

HP Universal CMDB, Universal Discovery, and Configuration Manager

Software Version: 10.20

End-to-End Workflow Walkthrough Guide

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Licensing Services: Upgrade UCMDB from a Previous Version to 10.20

This end-to-end workflow walkthrough scenario describes licensing services for upgrading UCMDB to 10.20 from a version earlier than 10.10. This workflow includes the following steps:

1. Upgrade UCMDB to version 10.20	4
2. Check the License summary report	4
3. Install licenses issued for UCMDB 10.20, check licenses details and license capacity using JMX console	7
4. Launch License summary report and check license usage	9
5. Review the counted OS instances in the Licensed OSIs Report	0
6. Install additional license capacity when you discover more OSs than you are licensed for	12

1. Upgrade UCMDB to version 10.20

For detailed instructions about upgrading UCMDB, see the HP Universal CMDB Deployment Guide.

2. Check the License summary report

The permissive Instant-On License is installed by default and is going to expire in 21 days.

- 1. Launch UCMDB UI as Admin user.
- 2. Click the **<License status>**[®] button on the status bar.

The License summary report window opens.

- 3. Check the License summary report.
 - Only Instant-On license is listed even though you have had some licenses installed when you
 worked with the previous version. The license issued for previous versions are not compatible

with UCMDB 10.20 and they are not visible.

- The UD Full license usage is not yet displayed even if there are discovered OSIs in your UCMDB.
 This is because they were not touched by Probe 10.20 yet.
- OSs managed by CM usage displays the number of OSIs belonging to the results of the managed in CM views.
- The Managed Data Repository (MDR) usage is displayed according to the third party integrations you have in UCMDB.
- Automated Service Modeling OOTB provides a capacity of 10 service discovery actions, which are always available regardless of what license are installed.
- The Automated Service Modeling usage is zero. This can be consumed since version 10.20.

	Expiring			×
Your license will expire soon.				
License summary				
Universal Discovery - Full: 0/20,000 - Usage: 0 % Available 3rd party integrations: 3/200 - Usage: 1 % Automated Service Modeling OOTB: 0/10 - Usage: 0 %		Aut		5/5,000 - Usage: 4 % ling: 0/500 - Usage: 0 %
Available licenses				
Status # License description		License type	Expiring date	License capacity
1 Instant-On License		INSTANT_ON	1/25/15 11:59 PM	1
Selected license Status: This license will expire soon. License description: Instant-On License License type: INSTANT_ON License capacity: 1			Expiring	date: N/A date: 1/25/15 11:59 PM ng days: 20
				OK Cancel

- 4. Wait for Probe 10.20 to run discovery.
- 5. Check the License summary again.

End-to-End Workflow Walkthrough Guide Licensing Services: Upgrade UCMDB from a Previous Version to 10.20

- The Instant-On license expiring in several days is listed.
- Universal Discovery Full usage is displayed according to how many discovered operating systems you have in UCMDB.
- OSs managed by CM usage displays the number of OSs that belong to the results of the managed in CM views
- The MDR usage is displayed according to the third party integrations you have in UCMDB.
- Automated Service Modeling OOTB provides a capacity of 10 service discovery actions, which are always available regardless of what license are installed.
- The Automated Service Modeling usage is zero. This can be consumed since version 10.20.

		Expiring			×	
PA		biring license will expire soon.				
Licen	se	summary				
🔁 🗉	ıl.					
Universal	Disc	overy - Full: 212/20,000 - Usage: 1 %	0	Ss managed by CM: 2	15/5,000 - Usage: 4 %	
Available 3	3rd p	arty integrations: 3/200 - Usage: 1 %	AL	tomated Service Mode	ling: 0/500 - Usage: 0 %	
Automated	l Ser	vice Modeling OOTB: 0/10 - Usage: 0 %	R	emaining days: 20		
Availa	able	licenses				
Status	#	License description	License type	Expiring date	License capacity	
۲	1	Instant-On License	INSTANT_ON	1/25/15 11:59 PM	1	
Selecte	Selected license					
Status: Th	Status: This license will expire soon. Starting date: N/A					
License d	License description: Instant-On License Expiring date: 1/25/15 11:59 PM					
License ty	License type: INSTANT_ON Remaining days: 20					
License c	License capacity: 1					
					OK Cancel	

3. Install licenses issued for UCMDB 10.20, check licenses details and license capacity using JMX console

Install the licenses issued for UCMDB 10.20, according to the contract you already have, by using
JMX Console > Licensing Services > addLicense.

When installing licenses, the Instant-On is overwritten.

For details, see the *How to Manage UCMDB Licenses Using the JMX Console* section in the *HP Universal CMDB JMX Reference Guide*.

JMX Search JMX List Operations Index (Current Server is a writer: myd-vm04584)

UCMDB:service=Licensing Services

Operations:	
addLicense	Install License
addLicenseFromFile	Install License from File
getAllActiveLicenses	Show All Active Licenses
getAllLicenses	Show All Licenses Including Expired and Invalid
getLicenseSummary	Show the License Summary of all Active Licenses
removeAllLicenses	Remove All the Installed Licenses (BACK UP FIRST!)

addLicense

Install Licen	se		
Name	Туре	Value	Description
customerID	java.lang.Integer		Customer ID
licenseKey	java.lang.String		Raw License Key
Invoke			

2. Check information about licenses details by using the **getAllLicenses** method of Licensing Services from the JMX console.

JMX Search JMX List Operations Index Back to MBean Reinvoke MBean (Current Server is a writer: myd-vm00862)

Mbean: UCMDB:service=Licensing Services. Method: getAllLicenses

Feature	Value
License	UCMDB-CM - Advanced Configuration Manager per OS Instance
Туре	TERM
Start Time	Wed Jan 07 02:00:00 IST 2015
End Time	Fri May 01 02:59:59 IDT 2015
Capacity	500
License	Universal Discovery Inventory per OS Instance
Туре	TERM
Start Time	Wed Jan 07 02:00:00 IST 2015
End Time	Fri May 01 02:59:59 IDT 2015
Capacity	300
License	HP UCMDB Automated Service Modeling pack of 10
Туре	TERM
Start Time	Wed Jan 07 02:00:00 IST 2015
End Time	Fri May 01 02:59:59 IDT 2015
Capacity	2
License	Universal Discovery per OS Instance
Туре	TERM
Start Time	Wed Jan 07 02:00:00 IST 2015
End Time	Fri May 01 02:59:59 IDT 2015
Capacity	200
License	UCMDB Third Party Integration per MDR
Туре	TERM
Start Time	Wed Jan 07 02:00:00 IST 2015
End Time	Fri May 01 02:59:59 IDT 2015
Capacity	15

3. Check information about licensed capacity by using the **getLicenseSummary** method of Licensing Services from the JMX console.

JMX Search JMX List Operations Index Back to MBean Reinvoke MBean (Current Server is a writer: myd-vm00862)

Mbean: UCMDB:service=Licensing Services. Method: getLicenseSummary

Feature	Value
Third Party MDR	15
Universal Discovery Inventory	300
Universal Discovery	200
Advanced Configuration Manager	500
Automated Service Modeling	20
UCMDB Foundation	true
Customer Type	BASE

4. Launch License summary report and check license usage

Launch License summary report from UCMDB UI and check the license usage, according to what capacity you are licensed for:

- The installed licenses details are displayed in Available licenses panel.
- UD Full usage number of OSIs discovered by Full discovery jobs
- UD Inventory usage number of OSIs discovered by Inventory discovery jobs
- OSIs managed by CM usage number of OSIs that are managed by CM
- Available third party integrations usage number of integrations with non HP products
- Advanced Service Modeling usage number of service discovery activities
- Oracle LMS in case you have license for Oracle LMS report
- Foundation in case you have Foundation license

End-to-End Workflow Walkthrough Guide Licensing Services: Upgrade UCMDB from a Previous Version to 10.20

		Compliant			
		mpliant			
~	AILI	censes are compliant.			
licen	20	summary			
	_	ourmary			
Iniversal	Disc	overy - Inventory only: 132/300 - Usage: 44 %	Universal	Discovery - Full: 80/20	00 - Usage: 40 %
)Ss mana	ged	by CM: 215/500 - Usage: 43 %	Available 3	Brd party integrations:	3/15 - Usage: 20 %
utomated	Sei	rvice Modeling: 0/20 - Usage: 0 %	Automated	Service Modeling OC	OTB: 3/10 - Usage: 30
S UCMDB	8 Fo	undation: Yes	Remaining	days: 114	
Availa	h	elicenses			
			License hme	Evoiring data	License canacit
Availa Status	#	License description	License type	Expiring date	
Status		License description UCMDB-CM - Advanced Configuration Manager per OS Instance	License type TERM TERM	Expiring date 5/1/15 2:59 AM 5/1/15 2:59 AM	License capacity 500 300
Status o	# 1	License description	TERM	5/1/15 2:59 AM	500
Status 0	# 1 2	License description UCMDB-CM - Advanced Configuration Manager per OS Instance Universal Discovery Inventory per OS Instance	TERM	5/1/15 2:59 AM 5/1/15 2:59 AM	500 300
Status 0 0	# 1 2 3	License description UCMDB-CM - Advanced Configuration Manager per OS Instance Universal Discovery Inventory per OS Instance HP UCMDB Automated Service Modeling pack of 10 Universal Discovery per OS Instance	TERM TERM TERM	5/1/15 2:59 AM 5/1/15 2:59 AM 5/1/15 2:59 AM	500 300 2
Status 0 0 0 0 0 Selecte tatus: Th	# 1 2 3 4 5 ed is lic escr pe:	License description UCMDB-CM - Advanced Configuration Manager per OS Instance Universal Discovery Inventory per OS Instance HP UCMDB Automated Service Modeling pack of 10 Universal Discovery per OS Instance UCMDB Third Party Integration per MDR License evense is active. iption: UCMDB-CM - Advanced Configuration Manager per OS Instance TERM	TERM TERM TERM TERM	5/1/15 2:59 AM 5/1/15 2:59 AM 5/1/15 2:59 AM 5/1/15 2:59 AM 5/1/15 2:59 AM 5/1/15 2:59 AM	300 2 200

5. Review the counted OS instances in the Licensed OSIs Report

- 1. Select Managers > Modeling > Reports. In the Custom Reports pane, click Administration and do one of the following:
 - Right-click Licensed OSIs Report and select Create New Report.
 - Double-click Licensed OSIs Report.
 - Select Licensed OSIs Report and drag it onto the right pane.
- 2. Review the counted OS instances in the Licensed OSIs Report:
 - OSs that are discovered by UD Full jobs have True in the UD Full column if they are covered by license capacity, "False" if not covered, and "-" if not applicable for the license type.

- OSs that are discovered by UD Inventory license have True in the UD Inventory column if they are covered by license capacity, "False" if not covered, and "-" if not applicable for the license type.
- OSs that are managed in Configuration Manager have True in the CM Managed column if they are covered by license capacity, "False" if not covered, and "-" if not applicable for the license type.
- The Third party licenses tab shows the integration points consuming capacity from the UCMDB third party integration license.
- The **ASM License** tab shows the service discovery activities created in UCMDB.
- If no capacity is consumed from a license type, the relevant column will not be displayed.

				Licensed Cls Third party license ASM Licen			
Show Cl instances of: Computer (215) 💌 🖹 🖆 🙆 Щ 🔄 🔍							
CI Identification	CI Type	UD Full	UD Inventory	CM Managed			
test207	Computer	-	true	true			
test208	Computer	-	true	true			
test209	Computer	-	true	true			
test21	Computer	-	true	true			
test22	Computer	-	true	true			
test23	Computer	-	true	true			
test24	Computer	-	true	true			
test25	Computer	-	true	true			
test26	Computer		true	true			
test27	Computer	-	true	true			
test28	Computer	-	true	true			
test29	Computer	-	true	true			
host_n333330de	Computer	true	-	true			
host_node	Computer	true	-	true			
est0	Computer	true	-	true			
test3	Computer	true	-	true			
test30	Computer	true	-	true			
test31	Computer	true	-	true			
test32	Computer	true	-	true			
test33	Computer	true	-	true			
test34	Computer	true	-	true			
5	1						

4 4
Licensed CIs Third party license ASM License
Adapter name
Import_CSV
Troux_To_UCMDB
TrouxPushAdapter

Licensed OSIs1* X	4 4
🖺 🕼 🔯 🗰 🔹 🎦 🔹 🔯	
	Licensed Cls Third party license ASM License
Show Cl instances of: Business Application (3)	
Display Label	ASM License
Financial	True
HR	True
Production	True

6. Install additional license capacity when you discover more OSs than you are licensed for

When discovering more Operating Systems than you are licensed for, you are still able to use UCMDB Server. However, the server status is Non-compliant.

1. Launch License Summary report to check what exceeded capacity is.

		Non-compliar	nt		×
PO		n-compliant have exceeded your permitted license usage.			
License summary Image: Inventory only: 0/300 - Usage: 0 % Universal Discovery - Inventory only: 0/300 - Usage: 0 % Universal Discovery - Full: 212/200 - Usage: 106 % OSs managed by CM: 215/500 - Usage: 43 % Automated Service Modeling: 0/20 - Usage: 0 % Automated Service Modeling: 0/20 - Usage: 0 %					
		Indation: Yes	Remaining	days: 114	
Availa	able	elicenses			
Status	#	License description	License type	Expiring date	License capacity
otatuo	1	UCMDB-CM - Advanced Configuration Manager per OS Instance	TERM	5/1/15 2:59 AM	500
	2	Universal Discovery Inventory per OS Instance	TERM	5/1/15 2:59 AM	300
۲	3		TERM	5/1/15 2:59 AM	2
٥	4	Universal Discovery per OS Instance	TERM	5/1/15 2:59 AM	200
۵	5	UCMDB Third Party Integration per MDR	TERM	5/1/15 2:59 AM	15
Status: Th License de License ty	Selected license Status: This license is active. License description: UCMDB-CM - Advanced Configuration Manager per OS Instance License type: TERM License capacity: 500			Expir	ng date: 1/7/15 2:00 AM ing date: 5/1/15 2:59 AM aining days: 114
					OK Cancel

2. In order to be compliant, you can install additional license capacity using the **addLicense** method in the JMX console.

JMX Search JMX List Operations Index Back to MBean Reinvoke MBean (Current Server is a writer: myd-vm00862)

Mbean: UCMDB:service=Licensing Services. Method: addLicense

Successfully Added:

Feature	Value
License	Universal Discovery per OS Instance
Туре	TERM
Start Time	Wed Jan 07 02:00:00 IST 2015
End Time	Fri May 01 03:00:00 IDT 2015
Capacity	100

3. In the JMX console, invoke the **getLicenseSummary** method to verify that the licensed capacity is increased.

JMX Search JMX List Operations Index Back to MBean Reinvoke MBean (Current Server is a writer: myd-vm04584)

Mbean: UCMDB:service=Licensing Services. Method: getLicenseSummary

Feature	Value
Third Party MDR	3
Universal Discovery Inventory	200
Universal Discovery	200
Advanced Configuration Manager	300
UCMDB Foundation	true
Customer Type	BASE

4. Launch License summary report again.

Now the UCMDB Server status is **Compliant**.

		Compliant			>
₽⊘		mpliant censes are compliant.			
Licen	se	summary			
🔒 🗉	<u>i</u>	-			
Universal	Disc	overy - Inventory only: 0/300 - Usage: 0 %	Universal I	Discovery - Full: 212/3	300 - Usage: 70 %
		by CM: 215/500 - Usage: 43 %	Available 3	and party integrations:	- 3/15 - Usage: 20 %
Automated	I Ser	vice Modeling: 0/20 - Usage: 0 %	Automated	Service Modeling OC) TB: 3/10 - Usage: 30
		indation: Yes		days: 114	
Availa	abl	e licenses			
Status	#	License description	License type	Expiring date	License capacity
٥	1	UCMDB-CM - Advanced Configuration Manager per OS Instance	TERM	5/1/15 2:59 AM	500
۲	2	Universal Discovery Inventory per OS Instance	TERM	5/1/15 2:59 AM	300
-	3	Universal Discovery per OS Instance	TERM	5/1/15 2:59 AM	100
٥					
9	4	HP UCMDB Automated Service Modeling pack of 10	TERM	5/1/15 2:59 AM	2
	4 5	HP UCMDB Automated Service Modeling pack of 10 Universal Discovery per OS Instance	TERM TERM	5/1/15 2:59 AM 5/1/15 2:59 AM	2 200
۲	5	The boling plant of the			-
o o Selecte	5 6 ed	Universal Discovery per OS Instance	TERM	5/1/15 2:59 AM 5/1/15 2:59 AM	200 15
e e Selecte Status: Th	5 6 ed	Universal Discovery per OS Instance UCMDB Third Party Integration per MDR icense	TERM	5/1/15 2:59 AM 5/1/15 2:59 AM Starti	200 15 ng date: 1/7/15 2:00 A
e e Status: Th	5 6 ed is lic	Universal Discovery per OS Instance UCMDB Third Party Integration per MDR icense ense is active. ption: UCMDB-CM - Advanced Configuration Manager per OS Instance	TERM	5/1/15 2:59 AM 5/1/15 2:59 AM Starti Expir	200
e e Status: Th License de	5 6 is lic escri pe: "	Universal Discovery per OS Instance UCMDB Third Party Integration per MDR icense ense is active. ption: UCMDB-CM - Advanced Configuration Manager per OS Instance TERM	TERM	5/1/15 2:59 AM 5/1/15 2:59 AM Starti Expir	200 15 ng date: 1/7/15 2:00 A ing date: 5/1/15 2:59 A

Create a Dynamic Widget from UCMDB

This end-to-end workflow walkthrough scenario describes how to create a Dynamic Widget from UCMDB and demonstrates the resulting widget in the UCMDB Browser.

This workflow includes the following steps:

1. Create a Dynamic Widget by using the Pattern View Editor	.15
2. Enable or disable the widget for different roles	.18
3. View the resulting widget in the UCMDB Browser	.18

1. Create a Dynamic Widget by using the Pattern View Editor

To create a Dynamic Widget, follow these steps:

- 1. Log on to UCMDB, and then open the Modeling Studio.
- 2. Click New 🔛, and then select Dynamic Widget.

The New Dynamic Widget window opens.

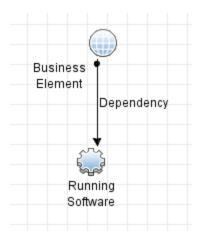
3. Select Create new query, and then click OK.

The Pattern View Editor opens.

4. From the **CI Types** pane, drag and drop the **BusinessElement** and **RunningSoftware** CI types into the **Query Definition** canvas, and then add a Dependency relationship between the two CITs.

For detailed instructions, refer to the *How to Add Query Nodes and Relationships to a TQL Query* section in the *HP Universal CMDB Modeling Guide*.

End-to-End Workflow Walkthrough Guide Create a Dynamic Widget from UCMDB



- 5. Right-click the **Business Element** query node in the canvas and then select **Set As Contact Query Node**.
- 6. Click the **Report** button to switch to the Report Definition mode. For each node, select and add any needed attributes into the **Report Layout** column.

Note: You can also add all the attributes for each node, and then enable the needed attributes in the **Widget** tab.

- 7. Click the **Widget** button to switch to the Widget Definition mode. Configure the values in the following four columns for each attribute:
 - Overview: Defines if the attribute is visible in the preview mode for the widget. Up to six attributes can be visible.
 - **Details**: Defines if the attribute appears after you click the **Details** button.
 - Refocusable: Defines if the value of the attribute appears as a link that directs to the CI to which the value belongs.
 - **Group Name**: Categorizes properties in groups.

Note: All the above configurations only apply to the Properties Mode widget type.

8. Select the top level of the tree in the **Hierarchy** pane, and then select one of the following mode in the **Widget Type** field.

End-to-End Workflow Walkthrough Guide Create a Dynamic Widget from UCMDB

- Properties Mode
- Topology Map Mode
- Topology CIT Group Mode
- Topology Textual Mode

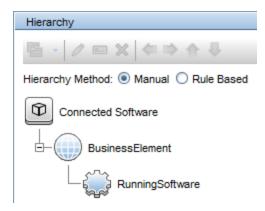
The Properties Mode displays attribute values from the nodes returned by the topology returned by the view that is created. All the other modes display a map of the topology.

Note: If you change the widget type, the UCMDB Browser user need to log off and log on again to see the change in the resulting widget.

9. (Optional) If you set the widget type to Properties Mode, you can also group nodes by CI Type so that the information presentation is more structured.

The following steps demonstrate how to add a grouping on the Running Software node:

 a. Click the View button to switch to the View mode. In the Hierarchy pane, drag and drop the RunningSoftware node under the BusinessElement node, as shown in the following screen shot.



- b. Right-click the RunningSoftware node, and then select Add Group By CI Type.
- 10. Click Save 🛅
- 11. Enter Connected Software in the View name field, and then click OK.

2. Enable or disable the widget for different roles

You can enable or disable the Dynamic Widget on a role basis. To do this, follow these steps:

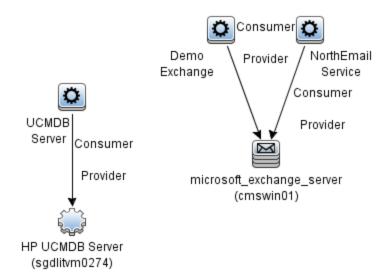
- 1. Go to Security > Roles Manager.
- 2. Select the role for which you want to enable the Dynamic Widget.
- 3. In the Resource tab, under Resource Types, select UCMDB Browser Widgets.

You can see the new Connected Software widget under Available UCMDB Browser Widgets.

4. Drag and drop the Connected Software widget to the **Selected UCMDB Browser Widgets With Permissions** column.

3. View the resulting widget in the UCMDB Browser

In the UCMDB Browser, to view the resulting widget of the Dynamic Widget created above, you need to search for a Business Element that has connected Running Software instances. If you do not know which Business Element has connected Running Software instances, you can preview the result of the Connected Software view from UCMDB and see which CIs have data. For example, the following result indicates that the NorthEmailService CI has data.



Therefore, you can search for NorthEmailService to view the data. The UCMDB Browser returns the result as shown in the following screen shot.

Note: Make sure that you log on as a user that has the permission to see the widget.

Search Reports Service Modeling	Notifications
north Q	Found 1 result
All results (1)	
	NorthEmailService
Special filters:	
Main CI Type	Q:
No CI Type Selected	
Name: Name Attribute (optional)	Type: Business application > BusinessA
Related CI Type	

The UCMDB Browser presents the information based on the configurations in step 7, 8, and 9 when you create the Dynamic Widget.

If the widget type is Properties Mode

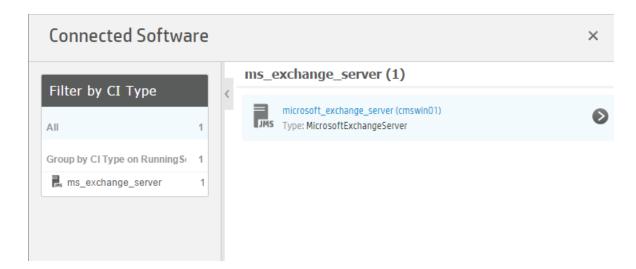
When you select the search result, you can see the following new widget.

CONNECTED SOFTWARE					
Create Time: Vendor:	Fri Jan 16 09:30:40 GMT+200 2015 microsoft_corp	ProductName: Version:	microsoft_exchange_server 2010		
	Details				

If the nodes are not grouped by CI Types, when you click the **Details** button, the detailed information is presented as follows. The attributes are grouped according to the defined group name.

APP INFO	
Application IP Routing Domain: Application IP Type: Application IP: Application Version Description:	DefaultDomain IPv4 16.155.192.80 Version 14.0 (Build 639.21)
ADDITIONAL PROPERTIES ProductName: Vendor: Version:	microsoft_exchange_server microsoft_corp 2010

If the nodes are grouped by CI Types, when you click the **Details** button, the detailed information is presented as follows.



If there are more than one Running Software, they will be listed under the exchange server.

You can select a CI to view its properties, as shown in the following screen shot.

Connected Softw	are
	<pre>hange_server (cmswin01) ftExchangeServer</pre>
APP INFO	
Application IP Routing Domain: Application IP Type: Application IP: Application Version Description:	DefaultDomain IPv4 16.155.192.80 Version 14.0 (Build 639.21)
ADDITIONAL PROPERTIES	
ProductName: Vendor: Version:	microsoft_exchange_server microsoft_corp 2010

For instructions on how to group nodes by CI Types, see Step 9 on page 17.

If the widget type is Topology Mode

When you click the search result, the new widget appears as follows.

End-to-End Workflow Walkthrough Guide Create a Dynamic Widget from UCMDB

CONN	ECTED SOFTWARE	^
5∞	Mail	1

When you hover the mouse over the widget and then click the **Details** button, the following map appears.

Connected Software					
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Generic Adapter Mapping UI

This end-to-end workflow walkthrough scenario describes how to integrate UCMDB with Service Manager in order to import the newly discovered 3D Printer CIs into Service Manager.

This workflow includes the following steps:

1. Create the new CI Type in UCMDB	23
2. Import the new CIs in UCMDB	24
3. Create the TQL query to see all the 3D Printer instances	. 25
4. Create the integration point to the Service Manager server	27
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6. Create the push job for the new CI Type and push the CIs to Service Manager	34

1. Create the new CI Type in UCMDB

Follow these steps to create the new 3D Printer CI Type in UCMDB:

- 1. Log on to UCMDB, and then open the CI Type Manager.
- 2. Select the **Node** element in the CI Types tree, and then click **New** 😹.

The new 3D Printer CI Type will be a child of the existing Node CI type.

3. Follow the Create CI Type Wizard to create the new CI Type.

For details about how to create a new CI Type, refer to the *How to Create a CI Type* section in the *HP Universal CMDB Modeling Guide*.

End-to-End Workflow Walkthrough Guide Generic Adapter Mapping UI

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2. Import the new CIs in UCMDB

Import the new CIs in UCMDB either by integration population or by discovery.

For more information, refer to the following topics in the *HP Universal CMDB Data Flow Management Guide*:

- How to Work with Population Jobs
- How to Run Module/Job-based Discovery

End-to-End Workflow Walkthrough Guide Generic Adapter Mapping UI

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(i) Data Flow Management			Allow CI Update True
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Security	Eind:	\bigcirc \bigcirc	BiosSource
	Search results count:3	0	BiosUuid
Module: IT Universe Manager	User: admin, Login time: 1/19/*	15 12:56 PM, Last login time	

3. Create the TQL query to see all the 3D Printer instances

Follow these steps to create the TQL query to see all the 3D Printer instances:

- 1. Go to the Modeling Studio, click **New** 🚵, and then click **Query**.
- 2. From the **CI Types** pane, locate the **3D Printer** CI type, and then drag and drop the **3D Printer** CI type into the **Query Definition** canvas.

Note: To preview the query result, click the Preview button \square .

Universal CMDB and	d Discovery	User; admin Customer: Default Client (Actual) License status: Expring in 11 days	Logout
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- 3. Right-click the 3D Printer query node, and then click **Query Node Properties**.
- 4. In the **Query Node Properties** window, make the following changes so that this TQL query can be used to push data to the Service Manager server.
 - a. Change the element name to Root to indicate the root of the TQL query.
 - b. In the **Element Layout** tab, select the **Select attributes for layout** option, add the **Name** and **Global Id** attributes to the **Specific Attributes** column.

These attributes will be pushed to Service Manager. You can add other attributes if you want.

Query Node Properties	er + Charlenter + Carlore	-	Contraction (1996) A. Antonio State of Con-	
Query Node Properties				
Enables you to add attributes, cardinality,	qualifiers and CI specific conditions			
nent name:	Element type:			
xot	3D Printer	•	Show element in query results	📕 Query Resi
			Attributes Element Type Ele	ment I avout I Identify
				inchi Luyout Inchity
Here you can define which attributes will be return /ou can choose to keep the default behavior, who		fine the layout to	include or exclude attributes in the query result according to the CI	Туре.
O No attributes				
Select attributes for layout				
CI Types	Conditions			
🐮 號 🔓 Tree View 🔹 🔍 — 🗐 3D Printer 🕸	Attributes condition Specific Attributes Attributes with the following qualifiers:	V		_
				•
	Available Attributes		Specific Attributes	
	Enable Aging	A	Name	
	ExtendedNodeFamily ExtendedOsFamily		Global Id	
	External ID		_	
	FAMILY_ICON global_id_scope	G	2	
	Has UDF License			
	Has UDI License Internal Name of a Node Monitored by SiteScope		2	
	Is Candidate For Deletion	=	Excluded Attributes	
	Language Last Access Time			
	LastModifiedTime	1		
	layer License Type			
	MemorySize			
Legend: 📦 All 🕸 Specific Attributes				

4. Create the integration point to the Service Manager server

Follow these steps to create the integration point to the Service Manager server:

- 1. Go to the Integration Studio, and then click **New Integration Point** 😹.
- 2. Specify the integration name.
- 3. Click Select Adapter . and then Select ServiceManagerEnhancedAdapter9.x.
- 4. Fill in the needed information. The following screen shot shows an example.

🛓 New Integration Point	
* New Integration	ı Point
Integration Propert	ies
* Integration Name	Service Manager
Integration Description	
Adapter	ServiceManagerEnhancedAdapter9.x
Is Integration Activated	
Adapter Properties	
* Hostname/IP	16.187.189.245
* Port	13080
URL Override	
* Credentials ID	Generic Protocol: sm
Development Mode	False
* Data Flow Probe	INDRIE4
Additional Probes	
 Mandatory Properties 	Test connection
	OK

- 5. Click the **Test connection** button to verify the connectivity to the Service Manager server.
- 6. Click **OK**.

5. Create the new CI Type and the mapping for the new CI Type in Service Manager

Follow these steps to create the new CI Type in Service Manager by using UCMDB's Mapping Tool and to create a mapping for the new 3D Printer CI Type:

1. Right-click the newly created integration point, and then click **Go to Adapter**.

The ServiceManagerEnhancedAdapter9.x adapter opens in Adapter Management.

- 2. To create the mapping file, make sure the **ServiceManagerEnhancedAdapter9-x** adapter is selected, click **New** , and then click **New Configuration File**.
- 3. Enter the mapping file name in the **Name** field.

Note: Include the full path in the Name field, for example:

ServiceManagerEnhancedAdapter9-x/mappings/push/SM 3D Printer Push.xml

4. Click **OK**, and then click **Yes** if you are prompted with the following message:

Do you want to open the configuration file with the new mapping tool editor?

The UI Mapping Tool opens.

- 5. Click Add New CI Type to External Class Model
- 6. Fill in the needed information for the new CI Type, and then click **OK**.

Add new node	X
1 1 2 3 5	ew node st define a new node's properties for an external class
General	
* Name:	3DPrinter
Description:	A new type of printer.
Metadata	
table	
subtype	
	OKCancel

Define the TQL query that provides the CIs need be pushed to Service Manager. To do this, click Add TQL Queries in the Local Query pane, and then select the previously created 3D Printers TQL query.

ServiceManagerEnhancedAdapter9-x/mappings/push/S	SM 3D Printer Push.xml	
Mapping Tool - Push Scenario		
🖺 13 😳		
External Class Model	Visual Mapping	Local Query Query, 3D Printers V 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
mainframe		
Attributes	XML Editor	Attributes
$I^{\otimes} \rightarrow$	오. 垣 🗒	(
Status Displ Name Type Des	<pre>1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?> * 2 <integration> 3 <info> 4 <source <="" <target="" info="" name="Product Name" vendor="Product Vendor" version="6"/> 7 <target_entities></target_entities> 8 </info></integration> 9 </pre>	Stat Dis Name Type Des 小 Glob glob STR A gl 小 Name name STR Stor

8. Select the Root node under the 3D Printers TQL query node in the **Local Query** pane, and then drag it onto the **Integration** node in the **Visual Mapping** pane.

This configuration indicates that the data source for this mapping is the 3D Printers TQL query rooted in the Root element.

Visual Mapping	Local Query
% ७ ″	Query: 3D Printers 💌 🞝 🔂 😫 📽 🗢
3D Printers Root	3D Printers

9. Select the Service Manager entities that will be created as a result of the mapping process. To do this, drag the 3DPrinter type from the **External Class Model** pane onto the 3D Printer TQL query

External Entity Class Model	
furnishings	
furnishings printer mainframe	

node in the Visual Mapping pane.

10. Drag the needed attributes of the Service Manager 3DPrinter type from the **Attributes** pane onto the 3DPrinter node in the **Visual Mapping** pane. In this case, the Type attribute and two mandatory attributes: Clldentifier and UCMDBId.

External	Class Mo	del			Visual Mapping	
S 🕏						
External Entity Class Model			el		3D Printers B-OD 3D Printers B-OD 3DPrinter	
- bizservice					Clidentifier Ignore on Null	
+-					UCMDBld Ignore on Null	
-0	- D furnishings				Type Ignore on Null	
	printer mainfrar			-		
Attribute	S				XML Editor	
					오. 4 🛗	
Status	Displ	Name	Туре		1 xml version="1.0" encoding="UTF-8" standalone="yes"?	
	defaul	DefaultG	STRI		2	

11. Double click each of the three attributes and enter the values as follows:

Type: `3dprinter'

The Type attribute need be passed to Service Manager as a string. Don not miss the single quotes, which are needed to differentiate a string constant from a variable.

• **UCMDBId**: Use the Global Id attribute from UCMDB.

To do this, drag the Global Id attribute from the **Attributes** pane onto the **UCMDBId** element in the **Visual Mapping** pane.

• **Clidentifier**: Use the Name attribute from UCMDB and make a small customization.

To do this, follow these steps:

- i. Double-click the **Clidentifier** element in the **Visual Mapping** pane, and then type Root [. A drop-down box appears and shows the available attributes for the Root TQL query element of the 3D Printer Cl Type.
- ii. Select Root['name'].
- iii. Continue type + ' ucmdb imported'.

The final value is Root['name'] + ' - ucmdb imported'.

The following screen shot shows the result of the mapping process.

ServiceManagerEnhancedAdapter9-x/mappings/pusl	/SM 3D Printer Push.xml			
Mapping Tool - Push Scenario				
External Class Model	Visual Mapping 𝔅, 𝔅 𝔅	Local Query Query: 3D Printers V 🕞 🔂 🗟 🐇 🌾		
External Entity Class Model	Integration	30 Printers		
Attributes	XML Editor	Attributes		
		Autobies		
Status Displ Name Type defaul DefaultG STRI * foor Floor STRI * id CIName STRI * istatus AssetStat STRI * iocation Location STRI * opera OS STRI * room Room STRI * serial SerialNo STRI * subtype STRI * * type Type STRI *	<pre>1 <?xml version="1.0" encoding="UTF-8" standalone="yes">></pre>	Stat Dis Name Type Des ① Glob glob STR Agl ① Name name STR Shor		

12. Click Save 🛅.

6. Create the push job for the new CI Type and push the CIs to Service Manager

Follow these steps to create the push job for the newly created 3D Printer CI Type and push the CIs to Service Manager:

- 1. Go to Adapter Management.
- 2. Right-click the **ServiceManagerEnhancedAdapter9-x** adapter, click **Go to Integration Point**, and then click the newly created integration point for Service Manager.

The Integration Studio opens.

- 3. Make sure the Service Manager integration point is selected, and then open the **Data Push** tab.
- 4. Click **New Integration Job** 🚵, and add the 3D Printers TQL query as follows.

New Inte	egration Job				X
~	New Integration Job Define the Integration Job details and sched	uling information			
lame SM	3D Printer Push				
ob Def	inition				
► × 1					
		ry Name			Allow Deletion
3D Printer	S				
	ler Definition				
-	ler enabled				
Repeat:	Once Interval	▼ 14:10 ▼	Ends: Never	O Until 1/20/15	V

- 5. Click Save Integration Point 🛅.
- 6. Select the newly created SM 3D Printer Push job, and then click **Full Synchronization** in the **Integration Jobs** section.

Service Manager				Populatio	n Federation	Data Push	
Data Push Jobs copy or update ("I Types and attributes from the l	ocal CMDB to an external data re	anositon (
	or rypes and attributes from the r	ocal CMDD to all external data re	spoaltory				
Intervation John							
Integration Jobs							
* 🖉 🗙 🔁 🖻 🔳 🗉	*						
Job N Full Synchronization - Runs the selected job, synchronizing all of the data			lata	Last Synchronization Type			
SM Push job		- Did not run		None			
SM 3D Printer Push	- Did no	- Did not run None		•			
Statistics Query Status							
C							
	1	1					
Query Name	Created	Updated	Dele		Failed		
Total	0	0	0	0	0		
Last Updated: Never (Valid 1	to: 01/20/2015 02:12:55 PM)						

7. Click **Refresh** to check if the job is finished.

Job Name	Status	Last Synchronization Type			
SM 3D Printer Push	Completed successfully	Full			
SM Push job	 Did not run 	None			

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