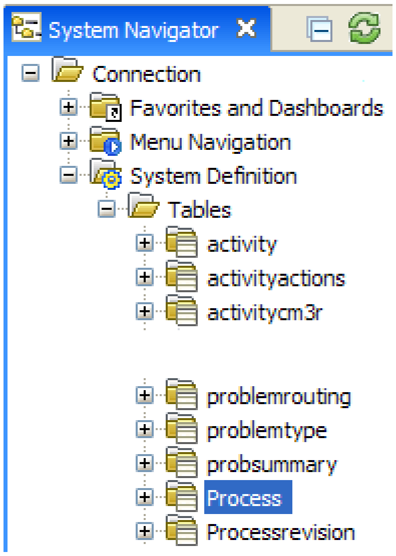


Figure 47 - Location of the Process table

2. Click **View all records in the tab**le.

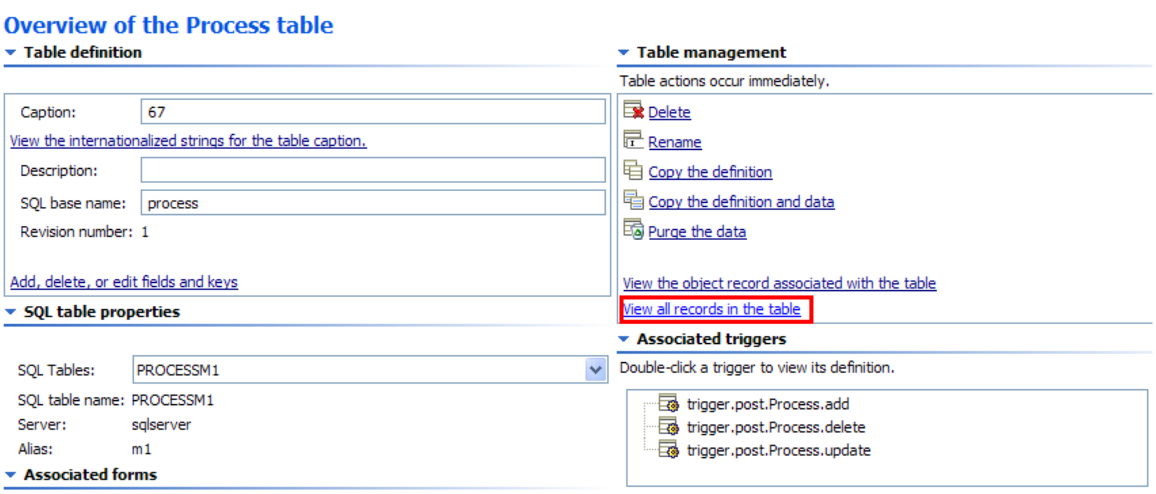


Figure 48 - View all record in the table

3. Select **cm.open.save** from the process list.

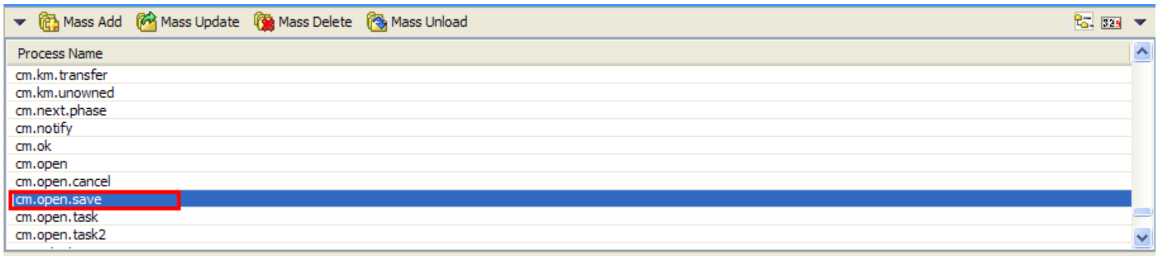


Figure 49 - Find cm.open.save process

4. On the **RAD** tab, in **Expressions evaluated before RAD call**, input the following expression and save your changes:

```
orig.operator in $L.file=$lo.ufname;if (evaluate(oper.full.name in $L.phase) or
nullsub(orig.operator in $L.file, "")="") then (orig.operator in
$L.file=operator())
```

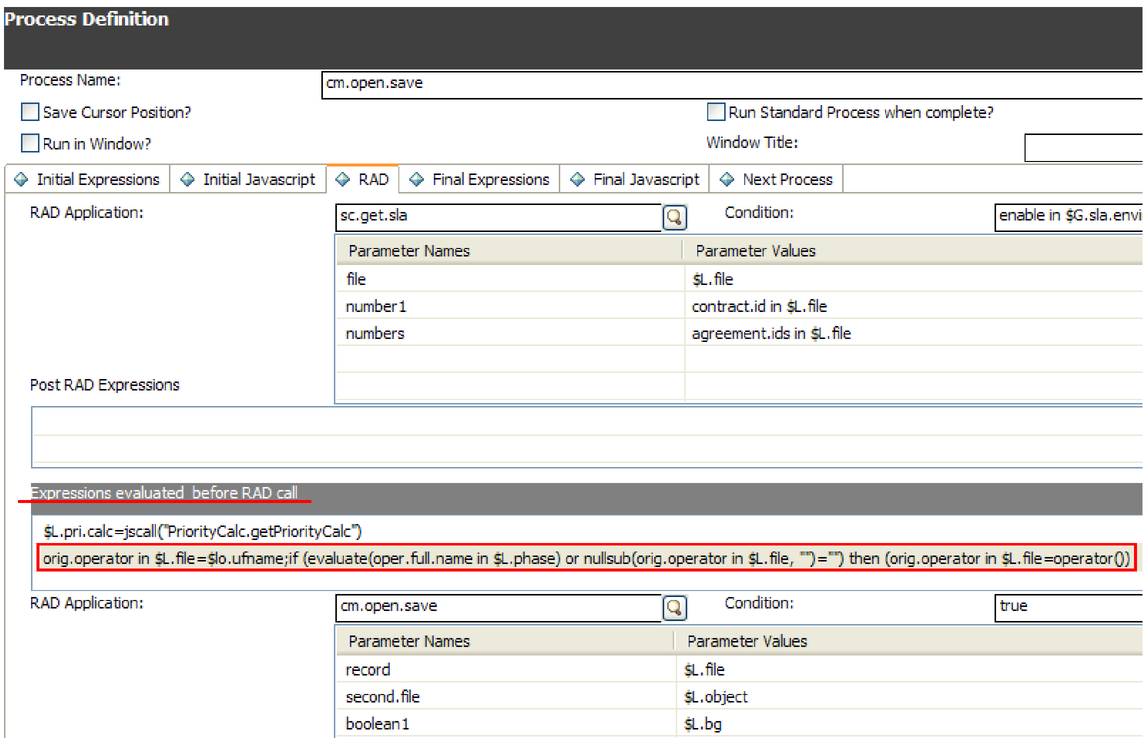


Figure 50 - Add RAD expression

Versions

Operations Orchestration Version	HP Service Manager Version
9.00	7.00, 7.01, 7.10, 7.11

Service Manager Infrastructure integration operation and flow infrastructure

The Service Manager integration includes the following operations in the OO Studio **Library / Integrations / Hewlett-Packard / Service Manager /** folder.

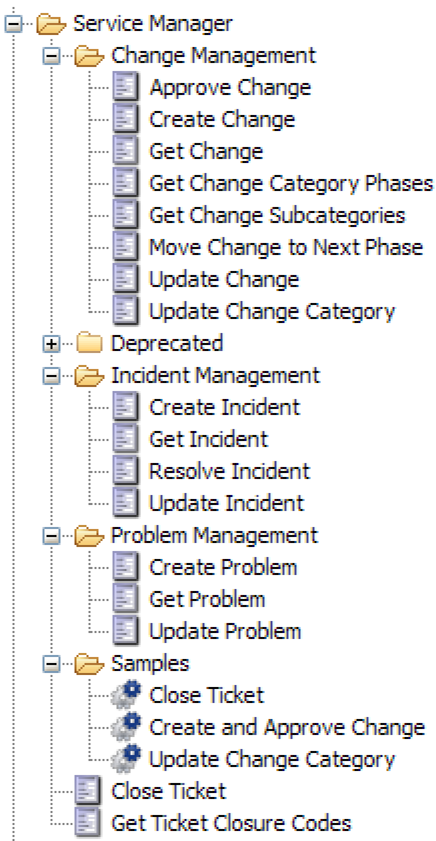


Figure 51 - Service Manager Integration operation and flow infrastructure

Common inputs in the integration

OO flows and operations use inputs to specify how they obtain the data that they need and when the data is obtained. The following inputs are used consistently throughout the HP Service Manager integration's operations and flows.

host

The ServiceManager host server. You can specify the host by using its IP address (for example, 10.2.255.116) or its DNS name (for example, www.smhost.com).

port

The Service Manager server port on which the SM is running. You can use port **13080** for http protocol and **13443** for https secure connections.

username

The username to use to connect to the Service Manager server (e.g. **falcon**).

password

The password for the **username**.

smVersion

The version number of SM you are using (e.g. **sm700**, **sm701**, **sm710**, **sm711**). The default version number is sm701.

Operation and flow specifics

This section describes the HP Service Manager integration's flows and operations, including any operation- or flow-specific inputs. The flows and operations are grouped by their basic functionality:

- Change Management
- Incident Management
- Problem Management
- Sample flows
- Common operations for all types of tickets

Change Management Operations

These operations carry out tasks for managing change tickets. They are:

- Approve Change: approves or rejects a change ticket
- Create Change: creates a change
- Get Change: retrieves a change
- Get Change Category Phases: gets the phases of change tickets that belong to a certain category
- Get Change Subcategories: gets the subcategories of change tickets that belong to a certain category
- Move Change To Next Phase: moves a change to the next phase
- Update Change: updates the properties of a change ticket
- Update Change Category: updates the category of a change

Incident Management Operations

These are operations that can be used for managing incident tickets. They are:

- Create Incident: creates a new incident
- Get Incident: retrieves an incident
- Resolve Incident: resolves an incident ticket
- Update Incident: updates the properties of an incident ticket

Problem Management Operations

- Create Problem: creates a new problem
- Get Problem: retrieves a problem
- Update Problem: update the properties of a problem ticket

Troubleshooting

This section provides troubleshooting procedures and tools you can use to solve problems you may encounter while using this integration. It also includes a list of the error messages you may receive while using the integration and offers descriptions and possible fixes for the errors.

How to display Sched Outage Start and Sched Outage End fields

1. Open **Change Queue** and double-click on a change
2. In the changes table from the top of the screen, right-click and choose **Modify Columns**.

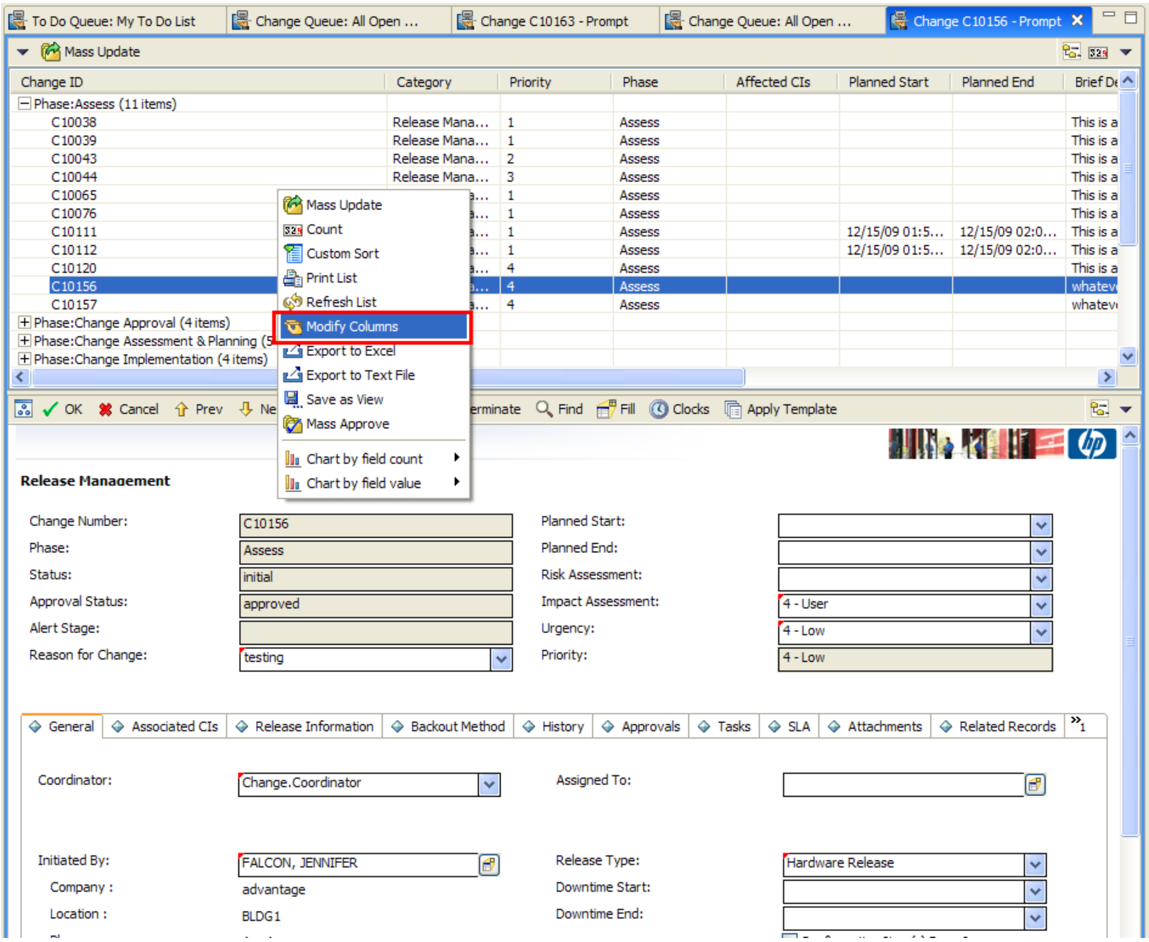


Figure 52 - Modify columns menu option

3. You can now see a list of the columns that are displayed in the changes table. Click on the last empty row and choose from the drop-down list **Sched Outage Start**; this will make the attribute available in the changes table. Do the same for **Sched Outage End**.

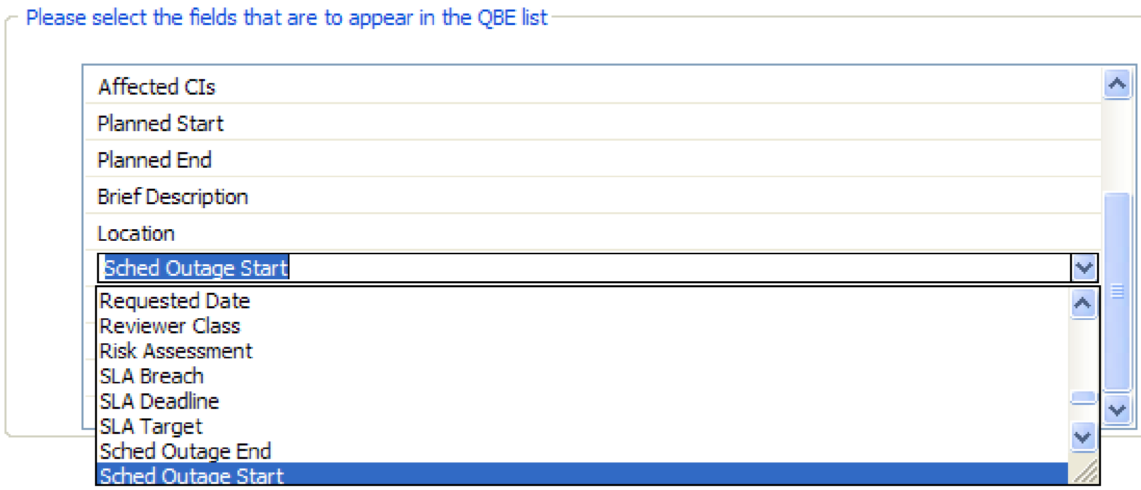


Figure 53 - Add new column

4. Click **Proceed** and the new columns should appear in the changes table. If this is not the case, check if the table has rescaled or you need to drag the right margin of the table to the right so that the new columns would be visible.

How to find user rights and properties (all SM versions)

1. Go to the SM command bar.
2. Enter **operator** and press ENTER.

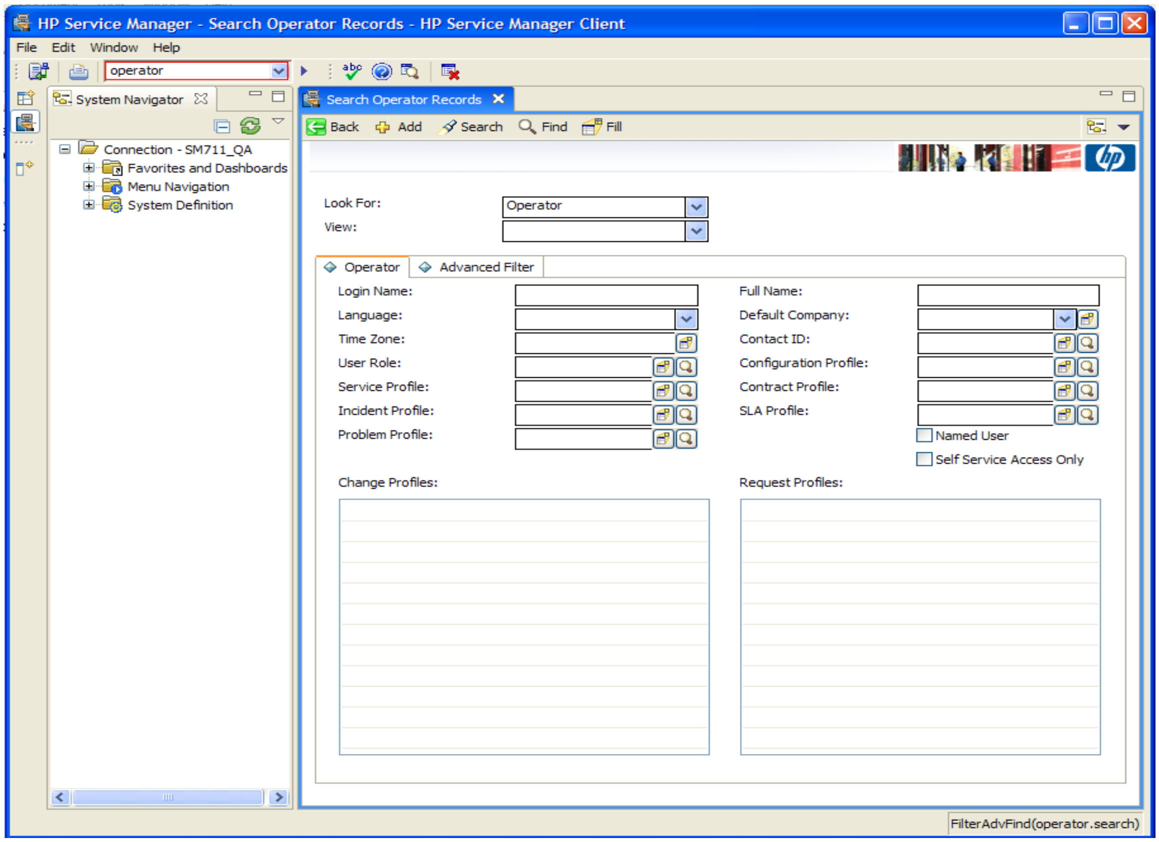


Figure 54 - Search for operator

3. Type the user (e.g. **falcon**) in the **Login Name** text box and press ENTER.

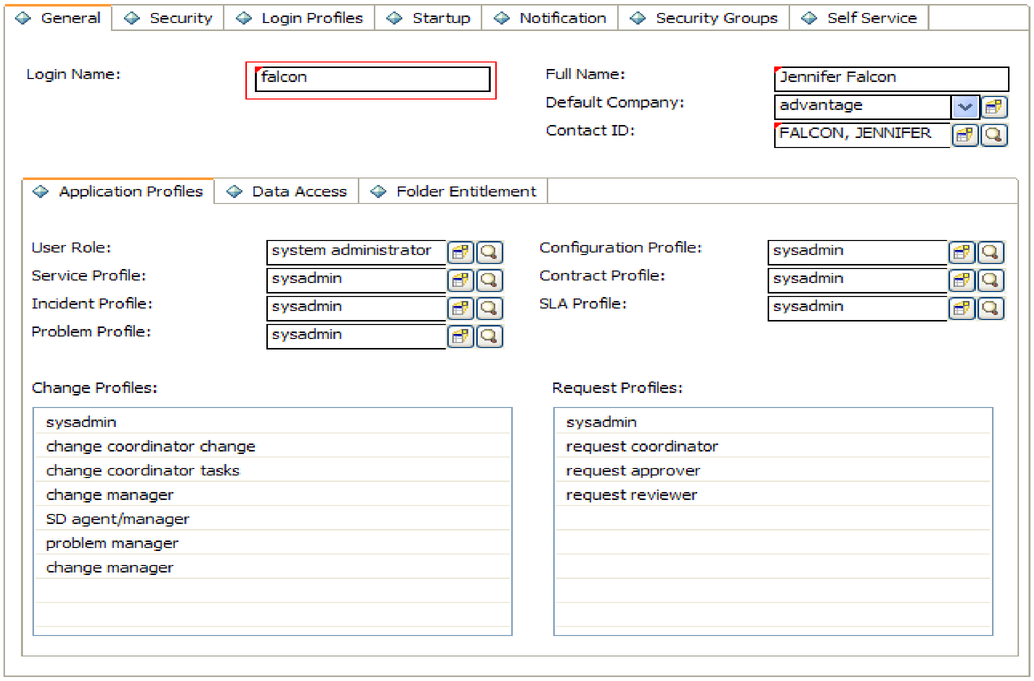
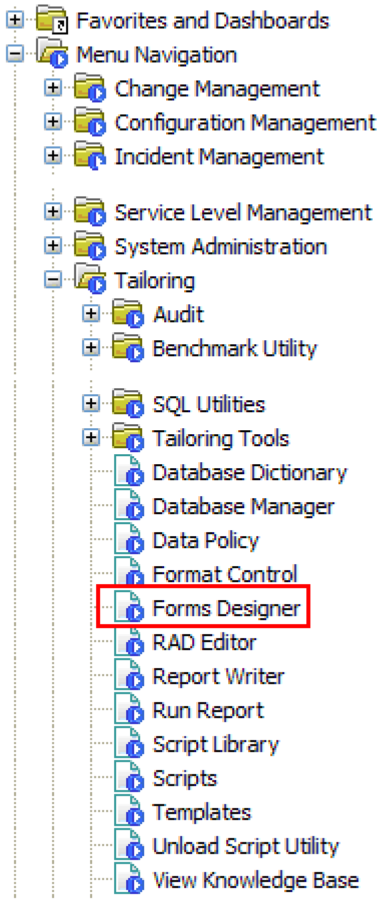


Figure 55 - Search for a specific user

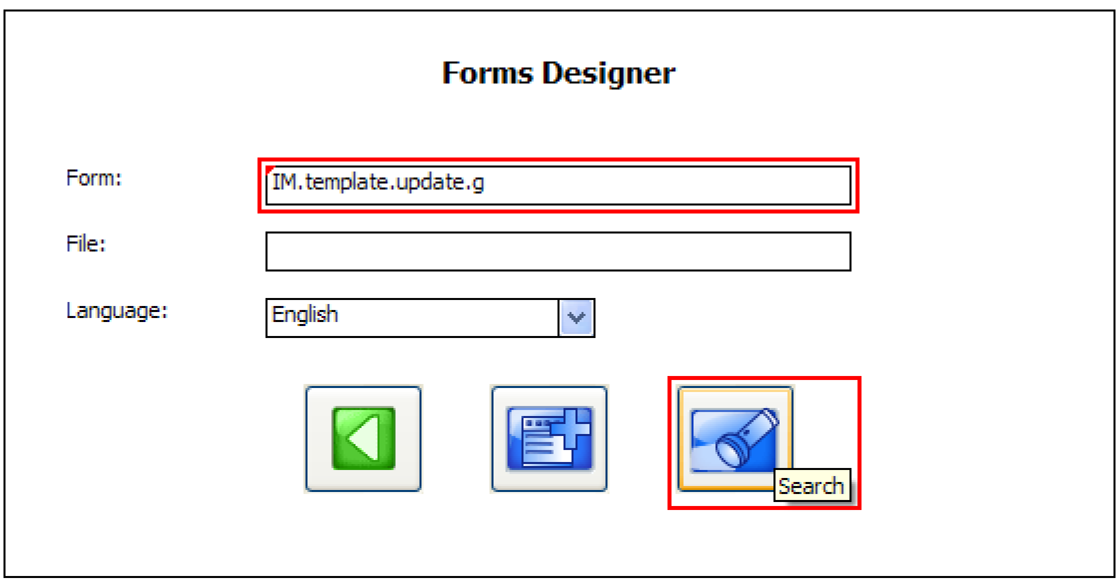
How to view a list of recommended values for siteCategory (SM 7.00 & 7.01)

For incident tickets, you can see a list of recommended values that can be used in order to update an incident by following the next steps:

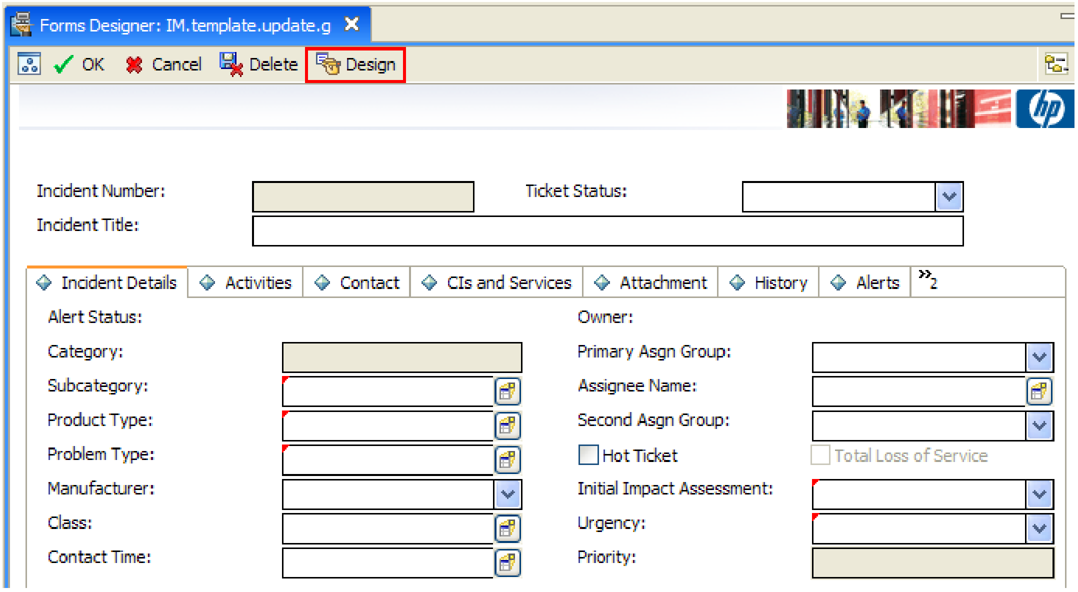
1. Go to **Menu Navigation**, then **Form Designer**.



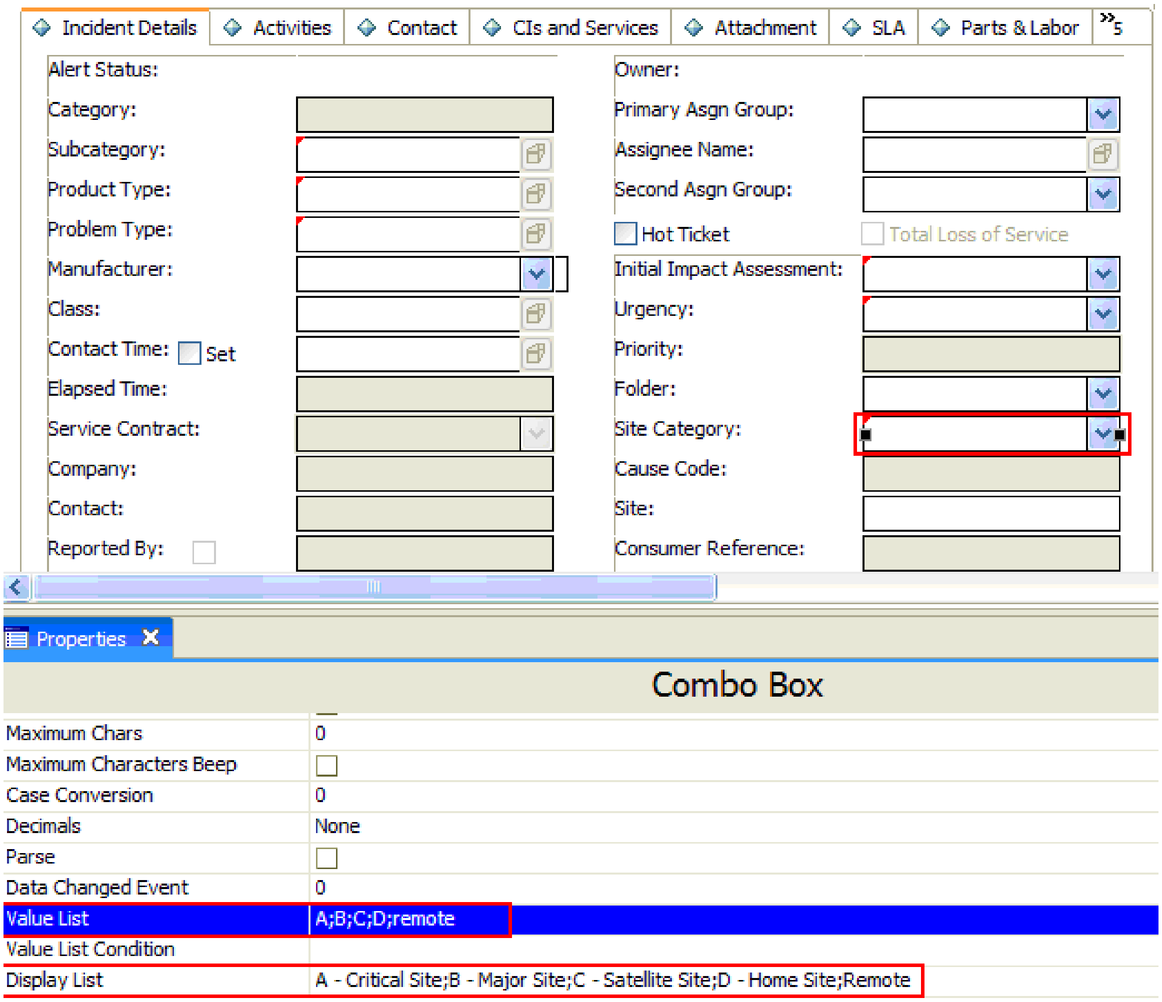
2. In the **Form** field enter **IM.template.update.g** and then click **Search**.



3. You can now see the **Update Incident** form. Click **Design** from the top bar menu:



4. Click the **Site Category** box and in the **Properties** tab, scroll down and look at the **Value List** property. If you can't see the **Properties** tab go to **Window**, then **Show view**, and then **Other** and choose the **Properties** view. The **Value List** property contains the values that can be provided to the **siteCategory** input, and the **Display list** field contains the displayable values associated with the **Value List** content. Each value from **Value List** has a corresponding value in **Display List**.


Incident Details
Activities
Contact
CIs and Services
Attachment
SLA
Parts & Labor
Alert Status:
Category:
Subcategory:
Product Type:
Problem Type:
Manufacturer:
Class:
Contact Time:
Set
Elapsed Time:
Service Contract:
Company:
Contact:
Reported By:
Owner:
Primary Asgn Group:
Assignee Name:
Second Asgn Group:
Hot Ticket
Total Loss of Service
Initial Impact Assessment:
Urgency:
Priority:
Folder:
Site Category:
Cause Code:
Site:
Consumer Reference:
Properties
Combo Box
Maximum Chars
0
Maximum Characters Beep
Case Conversion
0
Decimals
None
Parse
Data Changed Event
0
Value List
A;B;C;D;remote
Value List Condition
Display List
A - Critical Site;B - Major Site;C - Satellite Site;D - Home Site;Remote

Error messages

This section lists the error messages you may receive while using this integration. Each error message includes possible causes and fixes for the error.

Error Message: Connection refused

This error message can be seen if OO can't connect to the SM server host. If the host and credentials are good make sure that SM server machine allows the specified protocol. Service Manager Server installed by default does not support **https**, therefore check sure your SM host supports the indicated protocol. If you want to enable https on the server then go to %SM Path%/Service Manager 7.xx/Server, execute **configure.bat** and select to enable https protocol.

Error Message: Unauthorized

This message indicates that the logon information for SM may be incorrect. Check the **username** and **password** inputs to make sure that they are correct.

Error Message: Not Authorized

This error message is issued when a user does not have sufficient rights to perform a certain action (e.g. closing a problem ticket). It can be seen even if you specify an existent user from the SM server. Make sure you entered valid values for inputs and the user have sufficient rights to perform the action (he could be change manager, but not problem manager).

Error Message: Resource Unavailable

This message indicates that the specified resource (change, incident or problem ticket) is used by another application (e.g. HP Service Manager Client). If you encounter this issue check your HP Server Manager Client instance and close the windows that are using your resource.

Error Message: A CXmlApiException was raised in native code : error 19 : scxmlapi(19) - Doc Engine call failed with cc -1

This message appears for some of the Service Manager Operations when they run on SM710 or SM711 servers. Sometimes it is an error given from Service Manager when you try to invoke a service but it does not necessary mean that the operation did not accomplish its task. A possible workaround is to verify if the operation actually made the requested changes and catch the exception in this case.

Error Message: Unspecified error

This message appears for some of the Service Manager Operations when they run on SM700 or SM701 servers. For some service invocations SM issues this message, but it does not necessary mean that the operation did not accomplish its task. A possible workaround is to verify if the operation actually made the requested changes and catch the exception in this case.

Error Message: Validation failed

In order to successfully run a SM operation you must pass in valid input values. If your inputs are valid and the operation still fails than make sure your WSDL configuration is the same as specified in Instalation and Configuration Instructions.

Known Issues – Service Manager sessions

Earlier versions of the operation created a new session with the server every time was invoked a web service available on the server. Service Manager interprets each session as a new connection and limits these connections to a well established number (for example, 50 connections/user). Therefore, after running an operation repeatedly 50 times or more, there were chances to receive an error message caused because of the exceeding maximum number of users.

Current operations normally use eight sessions with the server, one for each service (change, incident, problem,global lists) and protocol used for a host (http or https) so it will not throw an error message if you stress a SM operation more than 50 times in 30 minutes. It could be that sometimes Service Manager status will show more connections than those mentioned above. This is caused because a new session is also created when an operation tries to invoke a SM service and this call fails (not to confuse an invocation failure with an operation failure). Still the Service Manager doesn't close a connection for that user immediately after the session ends. You can expect to encounter this issue especially for Update Change Category operation on SM710&SM711 versions.

The operations could also fail sometimes with an error message like "Session no longer valid". This is a known issue caused by the SM server, rarely met and hard to reproduce. Normally a new run of the operation will fix this problem.

Security

Service Manager 7.x servers are accessed via SOAP over HTTP (or HTTPS, if enabled on the host). The Service Manager server administrator provides logon credentials for connecting with the SOAP. The SOAP client needs the username and password of an integration user defined in the Service Manager server.