
The HP ServiceCenter/Service Manager Adapter

This document explains how to use the HP ServiceCenter/Service Manager Adapter, version 1.0. The Adapter is compatible with HP Business Availability Center, version 7.0 or later, HP ServiceCenter, version 6.2, and HP Service Manager, version 7.0 (following changes to the WSDL configuration).

Note: This Adapter is a specific configuration of the ServiceDesk Adapter.

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Adapter Usage

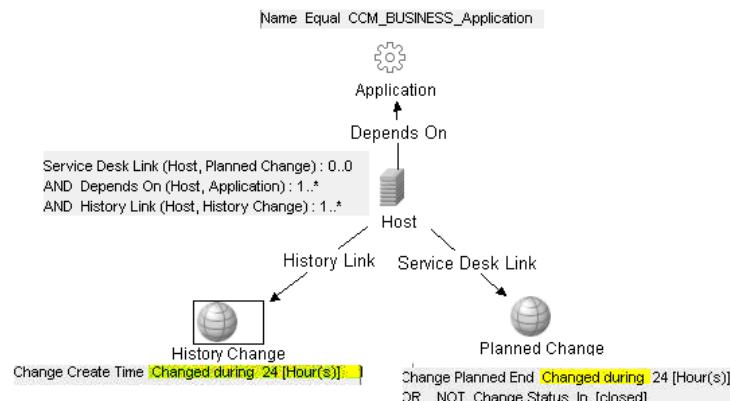
The ServiceCenter/Service Manager Adapter supports the retrieval of data from HP ServiceCenter and HP Service Manager. This adapter connects to, and receives data from, ServiceCenter/Service Manager using the Web Service API. Every request to ServiceCenter/Service Manager to calculate a federated query is made through this adapter.

The Adapter supports three external CI types: Incident, Problem, and Planned Change. The adapter retrieves the CIs of these types from ServiceCenter/Service Manager with the required layout and by a given filter (using reconciliation and/or a CI filter). Each of these CIs can be related to one of the following UCMDB internal CIs: Host, Business Service, Application. Each UCMDB internal CI includes a reconciliation rule in the ServiceCenter/Service Manager configuration that can be changed dynamically (for details, see “Reconciliation Data Configuration” on page 6). Note that there are no internal relationships between Adapter-supported CIs.

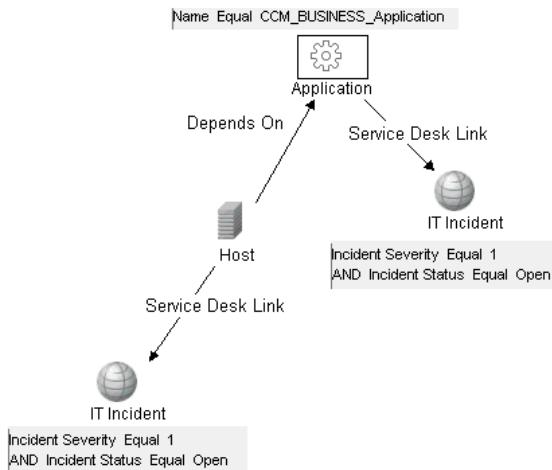
The modeling of the supported CIs and virtual relationships is supplied with the Adapter. You can add attributes to a CI (for details, see “Add an Attribute to the ServiceCenter/Service Manager CI” on page 16).

The following use cases (that include TQL examples) describe how the Adapter can be employed:

- 1 A user needs to display all unplanned changes to all hosts running a specific application during the last 24 hours:



- 2** A user needs to see all open critical incidents on an application and its hosts:



The Adapter Configuration File

The Adapter configuration file **serviceDeskConfiguration.xml** is located in the following directory:

<Business Availability Center root directory\fcmdb\CodeBase
\ServiceDeskAdapter

This file contains three parts:

- 1** The first part, which is defined by the ucldbClassConfigurations element, contains the external CIT configuration that the Adapter supports. For details, see “External CITs Configuration” on page 4.
- 2** The second part, defined by the reconciliationClassConfigurations element, contains reconciliation data information for appropriate UCMDB CITs. For details, see “Reconciliation Data Configuration” on page 6.
- 3** The third part, defined by the globalConnectorConfig element, includes the global configuration for a specific connector implementation. For details, see “Global Configuration” on page 10.

External CITs Configuration

Each CIT that is supported by the Adapter is defined in the first section of the Adapter configuration file.

This section, `ucmdbClassConfiguration`, represents the only supported CIT configuration. This element contains the CIT name as defined in the UCMDB class model (the `ucmdbClassName` attribute), mapping for all its attributes (the `attributeMappings` element), and a private configuration for a specific connector implementation (the `classConnectorConfiguration` element):

- The `ucmdbClassName` attribute defines the UCMDB class model name.
- The `attributeMappings` element contains `attributeMapping` elements.

The `attributeMapping` element defines the mapping between the UCMDB model attribute name (the `ucmdbAttributeName` attribute) to an appropriate ServiceCenter/Service Manager attribute name (the `serviceDeskAttributeName` attribute).

For example:

```
<attributeMapping ucmdbAttributeName="problem_brief_description"  
serviceDeskAttributeName="brief.description"/>
```

This element can optionally contain the following converter attributes:

- The `converterClassName` attribute. This is the converter class name that converts the UCMDB attribute value to the ServiceDesk attribute value.
- The `reversedConverterClassName` attribute. This is the converter class name that converts the ServiceDesk attribute value to the UCMDB attribute value.
- The `classConnectorConfiguration` element contains the configuration for the specific connector implementation for the current external CIT. Wrap this configuration in CDATA if it contains special XML characters (for example, & replacing &).

The following example shows the ucldbClassConfiguration section of the serviceDeskConfiguration.xml file. The section includes the ucldbClassName element for the Incident CIT with a ServiceCenter connector implementation:

```
<ucldbClassConfiguration ucldbClassName="it_incident">
    <attributeMappings>
        <attributeMapping ucldbAttributeName="incident_id"
serviceDeskAttributeName="IncidentID"/>
        <attributeMapping ucldbAttributeName="incident_brief_description"
serviceDeskAttributeName="BriefDescription"/>
        <attributeMapping ucldbAttributeName="incident_category"
serviceDeskAttributeName="Category"/>
        <attributeMapping ucldbAttributeName="incident_severity"
serviceDeskAttributeName="Severity"/>
        <attributeMapping ucldbAttributeName="incident_open_time"
serviceDeskAttributeName="OpenTime"/>
        <attributeMapping ucldbAttributeName="incident_update_time"
serviceDeskAttributeName="UpdatedTime"/>
        <attributeMapping ucldbAttributeName="incident_close_time"
serviceDeskAttributeName="ClosedTime"/>
        <attributeMapping ucldbAttributeName="incident_status"
serviceDeskAttributeName="IMTicketStatus"/>
    </attributeMappings>
    <classConnectorConfiguration>
        <![CDATA[ <class_configuration
connector_class_name="com.mercury.topaz.fcmdb.adapters.serviceDeskAdapter.servi
ceCenterConnector.impl.SimpleServiceCenterObjectConnector">
            <device_key_property_names>
<device_key_property_name>ConfigurationItem</device_key_property_name>
            </device_key_property_names>
            <id_property_name>IncidentID</id_property_name>
            <keys_action_info>
                <request_name>RetrieveIncidentKeysListRequest</request_name>
                <response_name>RetrieveIncidentKeysListResponse</response_name>
            </keys_action_info>
            <properties_action_info>
                <request_name>RetrieveIncidentListRequest</request_name>
                <response_name>RetrieveIncidentListResponse</response_name>
            </properties_action_info>
        </class_configuration> ]]>
        </classConnectorConfiguration>
    </ucldbClassConfiguration>
```

Adding an Attribute to a CIT

When adding an attribute to the UCMDB model for a Adapter-supported CIT:

- 1 In `serviceDeskConfiguration.xml`, add an `attributeMapping` element to the appropriate `ucmdbClassConfiguration` element.
- 2 Verify that ServiceCenter/Service Manager externalizes this attribute in its Web Service API.
- 3 Save `serviceDeskConfiguration.xml`.
- 4 Send a call to the JMX to reload the adapter: **FCmdb Config Services > loadOrReloadCodeBaseForAdapterId**, using the appropriate customer ID and the ServiceDeskAdapter adapterID.

Reconciliation Data Configuration

Each UCMDB CIT that can be related to the Adapter-supported CIT is defined in the second section of the Adapter configuration file.

This section, `reconciliationClassConfigurations`, represents the reconciliation data configuration for one UCMDB CIT. The element includes two attributes:

- The `ucmdbClassName` attribute. This is the CIT name as defined in the UCMDB class model.
- The `concreteMappingImplementationClass` attribute. This is the class name of the concrete implementation for the `ConcreteMappingEngine` interface. Use this attribute to map between instances of UCMDB CITs and external Adapter CITs. The default implementation that is used is:

```
com.mercury.topaz.fcldb.adapters.serviceDeskAdapter.mapping.impl.OneNodeMappingEngine
```

An additional implementation exists that is used only for the host reconciliation CIT for reconciliation by the IP of the host:

```
com.mercury.topaz.fcldb.adapters.serviceDeskAdapter.mapping.impl.HostIpMappingEngine
```

The reconciliationClassConfiguration element can contain one of the following elements:

- The reconciliationById element. This element is used when the reconciliation is done by ID. In this case, the text value of this element is the ServiceDesk field name that contains the CMDB ID. For example:

```
<reconciliationById>SerialNumber</reconciliationById>
```

In this example, the ServiceDesk field SerialNumber contains the CMDB ID of the appropriate host.

- The reconciliationData element. Use this element if the reconciliation is done by comparing attributes. You can run reconciliation with one attribute or several attributes by using the logical operators OR and/or AND.

If you run reconciliation with one attribute, the reconciliationData child element should be a reconciliationAttribute element. The reconciliationAttribute element contains an appropriate UCMDB attribute name (the ucldbAttributeName attribute) and an appropriate ServiceDesk attribute name (the serviceDeskAttributeName attribute). This element can also contain a ucldbClassName attribute that defines the appropriate UCMDB CIT name. By default, the current reconciliation UCMDB CIT name is used.

You can also use the converterClassName and reversedConverterClassName attributes; they should contain the converter class name that converts the UCMDB attribute value to the ServiceDesk attribute value, or vice versa.

For example:

```
<reconciliationData>
    <reconciliationAttribute ucldbAttributeName="host_hostname"
        serviceDeskAttributeName="NetworkName"
        converterClassName="com.mercury.topaz.fcmdb.adapters.serviceDeskAdapter.converter.PropertyValueConverterToUpperCase"/>
</reconciliationData>
```

For reconciliation to run with two or more attributes, use a logical operator between reconciliation attributes.

The logical operator AND can contain several reconciliationAttribute elements (the minimum is 2). In this case the reconciliation rule contains an AND operator between attribute comparisons.

For example:

```
<reconciliationData>
<AND>
    <reconciliationAttribute ucldbAttributeName="host_hostname"
serviceDeskAttributeName="NetworkName"
converterClassName="com.mercury.topaz.fcldb.adapters.serviceDeskAdapter.converter.PropertyValueConverterToUpperCase"/>
    <reconciliationAttribute ucldbClassName="ip"
ucldbAttributeName="ip_address" serviceDeskAttributeName="NetworkAddress" />
</AND>
</reconciliationData>
```

In this example, the reconciliation rule follows this format:

host.host_hostname= NetworkName and ip.ip_address= NetworkAddress.

The logical operator OR can contain several reconciliationAttribute and AND elements. In this case the reconciliation rule contains an OR operator between attributes and AND expressions. Since XML does not assure the order of elements, you should provide a priority attribute to each sub-element of OR element type. The comparison between OR expressions is calculated by these priorities.

For example:

```
<reconciliationData>
<OR>
    <reconciliationAttribute ucldbAttributeName="host_dnsname"
serviceDeskAttributeName="NetworkDNSName" priority="2" />
<AND priority="1" >
    <reconciliationAttribute ucldbAttributeName="host_hostname"
serviceDeskAttributeName="NetworkName"
converterClassName="com.mercury.topaz.fcldb.adapters.serviceDeskAdapter.converter.PropertyValueConverterToUpperCase"/>
    <reconciliationAttribute ucldbClassName="ip"
ucldbAttributeName="ip_address" serviceDeskAttributeName="NetworkAddress" />
</AND>
</OR>
</reconciliationData>
```

In this example the reconciliation rule follows this format:

(host.host_dnsname= NetworkDNSName OR (host.host_hostname= NetworkName and ip.ip_address= NetworkAddress)). Since the AND element takes a priority attribute of value 1, the (host.host_hostname= NetworkName and ip.ip_address= NetworkAddress) condition is checked first. If the condition is satisfied, the reconciliation is run. If not, the .host_dnsname= NetworkDNSName condition is checked.

The additional sub-element of the reconciliationClassConfiguration element is classConnectorConfiguration. The classConnectorConfiguration element contains the configuration for a specific connector implementation for the current reconciliation CIT. This configuration should be wrapped by CDATA if it contains some special XML characters (for example, & replacing &).

Changing the Reconciliation Rule of a CIT

- 1** In **serviceDeskConfiguration.xml**, update the appropriate reconciliationData element with the new rule.
- 2** Call to the JMX to reload the adapter: **FCmdb Config Services > loadOrReloadCodeBaseForAdapterId**, using the appropriate customer ID and ServiceDeskAdapter adapterID.

Reconciliation of a Host by ip_address or by host_name

To run reconciliation on a host by ip_address or host_name, place the following ReconciliationData element in the Adapter configuration file:

```
<reconciliationData>
    <OR>
        <reconciliationAttribute priority="1" ucldbClassName="ip"
ucldbAttributeName="ip_address" serviceDeskAttributeName="NetworkAddress"/>
        <reconciliationAttribute priority="2" ucldbClassName="host"
ucldbAttributeName="host_hostname" serviceDeskAttributeName="NetworkName"
converterClassName="com.mercury.topaz.fcldb.adapters.serviceDeskAdapter.converter.PropertyValueConverterToUpperCase"/>
    </OR>
</reconciliationData>
```

You should also change the value of the concreteMappingImplementationClass attribute of the reconciliationClassConfiguration element to:

```
= "com.mercury.topaz.fcmdb.adapters.serviceDeskAdapter.mapping.impl.HostIpMappingEngine"
```

Global Configuration

The third section of the Adapter configuration file contains the global configuration for the specific connector implementation.

This configuration, globalConnectorConfig, should be wrapped by CDATA if it contains some special XML characters (for example, & replacing &).

Adapter Deployment

This section describes a typical deployment of the Adapter.

This section includes the following topics:

- “Deploy the ServiceDesk Adapter” on page 11
 - a** “Extract the Adapter Implementation Files and Deploy the Package” on page 11
 - b** “Add a ServiceCenter/Service Manager External Data Source” on page 11
 - c** “Configure HP ServiceCenter 6.2” on page 12 (when connecting to HP ServiceCenter)
 - d** “Configure HP Service Manager 7.0” on page 14 (when connecting to HP Service Manager)
- “Add an Attribute to the ServiceCenter/Service Manager CIT” on page 16
 - e** “Add an Attribute to the Business Availability Center Model” on page 17
 - f** “Export Attributes from HP ServiceCenter by Changing the Configuration” on page 18 (when connecting to HP ServiceCenter)
 - g** “Export Attributes from HP Service Manager by Changing the Configuration” on page 20 (when connecting to HP Service Manager)

h “Modify the Adapter Configuration File” on page 22

i “Load the Changes” on page 23

Deploy the ServiceDesk Adapter

This section explains where to place the files needed for deployment.

Extract the Adapter Implementation Files and Deploy the Package

- 1** Verify the location of the following folder and file:
 - ServiceDeskAdapter
 - serviceDeskAdapter.zip
- 2** Move the **serviceDeskAdapter.zip** package to the following directory:
<Business Availability Center root directory>\mam_lib\packages.
- 3** Deploy the serviceDeskAdapter.zip package: Log in to Business Availability Center and access the Package Manager (**Admin > Universal CMDB > Settings > Package Manager**). Select the package and click the **Deploy** button.
For details on deploying packages, refer to the Business Availability Center documentation.
- 4** Move the **ServiceDeskAdapter** folder to the following directory:
<Business Availability Center root directory>\fcmdb\CodeBase

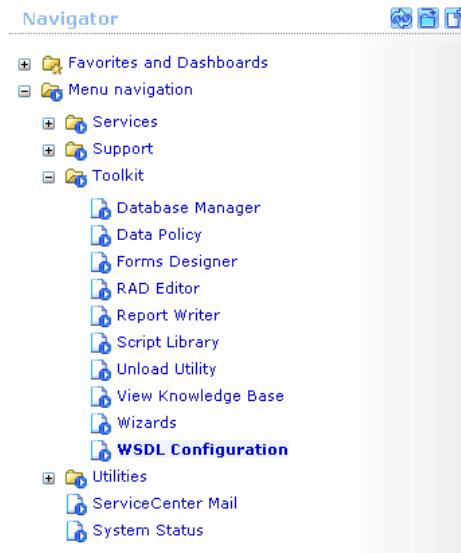
Add a ServiceCenter/Service Manager External Data Source

- 
- 1** In Business Availability Center, access the Federated CMDB window: **Admin > Universal CMDB > Settings > Federated CMDB**.
 - 2** Click the button to add a data store. In the Data Store dialog box that opens, choose the **ServiceDeskAdapter** and fill in the mandatory fields.
For help with this dialog box, click the Help link to open the Business Availability Center online documentation.
 - 3** Continue to “Configure HP ServiceCenter 6.2” on page 12 or “Configure HP Service Manager 7.0” on page 14.

Configure HP ServiceCenter 6.2

If you are connecting to HP ServiceCenter, perform the following procedure.

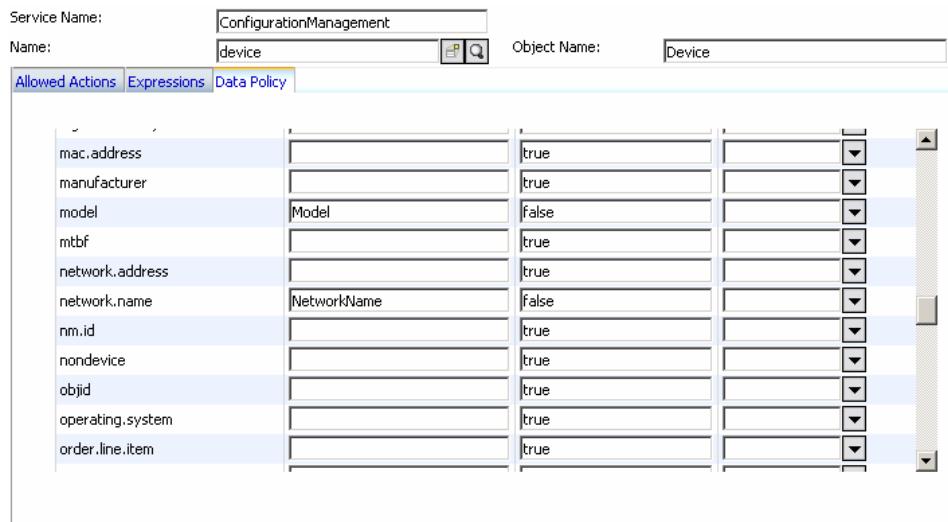
- 1 Open HP ServiceCenter, then the ServiceCenter client.
- 2 Display **WSDL Configuration** in the Navigator (**Main Menu > Menu navigation > Toolkit**):



- 3 In the Name field, enter **device** and press **Enter**:

The screenshot shows the 'Search External Access Definition Records' interface. At the top, there are buttons for Back, Add, Search, Find, and Fill. Below that is a search bar and a 'External Access Definition' title bar. The main area has fields for Service Name (empty), Name (containing 'device'), Object Name (empty), and tabs for Allowed Actions, Expressions, and Data Policy. The 'Allowed Actions' tab is selected. At the bottom is a table with columns 'Allowed Actions' and 'Action Names', both currently empty.

- 4** Select the **Data Policy** tab and ensure that the network.name attribute is not empty (its value should be **NetworkName**). Change the value to **false**. Save your changes.



- 5** Restart ServiceCenter: Select **Start > Programs > ServiceCenter 6.2 > Server > Console** to open the ServiceCenter Console.

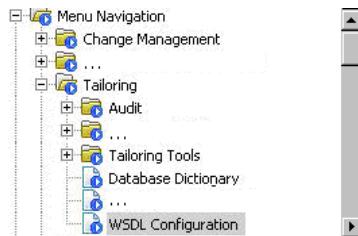


- 6** Click **Stop** and then **Start**.
- 7** Continue to “Add an Attribute to the Business Availability Center Model” on page 17.

Configure HP Service Manager 7.0

If you are connecting to HP Service Manager, perform the following procedure.

- 1 Open the HP Service Manager client.
- 2 Display **WSDL Configuration** in the Navigator (**Main Menu > Menu navigation > Tailoring**):



- 3 In the Object Name field, enter **Device** and press ENTER.

External Access Definition

Service Name:	<input type="text"/>	Name:	<input type="text"/>	Object Name:	<input type="text" value="Device"/>
<input checked="" type="checkbox"/> Allowed Actions		<input type="checkbox"/> Expressions	<input type="checkbox"/> Fields		
Allowed Actions	Action N...	Action Type			

- 4** Select the **Fields** tab and ensure that the **network.name** attribute appears in the Field list with **NetworkName** as its caption. If this attribute does not appear in the Field list, add it and save your changes.

Field	Caption	Type
dept	Department	
device.severity	Critical	BooleanType
floor	Floor	
is.down	SystemDown	BooleanType
istatus	Status	
location	Location	
location.code	LocationCode	
logical.name	ConfigurationItem	
model	Model	
parent	ParentDevice	
part.no	PartNumber	
room	Room	
serial.no.	SerialNumber	
subtype	ConfigurationItem...	
type	ConfigurationItem...	
updated.by	UpdatedBy	
vendor	Vendor	
network.name	NetworkName	

- 5** To support Problem federation, access **WSDL Configuration** in the Navigator (**Main Menu > Menu navigation > Tailoring**) and enter **Problem** in the Object Name field. Press ENTER.

Allowed Actions	Action N...	Action Type

- 6** Click the **Fields** tab, add the following fields, and save your changes:

Field	Caption	Type
id	id	
brief.description	brief.description	
status	status	
expected.resolution.time	expected.resolution.time	DateTimeType
category	category	
initial.impact	initial.impact	
severity	severity	
priority.code	priority.code	
assignment	assignment	
logical.name	logical.name	
affected.ci(ci.device.name)	ci.device.name	

- 7** Restart the HP Service Manager 7.00 Server service.

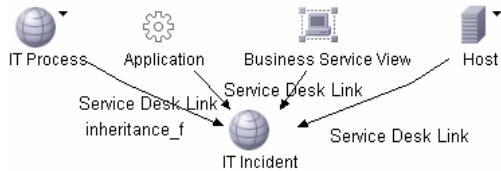
- 8** Continue to “Add an Attribute to the Business Availability Center Model” on page 17.

Add an Attribute to the ServiceCenter/Service Manager CIT

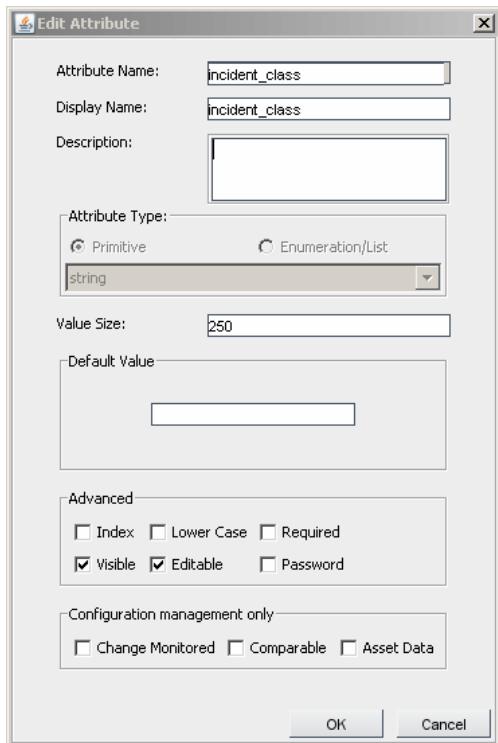
This section explains how to retrieve additional data from ServiceCenter/Service Manager by adding an attribute.

Add an Attribute to the Business Availability Center Model

- 1** Add the new attribute to Business Availability Center: Edit the Incident CIT: Select **Admin > Universal CMDB > Modeling > CI Type Manager**. In View Explorer, select **IT Process > IT Incident**. Right click and choose **Edit CIT**.



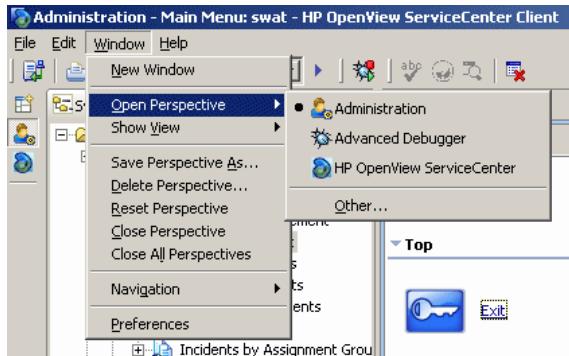
- 2** Select the Attribute tab and add the new attribute:



- 3** Continue to “Export Attributes from HP ServiceCenter by Changing the Configuration” on page 18 or “Export Attributes from HP Service Manager by Changing the Configuration” on page 20.

Export Attributes from HP ServiceCenter by Changing the Configuration

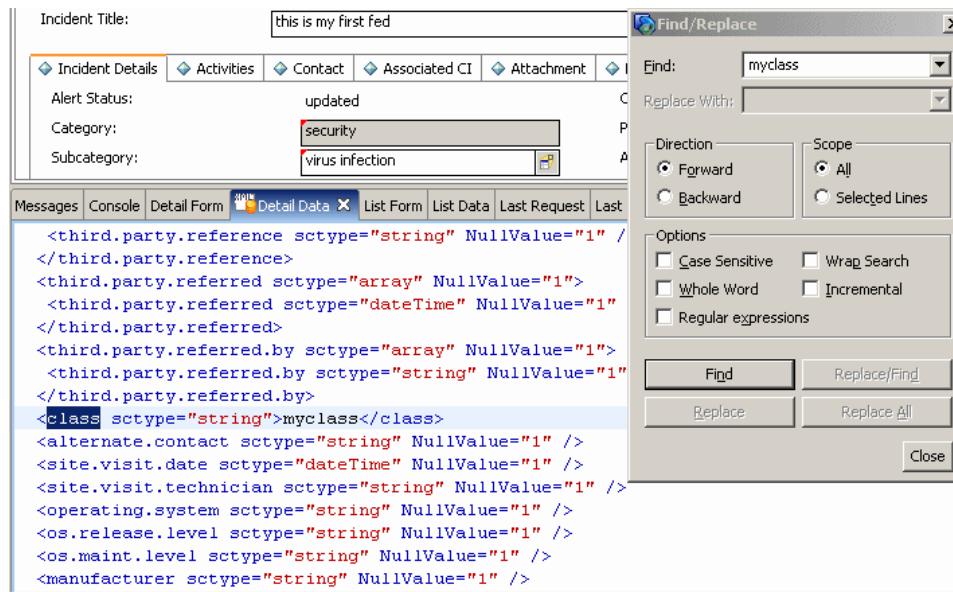
- 1 In HP ServiceCenter, open the ServiceCenter client.
- 2 Select **Window > Open Perspective > Administration:**



- 3 Select **Incident Management > All Open Incidents**, and select one of the incidents you created.

Note: Verify that the value in the Class field is the one that you want to report to Business Availability Center.

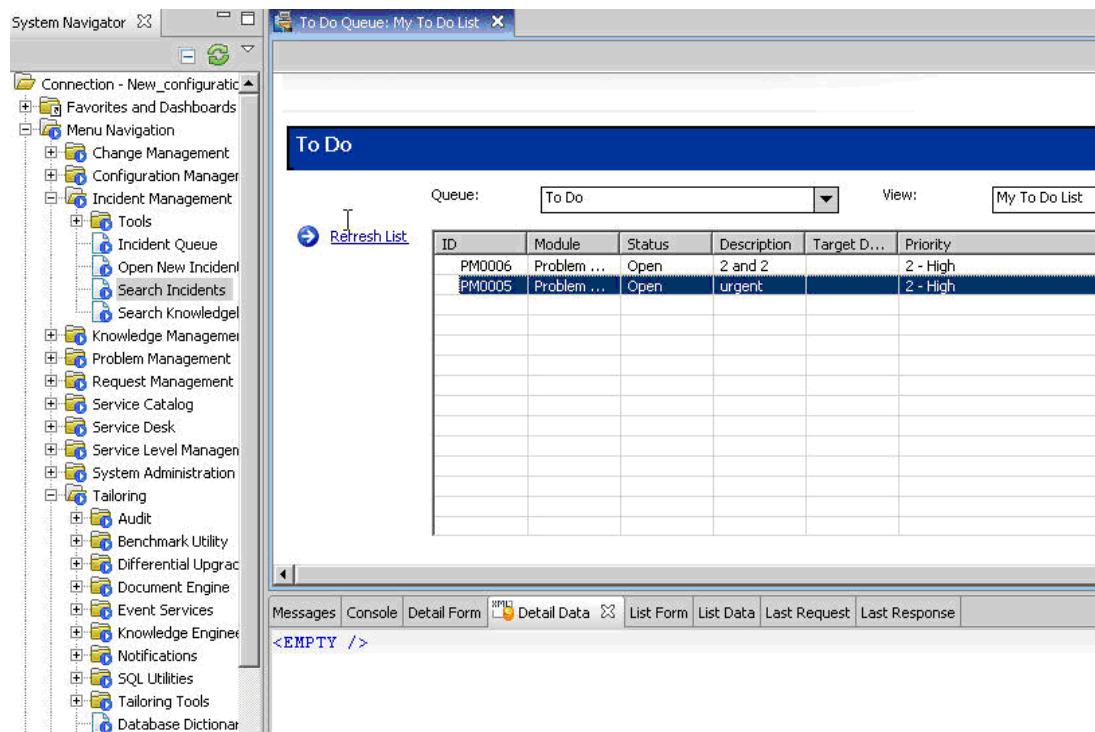
- 4** Search for the value you entered in the Class field (that is, **myclass**), in the XML file displayed below. This is the object name in ServiceCenter.



- 5** Display WSDL Configuration in the Navigator (Main Menu > Menu navigation > Toolkit). Locate the Object Name field, enter **Incident** and press Enter.
- 6** Select the **Data Policy** tab. Enter a name for the object mentioned in the XML file (that is, **class**). Change the value to **false**. Save your changes.
- 7** Restart ServiceCenter: Select **Start > Programs > ServiceCenter 6.2 > Server > Console** to open the ServiceCenter Console.
- 8** Click **Stop** and then **Start**.
- 9** Continue to “Modify the Adapter Configuration File” on page 22.

Export Attributes from HP Service Manager by Changing the Configuration

- 1 In the HP Service Manager client, restore the bottom right pane by clicking the **Restore** button. Click the **Detail Data** tab.



- 2** Open one of the incidents you created: Select **Incident Management > Search Incidents**. Click the search button (you can filter the fields to limit the search).

Incident...	Open Time	Update Time	Alert Status	Category	Brief Description
IM10...	11/29/07 03:5...	11/29/07 03:5...	open	security	012
IM10...	12/04/07 02:0...	12/04/07 02:0...	open	network	test1
IM10	12/04/07 07:2	12/04/07 07:2	DEADLINE AL	business avail	3

Incident Number: Ticket Status:

Incident Title:

Incident Details Activities Contact CI and Services Attachment History Alerts Related Records »1

Alert Status:	open	Owner:	Falcon
Category:	network	Primary Asgn Group:	LAN SUPPORT
Subcategory:	remote communications	Assignee Name:	
Product Type:	remote communications	Second Asgn Group:	TELCOM SUPPORT
Problem Type:	dial-in	<input type="checkbox"/> Hot Ticket	<input type="checkbox"/> Total Loss of Service
Manufacturer:	Unknown	Initial Impact Assessment:	1 - Enterprise
Class:	myclass	Urgency:	4 - Low

Messages Console Detail Form Detail Data List Form List Data Last Request Last Response

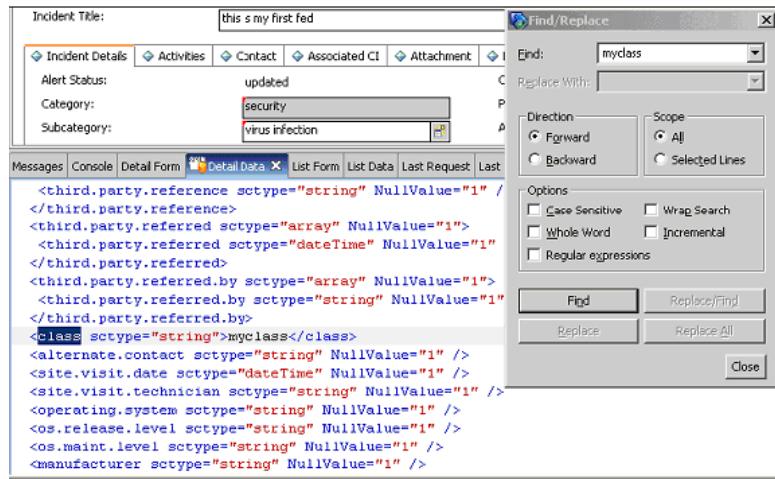
```

<model name="probsummary" query="true">
<keys>
<number sctype="string">IM10002</number>
</keys>
<instance recordid="IM10002 - test1" uniquequery="number="IM10002"">
<number type="string">IM10002</number>
<number.vj type="string">IM10002</number.vj>
<number.vj.alerts type="string">IM10002</number.vj.alerts>
<vj.number.1 type="string">IM10002</vj.number.1>

```

Note: Verify that the value in the Class field is the one that you want to report to Business Availability Center.

- 3** Search for the value you entered in the Class field (that is, **myclass**), in the XML file displayed below. This is the object name in Service Manager.



- 4** Display **WSDL Configuration** in the Navigator (**Main Menu > Menu Navigation > Tailoring**). Locate the Object Name field, enter **Incident** and press ENTER.
- 5** Select the **Data Policy** tab.
- 6** Select the **Fields** tab and ensure that the object name mentioned in the XML file (that is, **class**) appears in the Field list with **ClassName** as its caption. If this attribute does not appear in the Field list, add it and save your changes.
- 7** Restart the HP Service Manager 7.00 Server service.
- 8** Continue to “Modify the Adapter Configuration File” on page 22.

Modify the Adapter Configuration File

- 1** Edit the **ServiceDeskConfiguration.xml** file in

**<Business Availability Center root directory\fcmdb\CodeBase
\ServiceDeskAdapter**

- 2** Add the new attribute line under the Incident area: Locate the following marker:

```
<ucmdbClassConfiguration ucmdbClassName="it_incident">
<attributeMappings>
```

- 3** Add the following line:

```
<attributeMapping ucmdbAttributeName="incident_class"
ServiceDeskAttributeName="ClassName"/>
```

where:

- `ucmdbAttributeName="incident_class"` is the value defined in the CI Type Manager
- `ServiceDeskAttributeName="ClassName"` is the valued defined in ServiceCenter/Service Manager

- 4** Continue to “Load the Changes” on page 23.

Load the Changes

- 1** Launch the Web browser and enter the following address:

```
http://<Business Availability Center machine name or IP address>:8080/jmx-console.
```

where `<machine name or IP address>` is the machine on which Business Availability Center is installed.

Note: In the case of a distributed deployment, the machine name is the machine on which the Data Processing server is installed.

- 2** Click the JMX Console link. You may have to log in with the administrator’s user name and password.
- 3** Click the **Topaz > service=Fcmdb Config Services** link.
- 4** In the JMX MBEAN View page, locate the following operation:
`loadOrReloadCodeBaseForAdapterId()`.

- 5 In the customerID field, enter 1. In the AdapterId field, enter the name of the Adapter folder (ServiceDeskAdapter). Click **Invoke**.