

HP Connect-It

Software version: 3.90

How to create a ServiceCenter ticket when data in Enterprise Discovery differs from the data that is stored in Asset Manager

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1 Overview

Who is this guide intended for?

This guide is intended for users with an administrator profile who have extensive knowledge of:

- The structure and features of Asset Manager
- The structure and features of Enterprise Discovery
- The structure and features of ServiceCenter
- How Connect-It operates

Prerequisites

The following software versions must be used:

- HP Connect-It 3.80 software or later
- HP Enterprise Discovery 2.0 software
- HP Asset Manager 5.0 software
- HP ServiceCenter 6.2 software

 **Warning:**

The scenario presented herein was developed using demonstration databases supplied with Asset Manager, ServiceCenter and Enterprise Discovery, and may need to be modified to fit the needs of your enterprise.

The Customer use case

More and more customers are moving to change the way they integrate their IT discovery tools with the store where they maintain their configuration items. Instead of blindly updating the information gathered by their discovery tools, customers want to ensure that changes comply with the expected state of their CIs. To do this, customers want incident tickets to be created if unexpected changes are detected.

In this paper, we will show how this can be accomplished using multiple HP Software products covering different parts of the process.

How it works

A Connect-It scenario is used to create tickets in ServiceCenter if the data that was returned by a scanner, such as Enterprise Discovery, are different from the data available in an Asset Manager database.

In this scenario, it is assumed that portfolio items are managed in Asset Manager and inventory data is retrieved by Enterprise Discovery.

2 The solution

The following solution is presented: A Connect-It scenario is used to create a ticket in ServiceCenter 6.2 if the data that was returned by the Enterprise Discovery inventory tool, are different from the data in the Asset Manager computers table.

The approach

When designing the scenario, the data processing mode is selected depending on the problem that you want to resolve.

Depending on our initial problem, a ticket is created in ServiceCenter depending on the data returned by Enterprise Discovery, two approaches are possible.

The first approach, which has not been selected, is as follows: The scenario has two phases. In the first phase, the scenario operates in insert mode. The inventory tool populates the Asset Manager database with the data discovered by the inventory tool for the first time. In the second phase, the scenario operates in update mode. Connect-It updates the destination database if the data returned by the inventory tool has changed since the database was first populated.

This approach has the following limitations:

- Creating a two phase scenario is done to provide a solution to database migration/population needs, improve data processing times and increase the performance of a scenario.

- According to our initial assumption, we do not want to update data in Asset Manager if it has changed, but instead create a ticket in ServiceCenter. It is not logical to create a two-phase scenario, if the second phase needs to query the Asset Manager database and take into account source data without updating the destination database. Thus there is no purpose to create an update scenario that does not update anything and that only inserts data in ServiceCenter.

The second and preferred approach is to have a scenario that processes data depending on their status in both databases. If the data returned by the scanner is the same as the data in the Asset Manager database, then the data in Asset Manager is not updated. If the data in any of the monitored fields is different, then the document type is instructed to wait and a processing report is produced to enable the creation of a ticket in ServiceCenter. Instructing the document to wait implies that no data is inserted into Asset Manager.

Specificities of the reconciliation scripts

Connect-It has specific features linked to certain connectors, notably, the Asset Manager and ServiceCenter connectors. These connectors make use of the reconciliation tool. Reconciliation is based on a comparison of data to insert and data present in the target database.

In the implemented scenario, reconciliation and the associated reconciliation script are based on arbitrary parameters that must take into account client specificities and business objectives. It is assumed that the elements relative to a Configuration Item (or computer in Connect-It) that make up the incident creation database have been taken into account.

► Connect-It - Connectors, Consumption directives, Using the reconciliation tab.

Possible scenario changes

The behavior of the demonstration scenario is as follows: If the scanned data is not the same for any of the monitored fields, then an incident is created. If none of the monitored fields are different but some of the other non-monitored fields have changes then the data is updated.

Next, post-incident management must be handled via another scenario. Once the ticket is closed in ServiceCenter, a feedback loop can update the desired record in Asset Manager or open a reconciliation proposal to have the value returned by the inventory tool equal the value stored in the Asset Manager database.

You can use the `acsc-incident.scn` demonstration scenario that is based on the reconciliation proposals. This scenario provides functionality specific to Asset

Manager and enables post-incident management in ServiceCenter. This aspect of post-incident management will not be explained in this paper.

Customizing events in ServiceCenter 6.2

In order for your scenario to function correctly, you must customize the ServiceCenter event used to create an incident. This event is the *epmo* event. Customizing the *epmo* event is done to expose relevant event fields in Connect-It and allows an incident to be created in ServiceCenter.

To customize this event, you need to use a ServiceCenter 6.2 client and login as the user falcon.

The following fields are used in the event:

- **Incident Detail** tab
 - Manufacturer
 - Hot Ticket
 - User Priority
 - Type
 - CI is operational (no outage)
- **Associate CI/ Hardware Operating System** tab
 - Platform Manufacturer (Associate CI/ Hardware Operating System)
 - Model (Associate CI/ Hardware Operating System)
 - Serial Number (Associate CI/ Hardware Operating System)
 - Operating System (Associate CI/ Hardware Operating System)

- OS version (Associate CI/ Hardware Operating System)

Map Name	Seq	Pos	File Name	Field Name	Query
e problem open	1	33	probsummary	severity.code	
e problem open	1	34	probsummary	assignment	
e problem open	1	35	probsummary	problem.status	
e problem open	1	36	probsummary	originating.system	
e problem open	1	37	probsummary	company	
e problem open	1	38	probsummary	ticket.owner	
e problem open	1	39	probsummary	user.priority	
e problem open	1	40	probsummary	hot.tic	
e problem open	1	41	probsummary	operating.system	
e problem open	1	42	probsummary	os.release.model	

OK Cancel Previous Next Add Save Delete Find Fill

Event Map

Map Name: Type: Fixed or Variable:

Sequence: Position: Length:

Basics Expressions

File Name:

Query:

Field Name: Nullsub:

Data Type: Translate:

To customize the *epmo* event:

- 1 Execute the *db* command
- 2 In the **Form** field, specify *Event*
- 3 Select *event.map* and double-click it
- 4 In the **Map Name** field, enter *e problem open*
All fields exposed by the service are displayed.
- 5 Select the last available field for the *probsummary* file and use it to expose the additional available fields for the *empo* event:
 - Increment its position (**Position** field)
 - Populate the **Field Name** field with the name of the field that needs to be exposed by the event, *user.priority*
 - Click **Add**
You just added the *user.priority* field from the table of incidents, **Incident Details** tab.
 - Click **Save**
- 6 Repeat the operation for the following fields:

- *hot.tic*
- *operating.system*
- *os.release.model*
- *operational.device*
- *brief.description*

Implementing the scenario

Configuring connectors

Connectors for this scenario are configured as described in the Connect-It - Connectors guide:

- Connect-It - Connectors, HP Enterprise Discovery connector
- Connect-It - Connectors, HP Asset Manager connector
- Connect-It - Connectors, HP ServiceCenter connector

Specific options used for each of the connectors are the following:

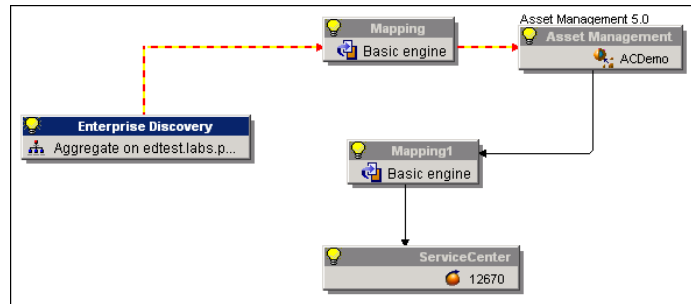
- Enterprise Discovery connector
 - Specification of a user with an administrator profile, in order to have access to all database data.
 - Use of a cache file.
- Asset Manager connector
 - Specification of a user with an administrator profile, in order to have access to all database data.
- ServiceCenter connector
 - Specification of a user with an administrator profile, in order to have access to all database data.

Scenario

The scenario can be broken down into two parts:

- Transfer data between an Enterprise Discovery and Asset Manager database
- Transfer data between an Asset Manager and ServiceCenter database

Enterprise Discovery - Asset Manager mapping



Business approach

The scenario used here is based on the scenario/ed/ed22/ed22ac50/edac.scn demonstration scenario. This scenario lets you migrate inventory data related to computer type portfolio items (CIs) to an Asset Manager database.

► Connect-It - Connectors, Out-of-the-box scenarios, Enterprise Discovery scenarios.

A simplified scenario is used for this solution. The data used is limited to computers that have already been discovered on the network via Enterprise Discovery. Network elements, interconnections and computers that have not been discovered are not processed.

If only non-monitored data fields returned by the Enterprise Discovery connector are different from the data in the Asset Manager database, then the Asset Manager database is updated.

If any of the monitored data fields returned by the Enterprise Discovery connector is different from the data in the Asset Manager database, then the produced document is instructed to wait and the Asset Manager database is not updated.

Produced document-type

The Enterprise Discovery connector produces data defined in the *Scanned-Computers* document type.

Information related to a computer are as follows:

- Description
- Type
- BIOS
- CPU type, CPU power
- Disk size
- Screen resolution, graphical adapter used

- OS type and version
- Sound card name
- IP address
- Workgroup to which the computer belongs

Filter using IP addresses

In order to facilitate the processing of data returned by the inventory tool, a filter is applied for the Scanned-Computers produced document type. This filter is used for an IP address range.

Depending on your enterprise's asset tracking policy, you may only need to implement advanced monitoring for elements that are vital to the network, such as production servers, and choose not to monitor less important IT elements, such as a workstation.

The approach that has been selected is to filter on the IP address of the machine. It is assumed that machines which are vital to the network have been assigned static IP addresses. This may be different from one organization to the next.

The filter applied on the document type is a WHERE clause.

To change the filtered addresses, modify the WHERE clause defined for the *Devices* root of the Scanned-Computers document type.

```
[Device_PREFERREDIPAddress] LIKE '111.111.4.%'
```

We recommend leaving this filter enabled to begin with in order to test the solution on a reduced number of machines.

Mapping

The document in the mapping box will look like this:

amComputer	
AssetTag	UCASE(EDD1GetACAAssetTag [...])
BIOSAssetTag	[hwBiosData.hwBiosAssetTag]
Portfolio	
Asset	
SerialNo	[hwBiosData.hwBiosSerialNum...]
Model	
CPUType	[hwCpuData.hwCPU(s)0].hwCP...
Name	ToSmart(EDD1GetComputerMo...)
Brand	
Nature	
Parent	
AddOn	If [SW/SubComponents.Softwar...]
AddOn#1	If [hwVideoData.hwDisplayMoni...]
AddOn#2	
ExtensionCards	' Insert only new Extension Card...
LogicalDrives	if [hwDiskData.hwMountPoints...]
NetworkCards	
PhysicalDrives	

This document type, *amComputer*, presents the Asset Manager fields and their corresponding fields for the *Devices* produced document.

Note that the mapping starts from the created item, the computer, and links to the elements that are used to create (portfolio item, model, nature). This is the opposite of the creation process used by Asset Manager, which calls all the elements (nature, model) that are required to create and insert an item.

Each element that makes up the amComputer document is linked to a Devices document type element and has:

- A reconciliation key to ensure the uniqueness of produced data
- A mapping script used to avoid data collision
- Possibly, a reconciliation script that can be used to update data in a target database depending on the data that was produced.

The mappings between Enterprise Discovery and Asset Manager are explained in detail in a separate document.

▶ [Connect-It - Asset Manager Database Integration Solution / Mapping - Example.](#)

A reconciliation script is provided for each critical element that requires monitoring.

In the current scenario, the following elements have been designated as requiring monitoring and have a reconciliation script linked to them:

- IMemorySizeMb
- LogicalDrives.ITotalSizeMb

▶ [Reconciliation scripts](#) [page 15].

If the value returned for one of these fields by the Enterprise Discovery connector is different from the value in the Asset Manager database, the produced document is instructed to wait and a message is saved in the document log.

The warning message is saved to the document log when the Asset Manager connector is selected.

 **Note:**

If no information is available in the document log, check the following parameters:

- Make sure the document log has been enabled and set to save all information (**Monitors/ Configure monitors/ Enable Document Log monitor** menu).
- No filter is selected when viewing messages in the document log (select connector, **Document log** tab, **Enable Document Log monitor** option, the value of the **Filter** field is *Normal processing*).

Use the **PifLogWarningMsg** function to modify how the message is displayed. Use this function to change the level of importance of the message saved in the document log.

▶ [Connect-It - Asset Manager Database Integration Solution, Mapping - Example.](#)

Maptables

Maptables were created to enable data to be migrated from Enterprise Discovery to Asset Manager. They may need to be modified to adapt them to your needs.

Maptables are available via the **Scenario/ Mappable editor** menu.

The following maptables are used for the scenario:

- config/ed/mpt/ed21/ed.mpt
- config/ac/mpt/ac.mpt
- ▶ Connect-It - User's Guide, Implementing a scenario, Defining mapping scripts, Editing associated files.

Global functions

The following global function was created:

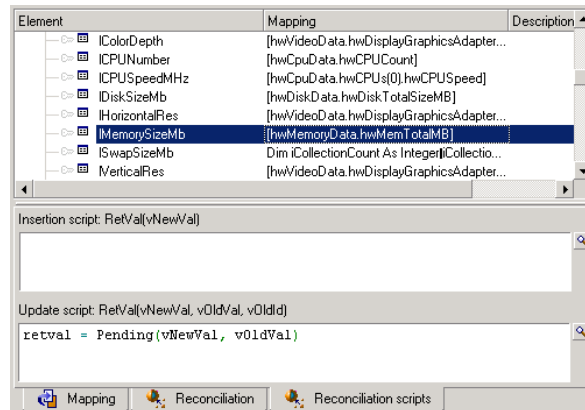
```
-----  
' SC Incident  
-----  
-----  
Function Pending (ByVal VNewVal As Variant, _  
ByVal VOldVal As Variant) As Variant  
If VNewVal = VOldVal Then  
Pending = VNewVal  
Else  
PifSetPendingDocument ("Incident_Creation")  
'----- log warning message -----  
' PifLogWarningMsg("Incident_Creation")  
'-----  
Pending = ""  
End If  
End Function
```

This function is called for each of the fields that the query will cover and is used to detect whether or not the data collected by the Enterprise Discovery connector is different from the data in the Asset Manager database. Depending on the result the produced document may be instructed to wait.

Reconciliation scripts

Each field to be monitored has the following reconciliation script:

```
retval = Pending(vNewVal, vOldVal)
```



If the value of the *IMemorySizeMb* field in Asset Manager is not the same as the value returned by the Enterprise Discovery scanner, the value saved in the Asset Manager database is not updated. The *pending* function instructs the produced document, which will be processed by the second mapping between the Asset Manager connector and the ServiceCenter connector, to wait in order to create an incident in the ServiceCenter database.

In this scenario, the following fields are tracked:

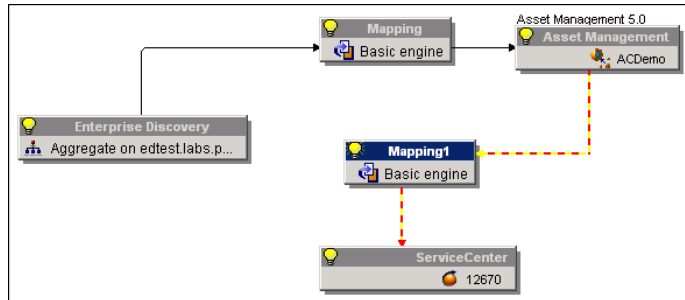
- *IMemorySizeMb*
- *LogicalDrives.ITotalSizeMb*

Asset Manager - ServiceCenter Mapping

Business approach

The scenario used here is based on the scenario/scac/sc62ac50/acsc-incident.scn demonstration scenario. This scenario is used to create an incident in

ServiceCenter using the epmo event depending on the reconciliation proposals saved in the Asset Manager database.



The scenario used as part of this solution is a simplified version of the acsc-incident scenario and uses its mapping structure.

Global functions

No global function from the acsc-incident demonstration scenario is used in this example. These functions were created as part of an integrity rule between an Asset Manager database and a ServiceCenter database in order to uniquely identify the same computer saved in both databases.

Updating the Asset Manager database depending on the processing status of the ticket created in ServiceCenter is not required by our scenario's approach. Thus it is not required to create a loop between the Asset Manager connector and the ServiceCenter connector.

Maptable

A maptable was created in order to populate the *operating.system* field in ServiceCenter.

This field contains the names of the different operating systems. As the names of the operating systems are not specified in the same manner in the various databases that are used, a maptable is used to correctly link the data in the Asset Manager and ServiceCenter databases.

The maptable has the following format:

```
{ MapTable SCOS  
Windows 2003 Server Enterprise Edition | MS Windows NT  
}
```

We recommend saving the maptable in the config/sc folder.

The corresponding value to insert in the ServiceCenter database is called via the PifMapValue function.

The call script has the following format:

```
pifMapValue([${ParentDoc$.OperatingSystem}], "SCOS", 1, "")
```

The function retrieves equivalent data from the OS mactable.

Matables are available via the **Scenario/ Matables** menu.

- ▶ Connect-It - User's Guide, Implementing a scenario, Defining mapping scripts, Editing associated files.

Produced document-type

In this scenario, the Asset Manager connector produces regular document types that can be seen in the demonstration scenarios (amComputer) and a processing report whose status is used to determine whether an incident should be created in ServiceCenter.

The amComputer document type is not used in the mapping between the Asset Manager connector and the ServiceCenter connector but it must be produced as it contains data required to create the event that triggers the creation of an incident in ServiceCenter.

Processing report

The Asset Manager connector produces a processing report whose status is used when determining whether or not an incident ticket should be created in ServiceCenter.

If the status of the processing report is *pending*, (equal to 1), then the mapping is carried out and the fields in the epmo table are populated with the values of the processing report parent document (the amComputer document type).

If the status of the processing report is *not pending*, (equal to 0), then the mapping is ignored.

Mapping

A mapping is created between the Asset Manager and ServiceCenter connectors.

Field	Value/Expression
assignment	"HELPDESK"
category	"client system"
hot tic	RetVal = 1
logical.name	[\${ParentDoc\$.AssetTag}]
model	[\${ParentDoc\$.Portfolio.Asset.Model.Name}]
problem.status	"Open"
problem.type	"system unit"
product.type	"desktop"
severity.code	"3 - Medium"
site.category	"A - Critical Site"
subcategory	"hardware"
system	[\${ParentDoc\$.OperatingSystem}]
type	"computer"
user.priority	"Major"
vendor	[\${ParentDoc\$.BIOSSource}]
EventFormatFields	
evpswd	
evsepchar	
evsysseq	
evuser	"Connect-It"
evusercan	

This mapping is used to:

- Create an incident ticket in ServiceCenter depending on the processing status returned by the processing report. A script is populated at the document root.
- Define the structure of the ticket (category, subcategory, product type, product problem) according to a predefined schema.
- Populate the incident's most important fields with data present in the Asset Manager database

The following scripts are populated:

Source	Destination	Mapping script	Comments
Pending	epmo	If [pending] = 0 Then PifIgnoreDocumentMapping End If	The mapping is carried out depending on the value of the Pending field.
	assignment	"HELPDESK"	Value used to assign the ticket to the HELPDESK group.
	category	"client system"	Value for the ticket creation. The values of the problem.type, product.type, subcategory and type fields in the ServiceCenter demonstration database depend on this value.
	hot.tic	RetVal = 1	Value used to enable the Hot Ticket option. If the value is 0, the Hot Ticket option is not enabled.
AssetTag	logical.name	[\$ParentDoc\$.AssetTag]	Asset Manager identifier of the CI for which a ticket has been opened. As the information is not available in the processing report, you can use the \$parentdoc\$ variable to retrieve the information contained in the amComputer parent document type.
Portfolio.As- set.Mod- el.Name	model	[\$ParentDoc\$.Portfolio.Ass et.Model.Name]	Name of the Asset Manager model associated with the computer. As the information is not available in the processing report, you can use the \$parentdoc\$ variable to retrieve the information contained in the amComputer parent document type.

Source	Destination	Mapping script	Comments
OperatingSystem	operating.system	[\$ParentDoc\$.OperatingSystem]	Name of the OS installed on the computer being tracked by Asset Manager. As the information is not available in the processing report, you can use the \$parentdoc\$ variable to retrieve the information contained in the amComputer parent document type.
	problem.status	"Open"	Value used to define the status of the ticket in ServiceCenter. Open, in this example.
	problem.type	"system unit"	Value for the ticket creation. This value is linked to the value in the product.type field.
	product.type	"desktop"	Value for the ticket creation. This value is linked to the value in the subcategory field.
	severity.code	"3 - Medium"	Level of importance of the ticket.
	short.description	"Value does not match"	Name of the ticket
	site.category	" A - Critical Site"	Level of importance of the site.
	subcategory	"hardware"	Value for the ticket creation. This value is linked to the value in the category field.
	type	"computer"	Value for the Type field on the Associated CI tab.
	user.priority	"Major"	Value used to define the user priority.
BIOSSource	vendor	[\$ParentDoc\$.BIOSSource]	Value for the Platform Manufacturer field on the Associated CI tab.

Produced data

When data produced by the Enterprise Discovery connector does not correspond to the data in the Asset Manager database, Connect-It creates a ServiceCenter event that enables an incident ticket to be opened in ServiceCenter.

The data produced by the ServiceCenter connector corresponds to the mapping described above. The following is what can be seen in ServiceCenter, the red arrows indicate the fields that are populated by Connect-It.

Incident Details tab:

Incident D...	Activities	Contact	Associate...	Attachment	History	Alerts	Related R...	Billing In...
Alert Status:	updated			Owner:	Connect-It			
Category:	client system			Primary Asgn Group:	HELPDESK			
Subcategory:	hardware			Assignee Name:				
Product Type:	desktop			Second Asgn Group:				
Problem Type:	system unit			<input checked="" type="checkbox"/> Hot Ticket	<input type="checkbox"/> Total Loss of Service			
Manufacturer:	(C)Copyright COMPAQ Com			Severity:	3 - Medium			
Class:				User Priority:	Major			
Contact Time:				Site Category:	B - Major Site			
Service Contract:				Cause Code:				
Company:	ACME			Site:				
Contact:	BROWN, NICHOLAS			Phone / extension:	(770) 954-4588		243	

Associated CI/ General tab:

Incident ...	Activities	Contact	Associat...	Attachment	History	Alerts	Related ...	Billing I...	
<div style="display: flex; border-bottom: 1px solid black;"> General Hardware / Operating System Failing Component </div>									
Configuration Item:	D2D26F6F040A			Type:	computer				
Outage Start:	08/28/07 11:00:15			Outage End:					
Cost Center:				Make:					
Serial No.:				Model:					
Description:									
<input type="checkbox"/> CI is operational (no outage)				<input type="checkbox"/> Critical CI					<input type="checkbox"/> Pending Change

Associated CI/ Hardware / Operating System tab:

General	Hardware / Operating System	Failing Component
Hardware Details		
Platform Manufacturer:	(C)Copyright COMPAQ Computer Corporation 1982,05*** - oCopyright	
Model:	Prollant D360 G4P	
Serial Number:		
Operating System Details		
Operating System:	MS Windows NT	
OS Version:		
Service Level/Pack:		

