White Paper - Integrating HP Asset Manager Data Center Infrastructure Management with HP Asset Manager

White Paper Contents

Introduction 4
Purpose of this White Paper 4
What are the benefits of this integration? 4
Who the integration will affect 6

Overview 7
Procurement and Provisioning Use Case 7
System Enhancements 8
Terminology 11

Implementing Required Components 12
Supported component versions 12
Installing the integration package 12
Prerequisites 12
Installing the Connect-It scenarios and connectors 13
Customizing Connect-It 14
Note on the Web Services Connector 14
Configuring the Connectors in the Connect-It scenarios 14
Configuring the mapping in the **amdcim_provisioning.scn** Connect-It scenario 16
Customizing Asset Manager to support the integration 18
Database customization 18
Add new fields in existing tables 18
Define Read only, Irrelevance, Mandatory and Default scripts for the new fields 19
Define help text for the new fields 19
Modify the Validity script of the **Requests** (amRequest) table 20
Add an index in the **Requests** (amRequest) table 20
Add a new calculated field 21
Modify screens 22
Modifying the URL for the *DCIM Location* (sysCoreWebDCIMAssetLocation) Calculated field 29
Customizing DCIM to support the integration 31

Creating and Updating Reference Information 36
Overview - Logical architecture 36

Running the Connect-It Scenarios ... 36
Reference data synchronization ... 37
Post synchronization tasks ... 37

Procurement and Provisioning Workflows ... 38
Summary Workflow ... 38
1. Request new device(s) to install in a data center ... 39
Create Asset Manager Request ... 39
Add Asset Manager Request Lines ... 42
2. Validate the Asset Manager Request ... 44
3a. Connect-It transmits the Request to DCIM ... 44
3b. Connect-It adds device records to newly created install request ... 44
4a. Raise Asset Manager Purchase Orders for new devices ... 44
4b. Receive devices ... 45
4c. Reserve devices ... 47
4d. Provision DCIM Request ... 48
5. Asset Manager notifies DCIM that install can proceed ... 54
6. Schedule Installation ... 54
7. Execute DCIM Request ... 55
8. Close DCIM Request ... 55
9. DCIM sets Portfolio Item **Assignment** (seAssignment) field to In Use ... 55
10. DCIM creates devices in the Repository database ... 55
11. DCIM Transmits location of devices to Asset Manager database ... 55
12. Asset Manager transmits Barcode and Serial numbers to DCIM database ... 55
13. Close Asset Manager Request ... 55
Asynchronous Activities ... 56
Tracking Request progress with Asset Manager ... 56
Displaying the location of a device installed through DCIM ... 56
View Assets and Requests by Project in Asset Manager ... 57
Reporting on Data Center installations ... 59
Overview ... 59
Installing and running the report ... 60
Summary ... 61
Frequently Asked Questions ... 61
Reference Documents ... 62

Support ... 63
HP Software support Web site ... 63
Limited responsibility clause ... 63

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Introduction

Purpose of this White Paper

This White Paper covers three areas:

- It explains the benefits of integrating **HP Asset Manager Data Center Infrastructure Management (DCIM)** with **HP Asset Manager**.
- It outlines the technical solution underlying this integration, and the practical steps needed to implement it.
- It explains the enhanced user facilities that the integration provides in both systems, and Best Practice procedures for using them.

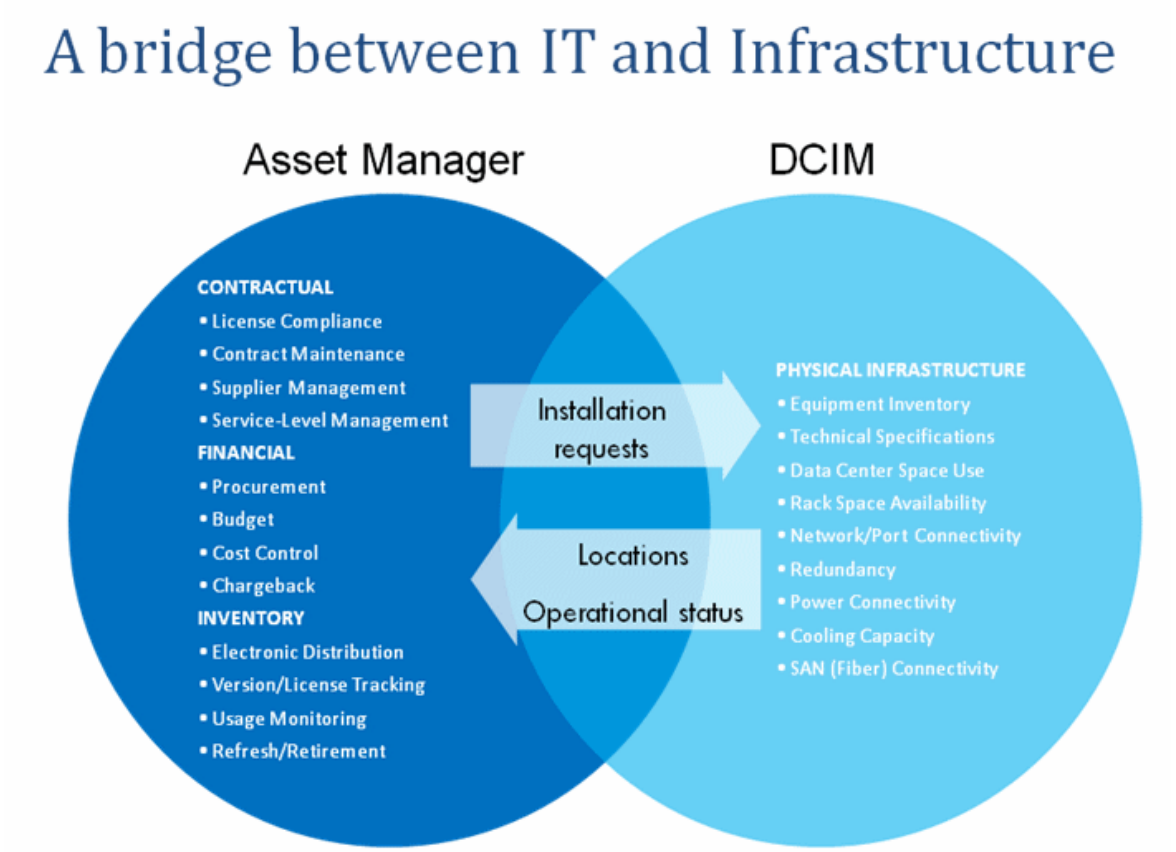
What are the benefits of this integration?

Integrating market-leading systems for Asset Management and Data Center Management provides substantial, wide-ranging benefits, at a low premium to the base cost of the two systems.

Integration between Asset Manager and DCIM provides a common ground for Data Center Managers and Procurement Managers to:

- Use powerful tools to monitor and report on data center operations
- Proactively manage capacity, based on business and IT forecasts:
    - Accurately predict new data center requirements
    - Manage consolidation projects
    - Right-size infrastructure resources
    - Stretch lifespan of existing data centers
    - Maximize ROI (Return on Investment)
- Make operational improvements
    - decrease time to provision equipment
    - reinforce 24x7 availability
- Enforce industry Best Practices via integrated and standardized processes: integration between the end-to-end procurement process and the provisioning process. Integration offers enhanced reliability and overall quality
- Perform compliance tracking and reporting
- Access enhanced inventory and floor plan information
- Improve energy efficiency (green initiatives)
- Offset rising energy costs

The following schematic summarizes the key processes impacted by Asset Management and Infrastructure Management, and how this integration helps bridge the gap.



As a result of this integration, Asset Manager's powerful procurement capabilities are complemented by the fine-tuned Data Center management and provisioning facilities of DCIM. The two workflows, for procurement and provisioning, can progress in parallel - synchronized and controlled at key status points.

Consider the key scenario where a new device needs to be installed in a Data Center. A user requests the new device in Asset Manager through a classical request. The device he wants to be installed is added to a request. A corresponding request is created in DCIM, to which more detailed installation details can be added.

Two workflows are then managed:

- **In Asset Manager: the procurement workflow starts**. The request is validated. New equipment is ordered if necessary, and eventually reserved from stock for the installation.

- **In DCIM: the provisioning workflow starts**. The power, network, space and storage are provisioned for the new devices to be installed.

For details of how these workflows operate in practice, see the section Procurement and Provisioning Workflows, on page 38.

Note : HP Asset Manager Data Center Infrastructure Management (DCIM) is a packaged version of Aperture VISTA. Clients who purchase DCIM will receive and install Aperture VISTA. When you run Aperture VISTA, you will not see DCIM used in the interface. Links to Aperture VISTA from Asset Manager refer to it as DCIM. For the rest of this White Paper, DCIM will be used to refer to Aperture VISTA.

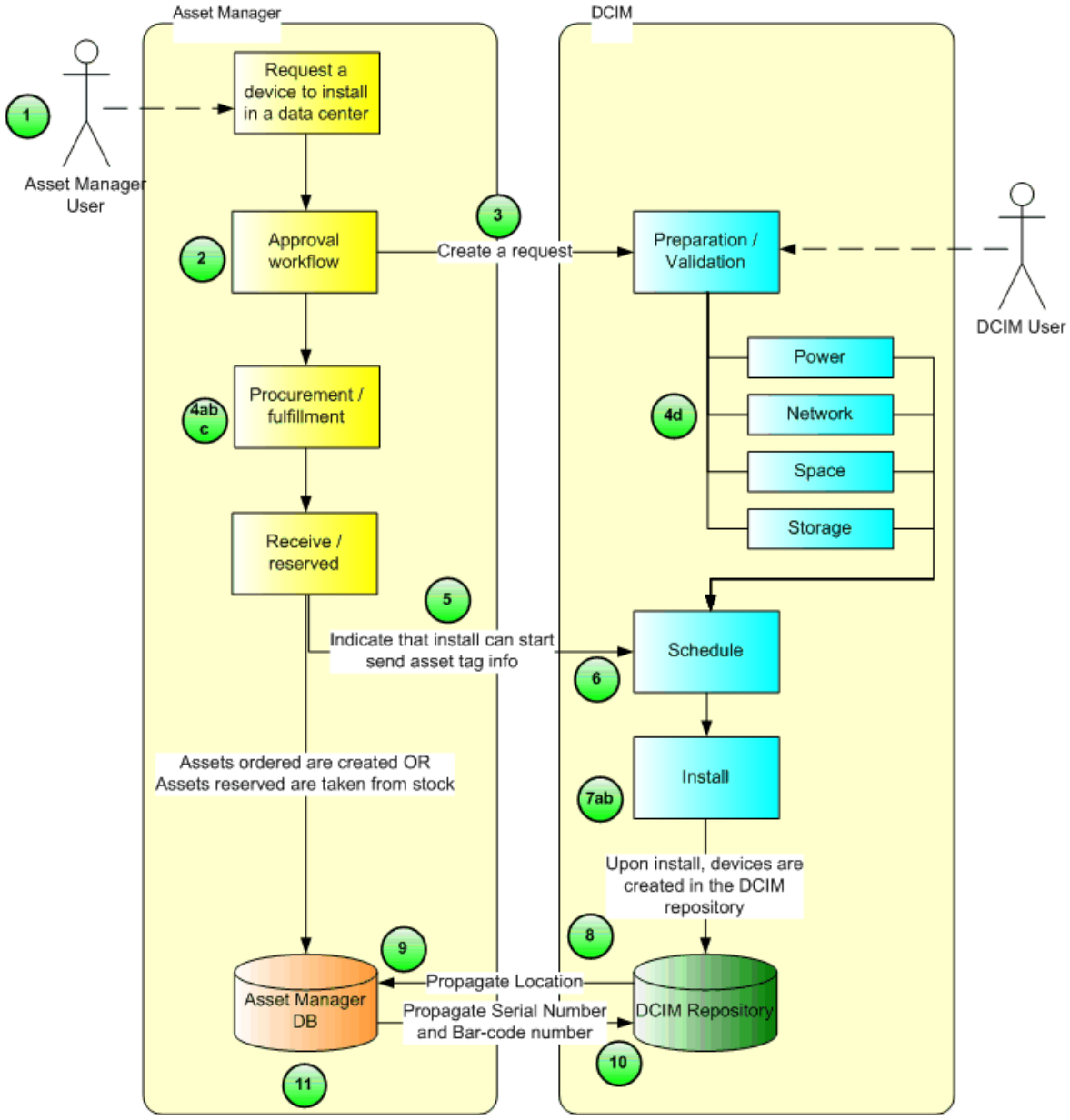
Who the integration will affect

This integration will streamline and enhance the workflows used by Procurement Teams and Data Center Provisioning Teams.

Overview

Procurement and Provisioning Use Case

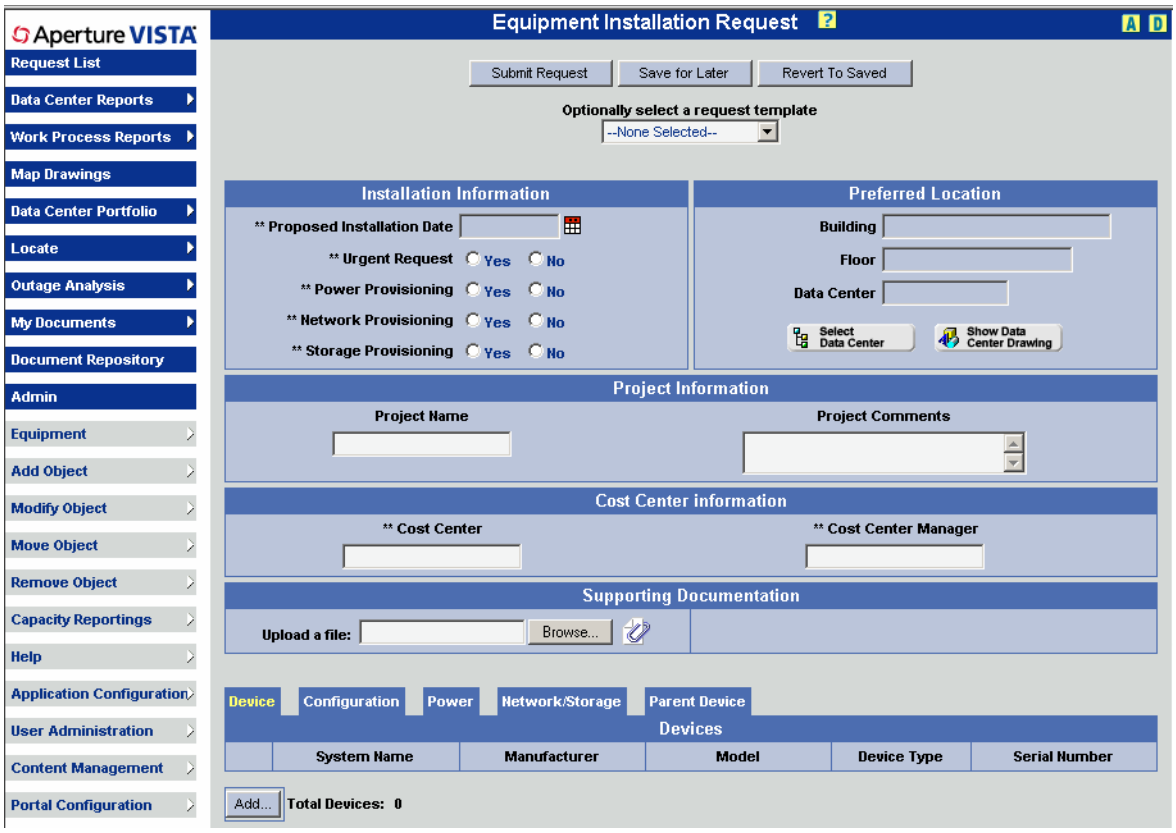
The schematic below gives an overview of how a request is initiated in Asset Manager, how procurement and provisioning proceed in parallel; and how actual installation is scheduled and fulfilled in DCIM.



Note: Process step numbers correspond to the steps in the Summary Workflow table later in this document.

System Enhancements

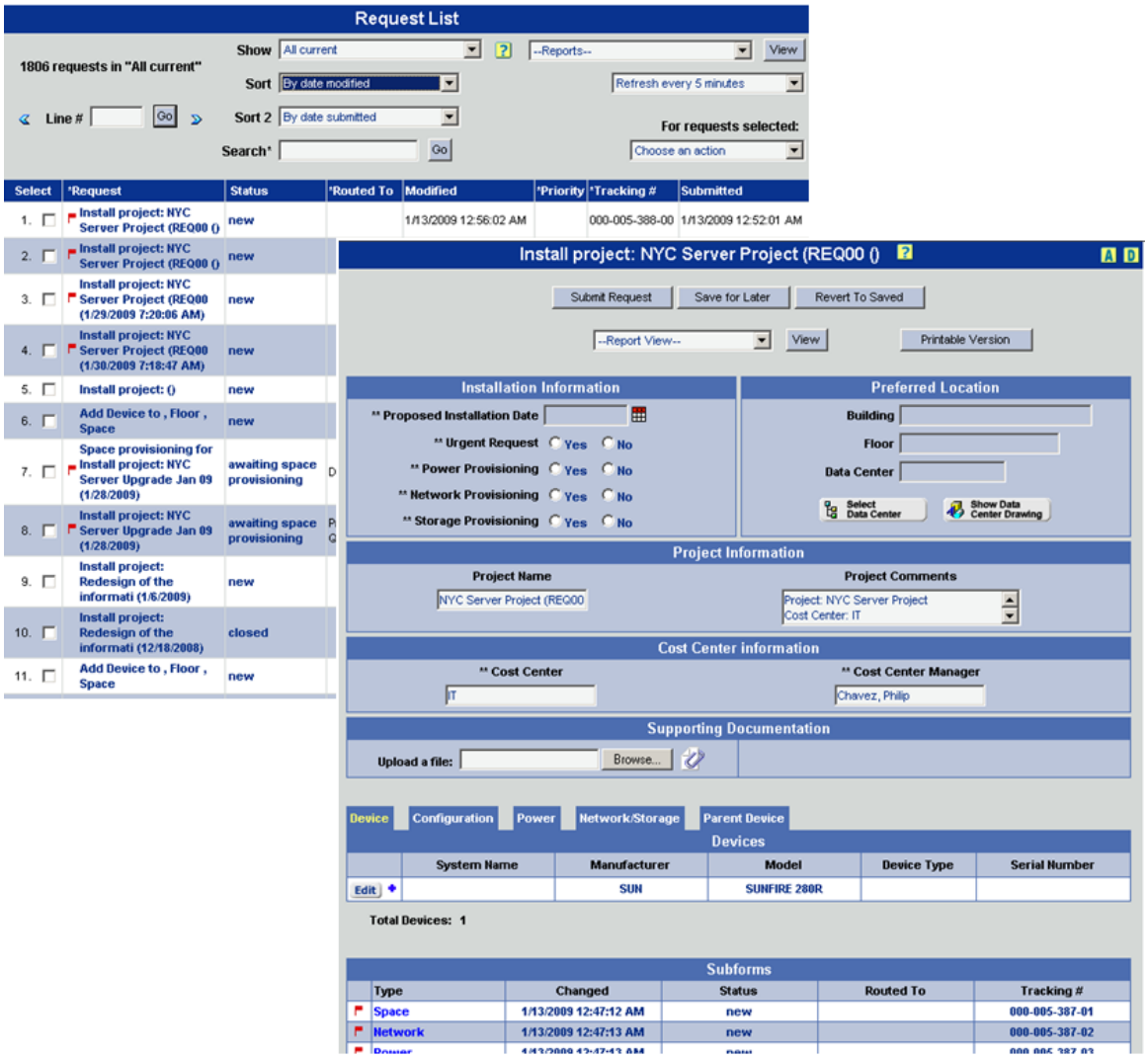
Without the system enhancements provided by the integration between Asset Manager and DCIM, clients wishing to create a request for installation in DCIM must do so manually, using DCIM's **Equipment Installation Request form** (see below) – whether or not the corresponding purchase request, request line(s) and purchase order have been created in Asset Manager.



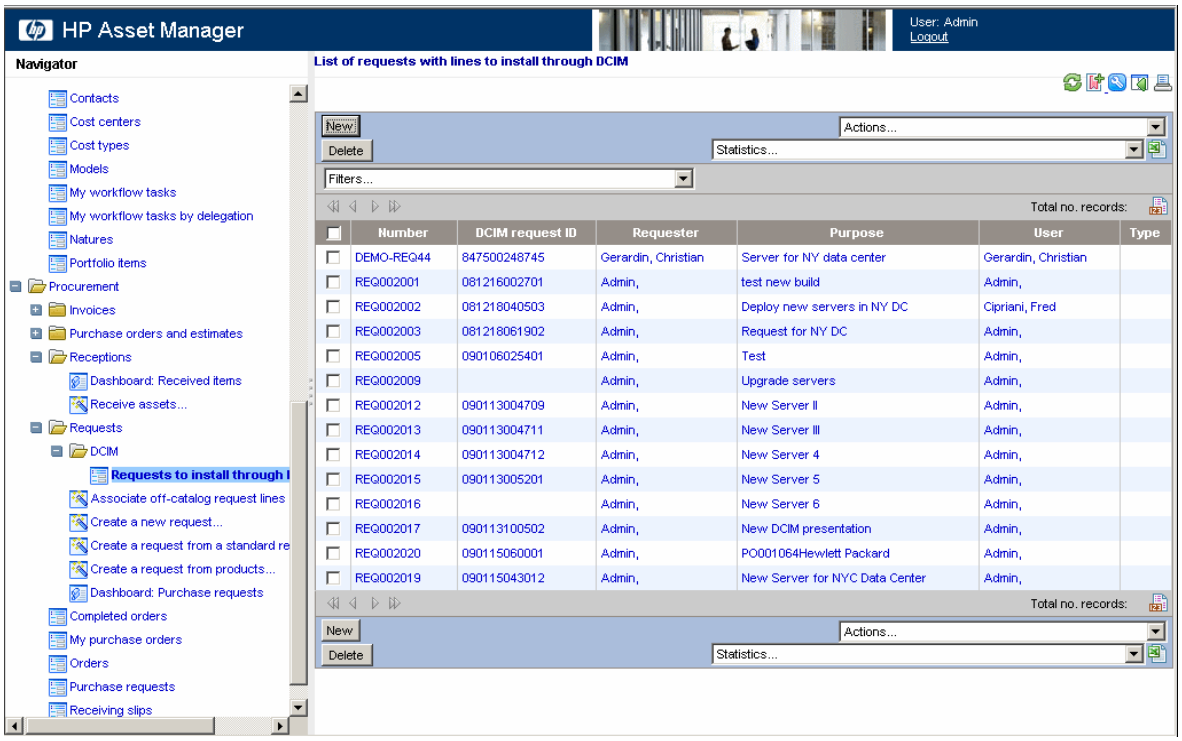
During Asset Manager's procurement cycle and DCIM's provisioning cycle, users of each system have no direct visibility of data from the other system. Any correspondences must be manually communicated and rekeyed.

Clients with the integration will benefit from the following key enhancements:

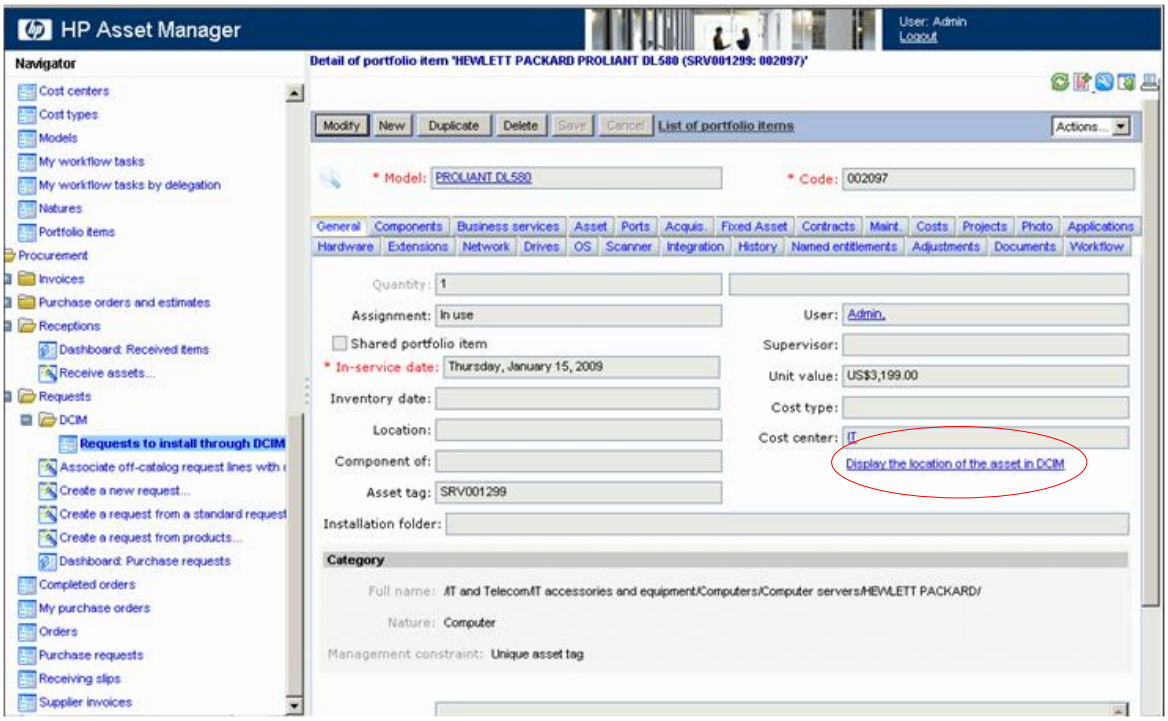
a) Requests to install through DCIM, created in Asset Manager, are listed on DCIM's **Request List** screen, from which they can be selected for editing on the **Install project** screen (which is based on the **Equipment Installation Request** screen). See the composite example below:



b) As requests progress through the Asset Manager procurement cycle, they can be monitored and edited from the new **Requests to install through DCIM** screen in Asset Manager:



c) From the Portfolio Item detail screen in Asset Manager, the location of the assets installed in DCIM can be directly retrieved using the link circled in red below:



d) DCIM users can identify and reconcile anomalies that may occur during data integration and synchronization, using the new **Asset Manager Reconciliation** report.

Terminology

DCIM object	**Corresponding Asset Manager object**
Symbol (2)	Product
Location	Location
Equipment (also called Device) (1)	Asset and Portfolio Item
Request	Request
Device	Request line

(1) In DCIM, before a device is installed, it is only present as a line in the request. The request is stored in the DCIM **Portal** database.
Once the device is installed in a data center, and only then, it is created in the DCIM **Repository** database.
(2) Symbols are stored in the DCIM **Symbols** database.

Implementing Required Components

Supported component versions

The integration is supported by the following product version combinations:

- Connect-It 3.9x
- Asset Manager 5.1x
- DCIM (Aperture VISTA 500)

Installing the integration package

Prerequisites

The following components must be installed before you deploy the Asset Manager–DCIM integration:

- Asset Manager
- DCIM (Aperture VISTA)
- Connect-It

For further details of installing each of these components, refer to the relevant documentation:

- Asset Manager **Installation and upgrade** guide
- Aperture VISTA **User's guide**
- Connect-It **User's guide**, chapter **Install**

Furthermore, as a prerequisite to the integration, the computer on which Connect-It is installed must have the following access configured, to permit the necessary data synchronization:

- To Asset Manager (via an ODBC connection)
- To the DCIM repository, portal and symbols database (via an ODBC connection)
- To the DCIM Web Services

For further details of how to do configure the relevant connectors, read the following guidance sections:

For the Asset Manager connector:

- The Connect-It **Connectors** guide, chapter **Hewlett-Packard connectors**, section, **HP Asset Manager connector/ About the HP Asset Manager connector/ Remarks concerning the configuration of the Asset Manager applications**

For the ODBC connector:

- The Connect-It **Connectors** guide, chapter **Configuring connectors**, section **Configuring the connection/ Select a connection - ODBC connection**

- The Connect-It **Connectors** guide, chapter **Protocol connectors**, section, **Database connector/ Additional information**

Installing the Connect-It scenarios and connectors

The **AM51-DCIM500.ZIP** package is supplied to clients with this White Paper, using the path information of the files. It contains the Connect-It connectors and scenarios required for the Asset Manager-DCIM integration, plus some other supporting files.

Extract the contents of this file to the root Connect-It installation folder. For instance
C:\Program Files\HP\Connect-It 3.90 en
Once you have unzipped the installation package, you will find the following scenario files under the Connect-It installation folder:

- **scenario\dcim\am51dcim500\dcimam_sync.scn**
  This scenario transfers data:
  - From Asset Manager to DCIM: Serial number and Bar code of the assets
  - From DCIM to Asset Manager: Location of the equipment
- **scenario\dcim\am51dcim500\amdcim_provisioning.scn**
  This scenario transfers data:
  - From Asset Manager to DCIM: Requests and request lines; request line status when their status shows that the assets have been received or reserved; Asset tag of the assets.
  - From DCIM to Asset Manager: Status of the request lines; request form ID.
    This scenario sets the value of the portfolio items' **Assignment** field (seAssignment) to **In use**; when appropriate.
- **scenario\dcim\am51dcim500\dcimam_refdata.scn**
  This scenario transfers data:
  - From DCIM to Asset Manager: symbols and locations

You will also find the following new connectors installed:
- DCIM Portal
- DCIM Repository
- DCIM Symbols

Customizing Connect-It

For Connect-It to support the integration, the following customizations are needed:

Note on the Web Services Connector

This version of the integration depends on the standard Web Services connector.
A dedicated DCIM connector, to replace the Web Services connector, should be available in a future release.

Configuring the Connectors in the Connect-It scenarios

From the Connector Configuration window of the Connect-It Service Console, you need to configure each of the connectors in turn.

Several types of connector are displayed, and not all connectors of the same type may appear contiguously in the list, so the following procedure should be treated as general guidance rather than strict step-by-step instructions.

The connectors include:

- The Asset Manager and ODBC connectors (configure as described in the Prerequisites)
- The three new data synchronization connectors supplied with the integration package
- The Web Services form connectors

For each of the three new Connect-It scenarios supplied as part of the integration package (**dcmiam_sync.scn, amdcim_provisioning.scn and dcimam_refdata.scn)**, you need to configure the connectors used by the scenario. To do this:

1. Launch the Connect-It Service Console (from the Windows **Programs/ HP/ Connect-It...** program group). (For more details, see the Connect-It **User's Guide**, chapter **Implementing an integration scenario**, section **Define a Connect-It service (Windows environment)/ The Service Console**)
2. Create a service (click **New** to start and **Create** to validate).
3. Display the **Connector configuration** window (click **Configure...**).
4. For each of the above scenarios you need to configure the appropriate connectors:
    a. Double-click on the connector name.
    b. Navigate with the **Configure the connector** wizard and populate the required information.

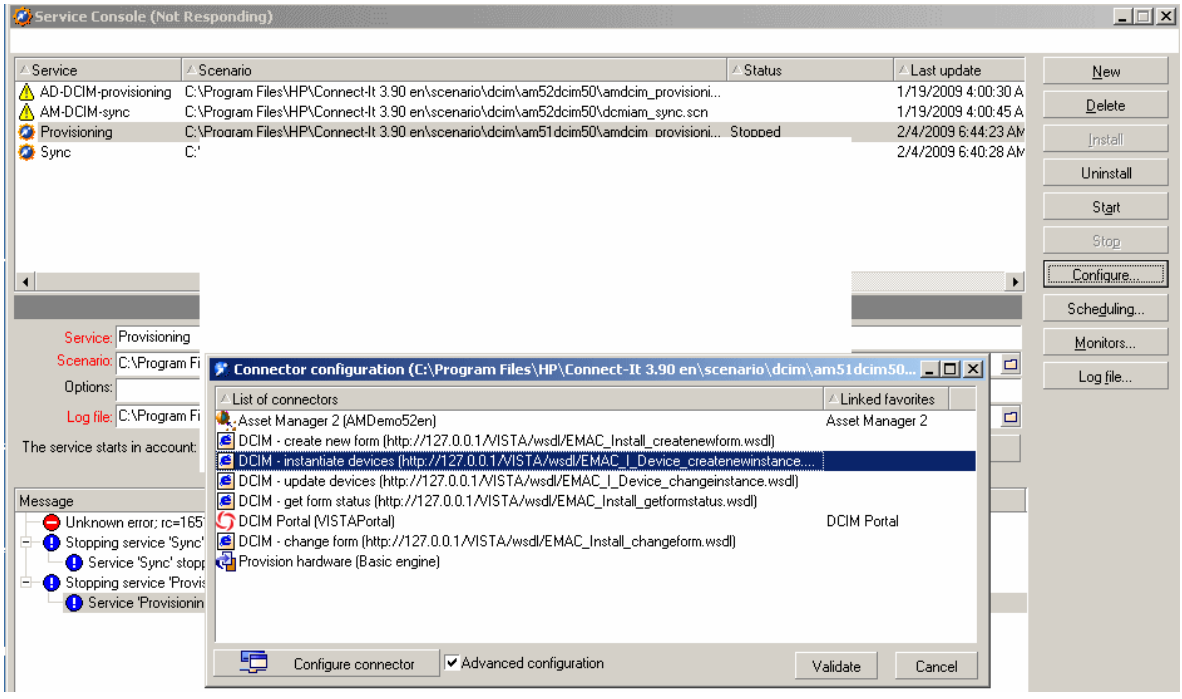
The following table provides additional guidance for information that may not seem obvious to populate (fifth column):

Corresponding Connect-IT Scenario	Connector	Wizard page name	Field name	Information to provide
amdcim_provisioning.scn	DCIM Portal	Configure the database server connection.	ODBC data source DSN	VISTAPortal
dcmiam_sync.scn	DCIM Symbols	Configure the database server connection.	ODBC data source DSN	VISTASymbols
dcimam_refdata.scn	DCIM Repository	Configure the database server connection.	ODBC data source DSN	VISTARep

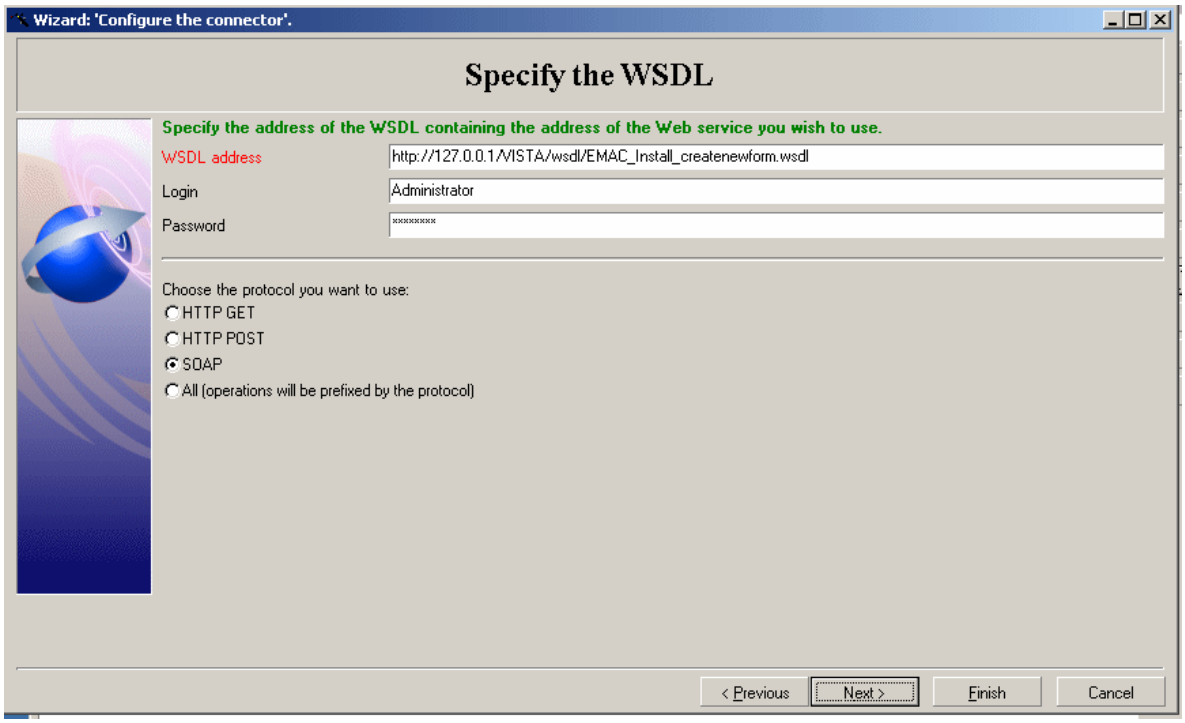
Tip:

To understand in greater detail how each connector performs mappings between Asset Manager and DCIM, open the connector in Scenario Builder and use the **File/ Create a scenario documentation...** feature.

From the Connector configuration list, you also need to configure the WSDL form connectors (those with WSDL file extensions in the following example):



For each of these connectors, open the configuration wizard, and display the Specify the WSDL page:



Configure the fields as follows:

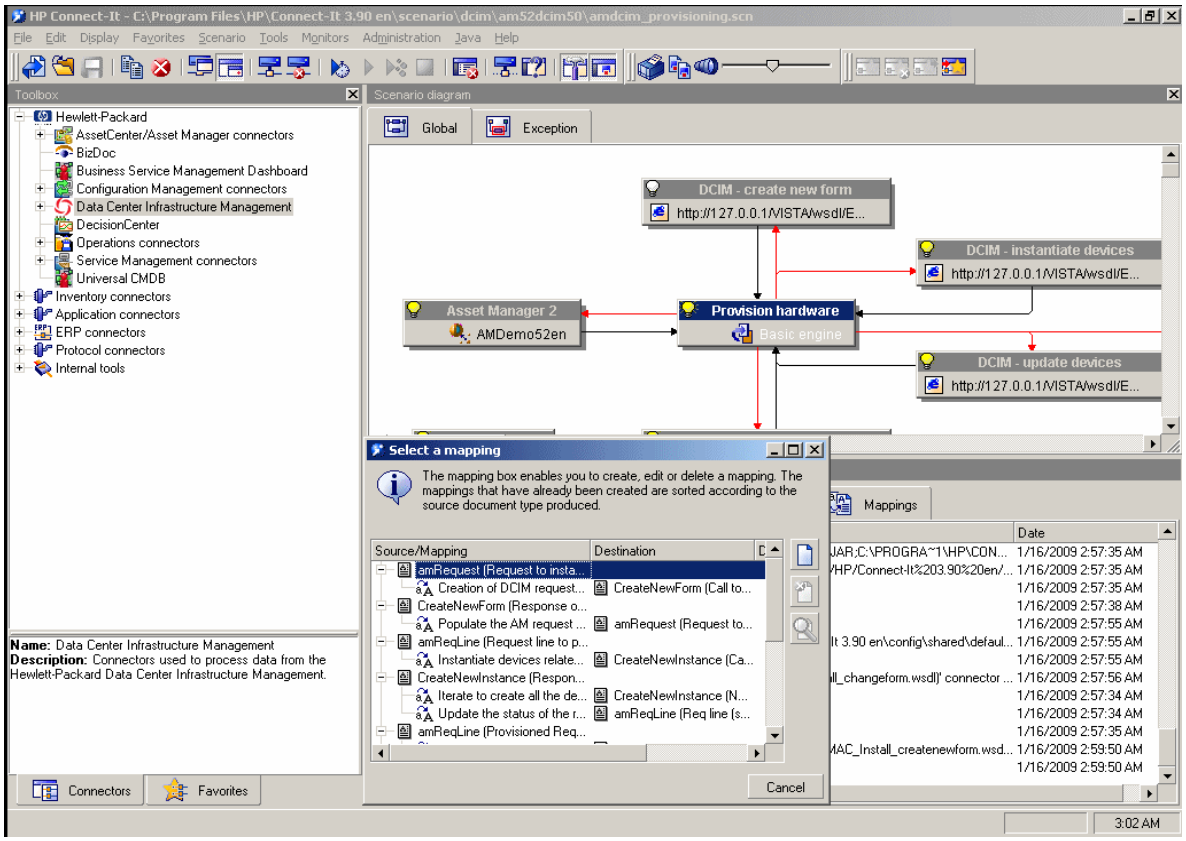
Connector	Wizard page name	Field name	Information to provide
All .wsdl connectors	Specify the WSDL	WSDL_address	Adapt this to the ip address of the web services server
All .wsdl connectors	Specify the WSDL	Login and Password	Enter the ID and password needed to access the web services
All .wsdl connectors	Specify the WSDL	Choose the protocol…	SOAP

Configuring the mapping in the **amdcim_provisioning.scn** Connect-It scenario

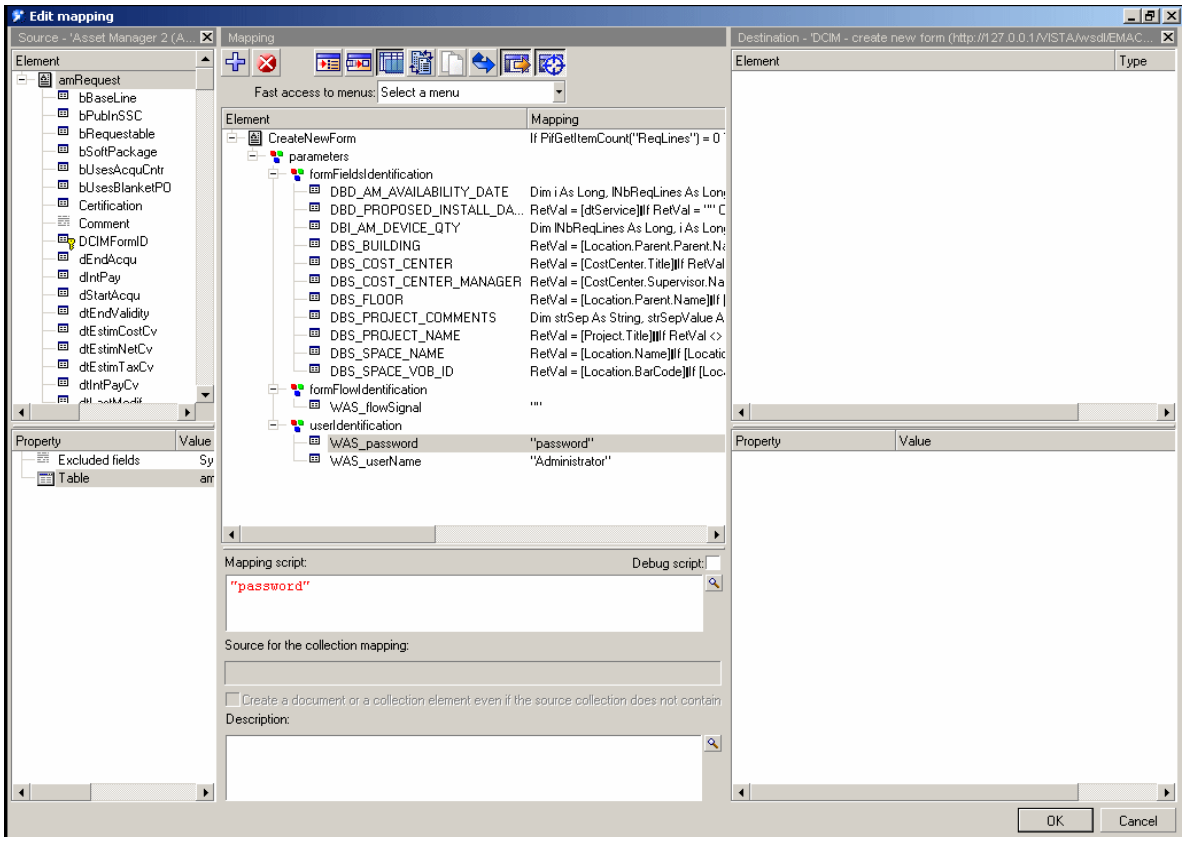
For the **Provisioning** connector of the **amdcim_provisioning.scn** scenario, you need to configure a username and password as explained in the following example.

1. Launch the Connect-It Scenario Builder (from the Windows **Programs/ HP/ Connect-It...** program group).
2. Open the **amdcim_provisioning.scn** scenario (**File/ Open** menu).
3. Select the **Provision hardware** connector:

Select the **Tools/ Edit a mapping...** menu:



1. Double-click the line below **amRequest (Request to instantiate in DCIM)**: This displays the mappings in a window, as in the following example:



2. To edit the password and username elements, select **Was_password** and **Was_username** in turn (under the **userIdentification** section, as in the above example) and as new mapping values, enter the password and username needed to access the DCIM Web Application Server.
3. Check each of the other Source/mappings listed in the **Select a mapping** window and, if present, edit the **Was_password** and **Was_username**.

For further details of how configure connectors, refer to the Connect-It **Connectors** Guide, chapter **Configuring connectors**.

Customizing Asset Manager to support the integration

For the integration to work, you first need to make some manual modifications to Asset Manager:

Database customization

You need to make changes to the Asset Manager Database in the following areas:

- Add new fields in existing tables
- Define Read only, Irrelevance and Default scripts for those new fields
- Define help text for those new fields
- Modify the Validity script of the **Requests** (amRequest) table
- Add an index in the **Requests** (amRequest) table
- Add a new calculated field
- Modify screens

These changes are detailed in turn below.

Add new fields in existing tables

1. Start Asset Manager Application Designer.
2. Connect to the Asset Manager database.
3. Add the following fields:

Table	Field SQL Name	Field Label	Field Type	Field Size
Products (amCatProduct)	bCanBeInstByDCIM	Can be installed through DCIM	Boolean (Yes/No)	
Requests (amRequest)	DCIMFormID	DCIM request ID	Text	18
Request lines (amReqLine)	bInstByDCIM	Install through DCIM	Boolean (Yes/No)	

Important: you must use the field SQL name and type strictly as indicated in the table.

Define Read only, Irrelevance, Mandatory and Default scripts for the new fields

1. Select the fields you just created and define the following scripts:

Table name	Field SQL Name	Script	Value
Products (amCatProduct)	bCanBeInstByDCIM	Read only	Yes
	lModelId	Mandatory	(Script): RetVal = [bCanBeInstByDCIM]
Requests (amRequest)	DCIMFormID	Read only	Yes
Request lines (amReqLine)	bInstByDCIM	Irrelevance	(Script): RetVal = ([CatProduct.bCanBeInstByDCIM] = 0)
		Default	(Script): RetVal = [CatProduct.bCanBeInstByDCIM]
	lCatProductId	Mandatory	(Script): RetVal = [CatalogRef.lCatProdId]

Define help text for the new fields

Table name	Field SQLName	Section	Value
Products (amCatProduct)	bCanBeInstByDCIM	Precautions	<LI>If you check the $$(amCatProduct:bCanBeInstByDCIM) option at the product level and associate the product to a request line, you will have the option to check the $$(amReqLine:bInstByDCIM) option at the request line level.<LI>If you check the $$(amReqLine:bInstByDCIM) option at the request line level, the request line will be transferred to HP DCIM.<LI>This field is populated using a system itemized list (list of values that cannot be modified).
Request lines (amReqLine)	bInstByDCIM	Precautions	<LI>The $$(amReqLine:bInstByDCIM) option is displayed only if the request line is associated to a product for which the $$(amCatProduct:bCanBeInstByDCIM) option has been checked.<LI>If you check the $$(amReqLine:bInstByDCIM) option at the request line level, the request line can be transferred to HP DCIM by a Connect-It scenario. HPDCIM is an integrated solution to manage and automate ITIL processes related to data center (physical) infrastructure.<LI>This field is populated using a system itemized list (list of values that cannot be modified).

Modify the Validity script of the **Requests** (amRequest) table

The validity script must be modified to handle the bInstByDCIM field. Thus you must replace the existing script with the following script (or at least copy and insert the final section, highlighted in red):

```
Dim l as integer
RetVal = TRUE
If [CatProduct]<>0 Then
  l = len([Model.FullName])
  If left([CatProduct.Model.FullName],l) <> [Model.FullName] Then
    Err.Raise(-2009, "The product model (CatProduct.Model) and the
request line model (Model) must be identical.")
    RetVal = FALSE
  End If
End If
If [CatalogRef]<>0 Then
  If [lModelId]<>0 Then
    l = len([Model.FullName])
    If left([CatalogRef.CatProduct.Model.FullName],l) <> [Model.FullName]
Then
      Err.Raise(-2009, "The product's catalog reference model
(CatalogRef.CatProduct.Model) and the request line model (Model) must be
identical.")
      RetVal = FALSE
    End If
  End If
  If [lCatProductId]<>0 And [CatalogRef.CatProduct] <> [CatProduct] Then
    Err.Raise(-2009, "The product's catalog reference
(CatalogRef.CatProduct) and the product (CatProduct) must be identical.")
    RetVal = FALSE
  End If
End If
If [Model.Nature.seBasis]=3 And [Model.Nature.seWorkOrderType] = 1 And
[UsedMedia.SoftInstall.lCanInstallId] <> [lUsedCanInstallId] Then
  Err.Raise(-2009, "The software package (UsedCanInstall) and the
software package that the media can install
(UsedMedia.SoftInstall.CanInstall) must be identical.")
  RetVal = FALSE
End If
If [bInstByDCIM] = 1 Then
  If [CatProduct.bCanBeInstByDCIM] = 0 Then
    Err.Raise(-2009, "In order to install a device through DCIM
(bInstByDCIM = 1), a product (CatProduct) that can be installed through
DCIM (bCanBeInstByDCIM = 1) must be linked to the request line.")
    RetVal = FALSE
  End If
End If
```

Add an index in the **Requests** (amRequest) table

Table	Index SQL ame	Type	Fields
Requests (amRequest)	Req_DCIMFormID	Normal	DCIMFormID

Add a new calculated field

Add the following calculated field to the **Assets** (amAsset) table.

1. Start an Asset Manager client.
2. Connect to the Asset Manager database.
3. Display the calculated fields (**Administration/ System/ Calculated fields** link on the navigation bar).
4. Add a new calculated field with the following properties:

   Title: DCIM Location

   SQLName: sysCoreWebDCIMAssetLocation

   Description: Display the location of the asset in DCIM

   Table: Assets (amAsset)

   Field type: Basic script

   Result type: Text

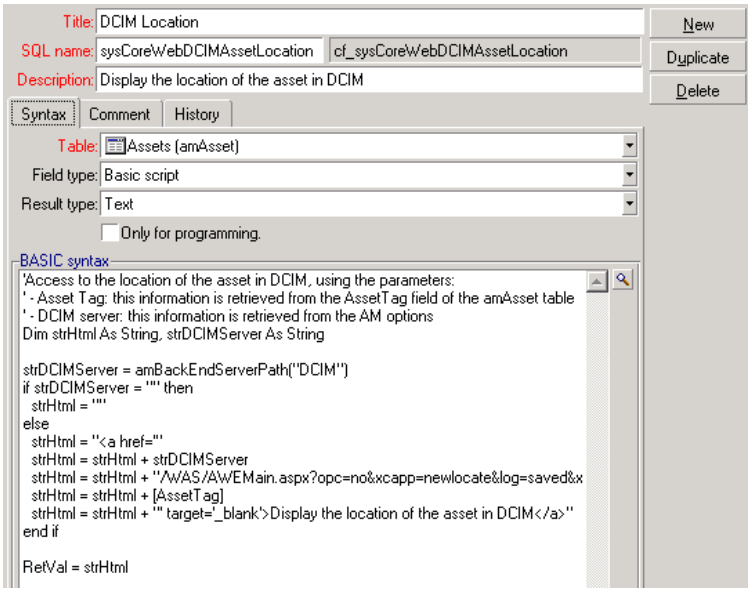
   BASIC syntax:

```
'Access to the location of the asset in DCIM, using the parameters:
' - Asset Tag: this information is retrieved from the AssetTag
field of the amAsset table
' - DCIM server: this information is retrieved from the AM options
Dim strHtml As String, strDCIMServer As String

strDCIMServer = amBackEndServerPath("DCIM")
if strDCIMServer = "" then
  strHtml = ""
else
  strHtml = "<a href='"
  strHtml = strHtml + strDCIMServer
  strHtml = strHtml +
"/WAS/AWEMain.aspx?opc=no&xcapp=newlocate&log=saved&xcsid=VISTA&xcl
type=AMAssetLocation&ASSET_TAG="
  strHtml = strHtml + [AssetTag]
  strHtml = strHtml + "' target='_blank'>Display the location of
the asset in DCIM</a>"
end if

RetVal = strHtml
```

You should get the following result:



The URL contained in this field now needs to be configured for your installation (see the section Modifying the URL for the *DCIM Location* (sysCoreWebDCIMAssetLocation) Calculated field, on page 29).

Modify screens

You need to make database customizations to several screens, and to multiple pages within those screens.

1. Start Asset Manager Application Designer.
2. Connect to the Asset Manager database.
3. Modify screens as indicated below:

Products (amCatProduct) table

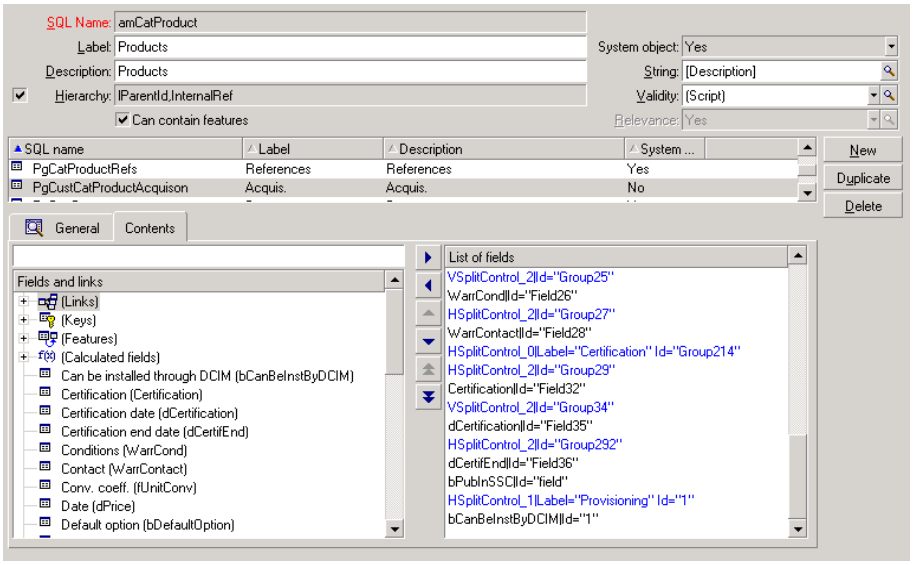
You need to make a copy of the **PgCatProductAcquison** page and call the copy **PgCustCatProductAcquison**.

In the **List of fields** on the **Contents** tab of the new page, the following lines must be added at the end of the list:

HSplitControl_1|Label="Provisioning"

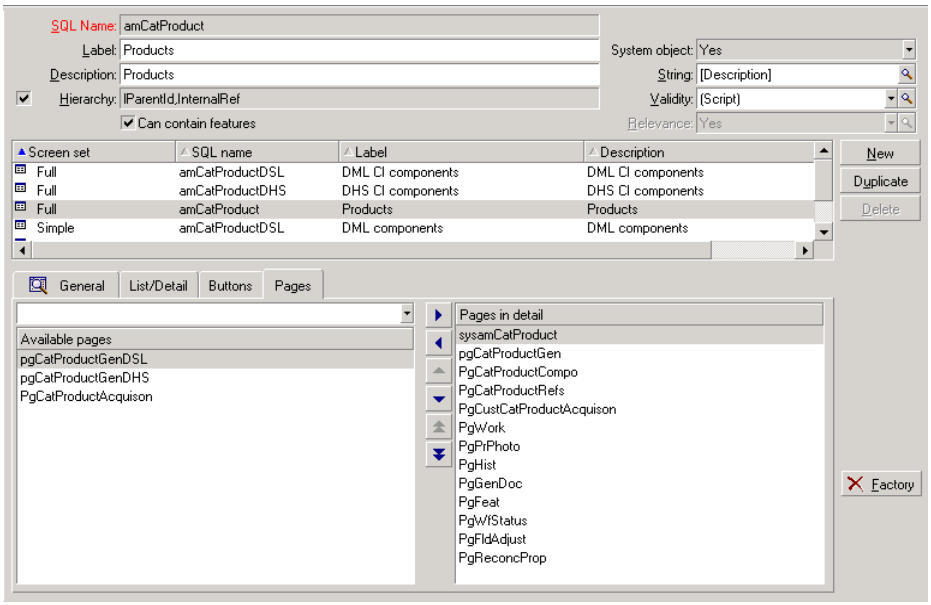
bCanBeInstByDCIM

You should get the following results (Ids are created by the system and can differ):



In all screens existing for the **Products** (amCatProduct) table, replace the PgCatProductAcquison page with PgCustCatProductAcquison

You should get the following results:



Requests (amRequest) table

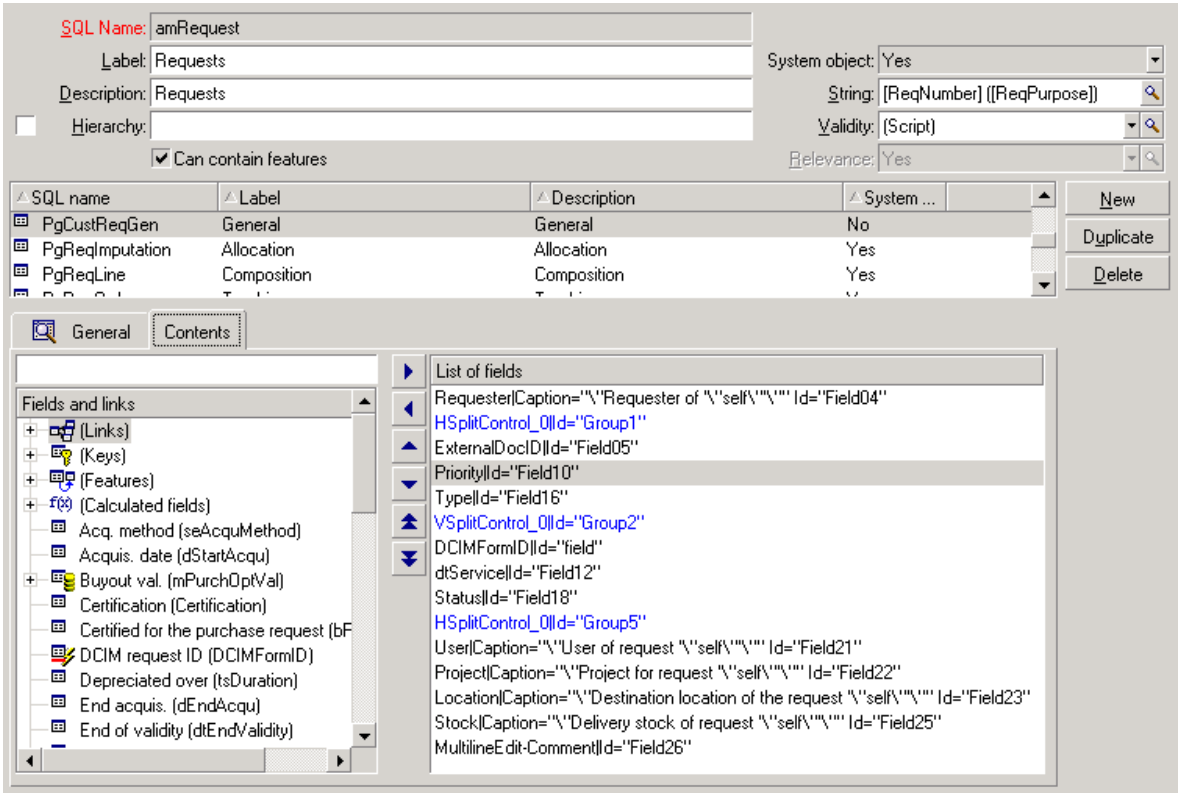
The **PgReqGen** page must be copied to **PgCustReqGen**.

The **PgAcwReqGen** page must be copied to **PgCustAcwReqGen**.

In the **List of fields** on the **Contents** tab on each of these new pages, the following line must be added (above the line with **dtService**):

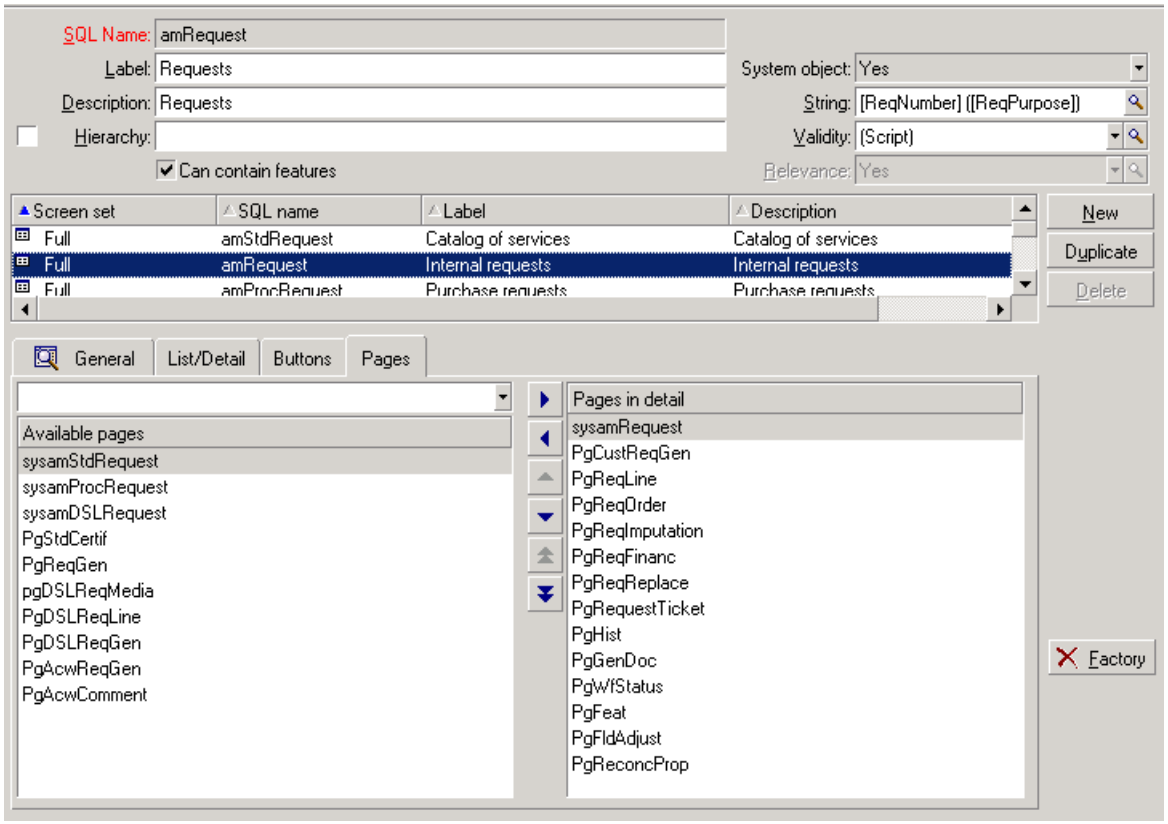
DCIMFormID

You can also reorganize the list of fields to get the following results, which will be reflected in the Web client (Ids are created by the system and can differ):



In all screens existing for the **Requests** (amRequest) table replace occurrences of the **PgReqGen** page with **PgCustReqGen**, and occurrences of the **PgAcwReqGen** page with **PgCustAcwReqGen**.

You should get the following results:



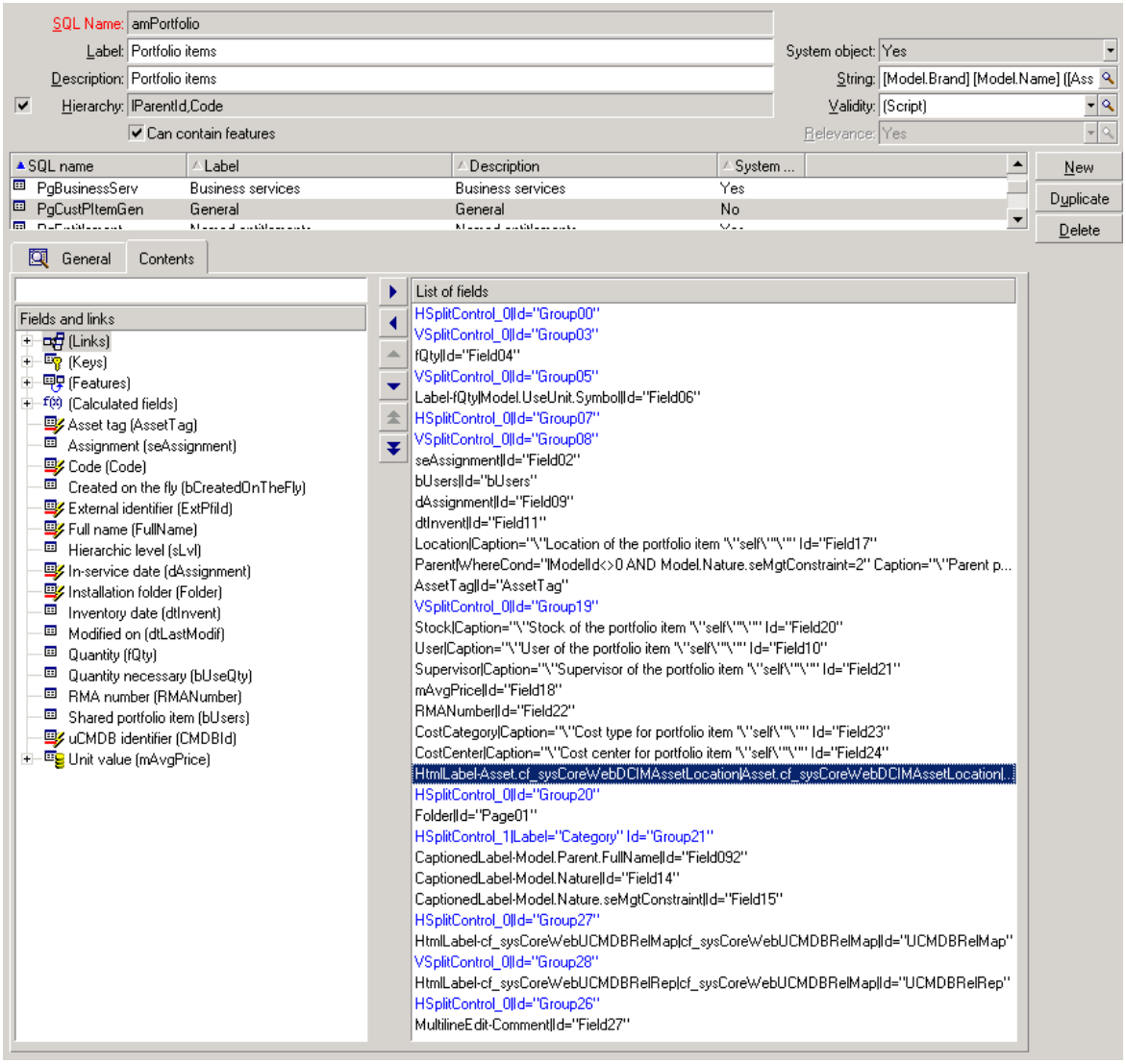
Portfolio items (amPortfolio) table

The **PgPItemGen** page must be copied to **PgCustPItemGen**

In the **List of fields** on the **Contents** tab of the new page, the following line must be added:

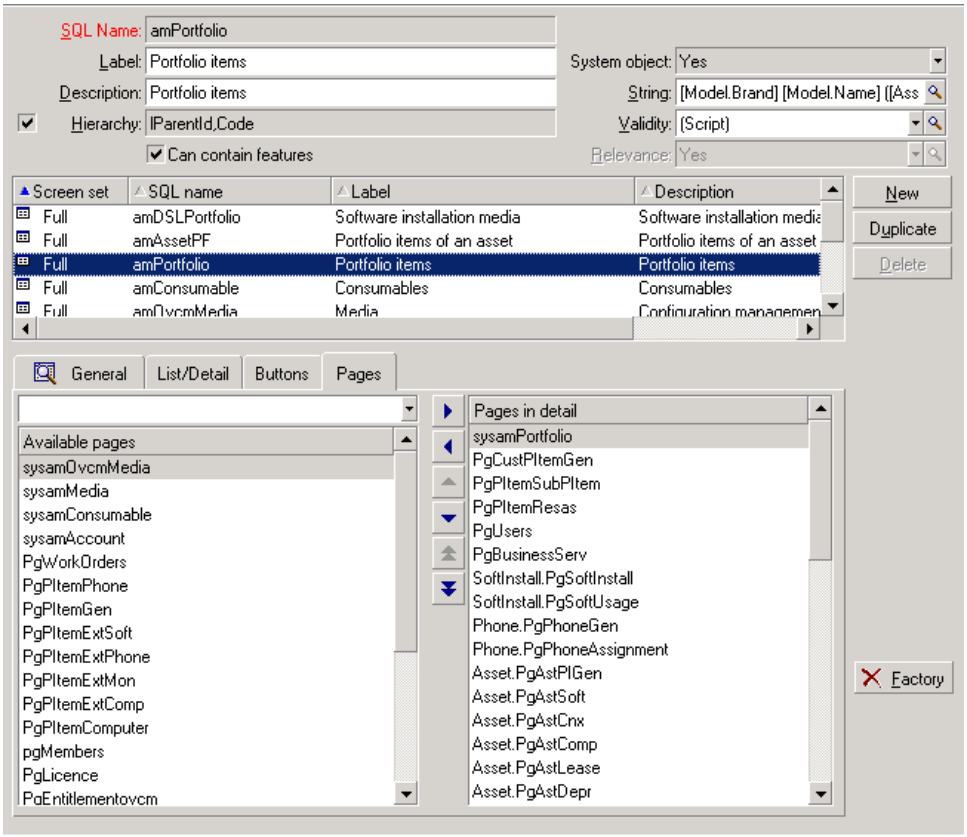
HtmlLabel-Asset.cf_sysCoreWebDCIMAssetLocation|Asset.cf_sysCoreWebDCIMAssetLocation|Id="DCIMAssetLocation"

You can also reorganize the list of fields to get the following results, which will be reflected in the Web client (Ids are created by the system and can differ):



In all screens existing for the **Portfolio items** (amPortfolio) table replace the **PgPItemGen** page with **PgCustPItemGen**.

You should get the following results:



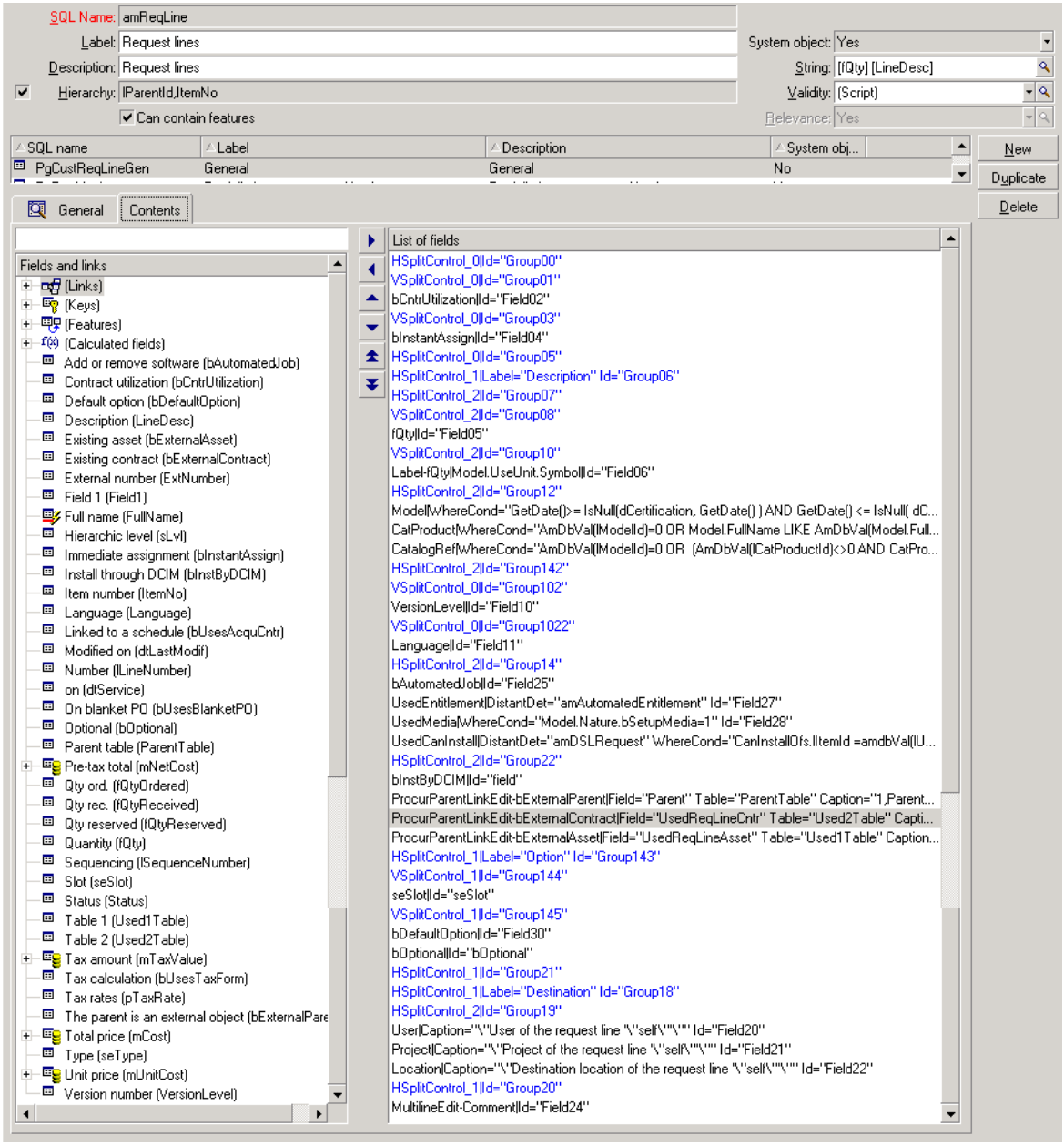
Request lines (amReqline) table

The **PgReqLineGen** page must be copied to **PgCustReqLineGen**

In the **List of fields** on the **Contents** tab of the new page, the following line must be added:

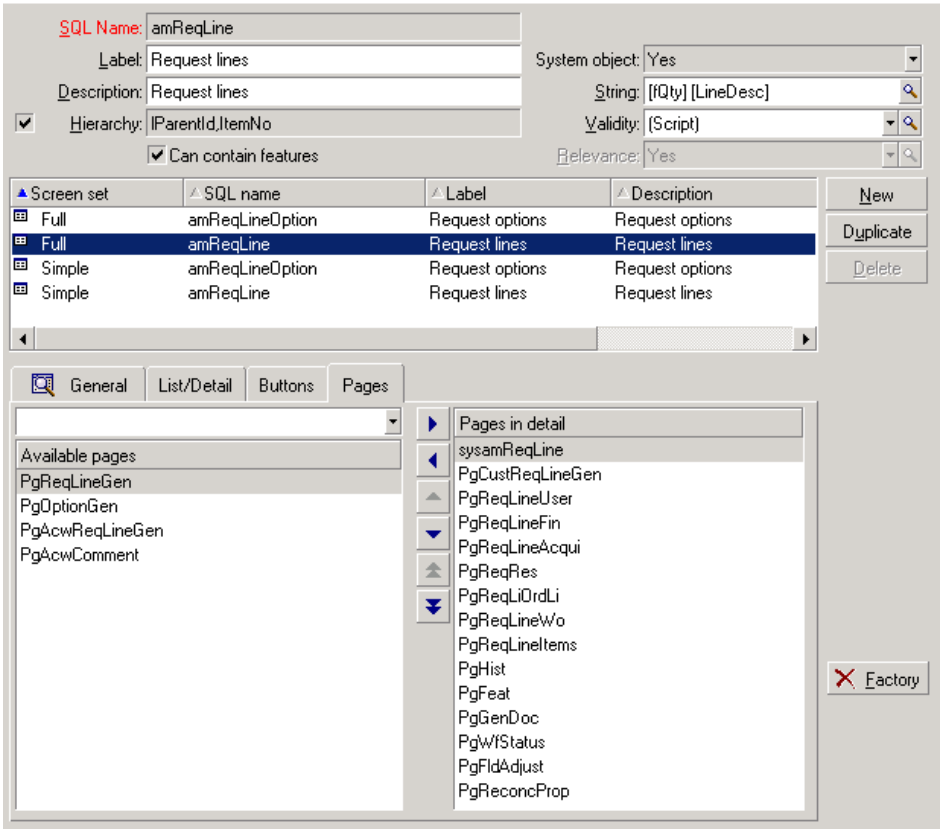
bInstByDCIM

You can also reorganize the list of fields to get the following results, which will be reflected in the Web client (Ids are created by the system and can differ):



In all screens existing for the **Request lines** (amReqline) table replace the PgReqLineGen page with PgCustReqLineGen.

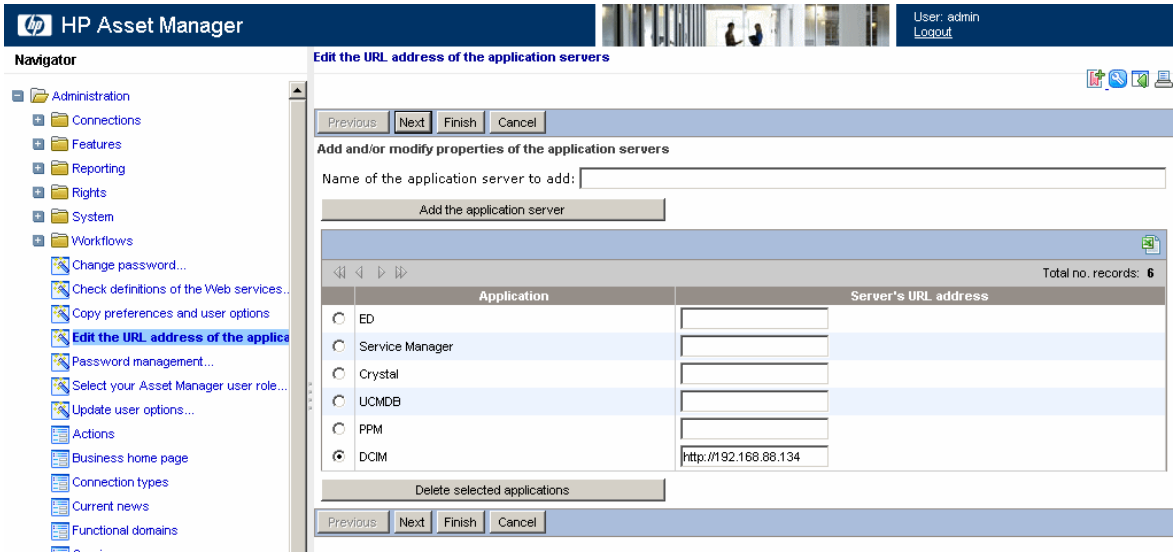
You should get the following results:



Modifying the URL for the *DCIM Location* (sysCoreWebDCIMAssetLocation) Calculated field

The target URL for the **Display the location of the asset in DCIM...** link on the Portfolio Item detail screen needs to be configured with the right address. To do this:

1. Start an Asset Manager client and connect to the Asset Manager database.
2. Unfold the **Administration** branch from the navigation bar.
3. Select the link to the **Edit the URL address of the application servers...** (BstBackEndOpt) wizard.
4. Check that the URL of the DCIM Web Services server is correct (see example below) and then click **Finish**.



Optional:

If you want, you can configure a "Guest" user in DCIM that will be used to automatically logon to the DCIM software.

1. Use the **Admin** screen in DCIM, select **Users/ Add user...**, specify at least name and password)
2. Use the **Administration/ System/ Calculated fields** link from the Asset Manager navigation bar.
3. Select the **DCIM Location** (sysCoreWebDCIMAssetLocation) Calculated field.
4. Make the following edits in order to specify the user information:

In the script of the calculated field, comment the line:

```
  strHtml = strHtml +
"/WAS/AWEMain.aspx?opc=no&xcapp=newlocate&log=saved&xcsid=VISTA&xcltype=A
MAssetLocation&ASSET_TAG="
```

And uncomment or add the line

```
  strHtml = strHtml +
"/WAS/URLService/AWEURL.aspx?opc=no&xcapp=newlocate&u=<your_guestuserid>&
ps=<your_guest_password>&xcsid=VISTA&xcltype=AMAssetLocation&ASSET_TAG="
```

In the uncommented line, replace:

<your_guestuserid> with the Guest user login

<your_guest_password> with the Guest user password

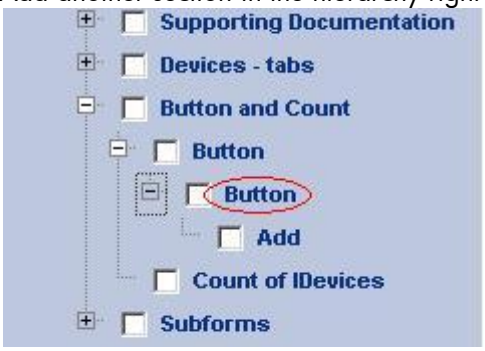
For further details of customizing Asset Manager, refer to the **Installation and upgrade**, **Advanced use** and **Administration** guides.

Customizing DCIM to support the integration

For DCIM to support the integration, the following customizations are needed:

1. Add fields to the **EMAC_Install** form
    a. AM_DEVICE_QTY
        i. Type: Integer
        ii. Placement: **Hidden Data** section
        (Click on the layout form to get the **Hidden Data** section)
        Select **Hidden Data** from the tree view and click Insert before or after, once required fields are set
    b. AM_REQUEST_STATUS
        i. Type: Short Text(50)
        ii. Default Placement: "Hidden Data" section. You may wish to display this field so that users can confirm that an install is ready to proceed.
    c. AM_AVAILABILITY_DATE
        i. Type: Date & Time field
        ii. Placement: In a new section, below **Preferred Location**, under **Location and Scheduling** in the Top Section of the form.

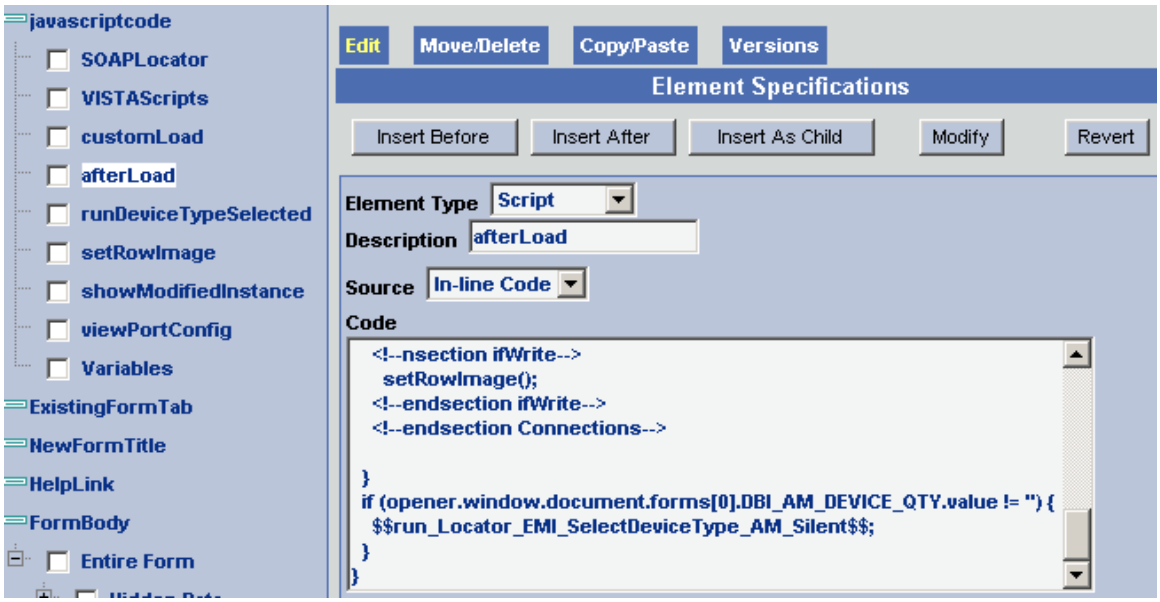
2. Hide add button for device multi-instance section if devices coming from Asset Manager. If devices are supposed to be filled in by Asset Manager, the **DBI_AM_DEVICE_QTY** field will have some value in it.
    a. Add another section in the hierarchy right above the **Add** button.



    b. Add a visibility rule to the new section:
        i. About: Visibility
        ii. Step: All steps
        iii. Conditioned On: DBI_AM_DEVICE_QTY
        iv. =
        v. Leave the value blank, as shown below:

3. Create a new silent locator, **EMI_SelectDeviceType_AM_Silent**
    a. Open the **EMAC_I_Device** form in **Form Configuration**. Click on **Content**. Select **EMI_SelectDeviceType** locator from the **Locate Buttons** list. Click **Edit**.
    b. Save the locator as **EMI_SelectDeviceType_AM_Silent**
    c. Check the **Silent** checkbox to make this a silent locator
    d. Keep the same search table, **vw_Device_Symbol_Data**, but change the search fields to include only the following:
        i. MANUFACTURER
            1. Hide this criteria
            2. Init: DBS_MANUFACTURER
        ii. MODEL
            1. Hide this criteria
            2. Init: DBS_MODEL
        iii. MODEL_INFO
            1. Hide this criteria
            2. Init: DBS_MODEL_INFO
    e. Save the changes
4. Add the following lines of JavaScript to the bottom of the **afterLoad()** function of the **EMAC_I_Device** form (see screenshot below:

```
if (opener.window.document.forms[0].DBI_AM_DEVICE_QTY.value != '')
{$$run_Locator_EMI_SelectDeviceType_AM_Silent$$;
  }
```



5. Add autoscript to the **Create** step of **EMAC_Install** to make sure all expected devices are added from Asset Manager
    a. Location: Directly inside the second **<DataDestination>** tag.

```
  <Source type="field">
         <Name>DBI_IDEVICES_QTY</Name>
         <Validation>
             <Requirements>
                 <Requirement>
 <Source type="field">DBI_AM_DEVICE_QTY</Source>
 <Operation>NOT_EQUAL</Operation>
 <CompareTo type="value">
 <Value></Value>
 </CompareTo>
 </Requirement>
 </Requirements>
             <Operation>EQUAL</Operation>
             <CompareTo type="dbSelect">
                 <DBSelect field="AM_DEVICE_QTY" table="EMAC_Install"
target="FORMS">
                     <MatchFields>
                         <MatchField>
                             <Source
type="Special">%%FLOWING_CONTAINER_ID%%</Source>
                             <Target>FormID</Target>
                         </MatchField>
                     </MatchFields>
                 </DBSelect>
             </CompareTo>
             <ValidationErrorText>
                 <ReplacementTags>
                     <ReplacementTag>
                         <Tag>%%NUM_EXPECTED_DEVICES%%</Tag>
                         <Source type="dbSelect">
                             <DBSelect field="AM_DEVICE_QTY"
table="EMAC_Install" target="FORMS">
                                 <MatchFields>
                                     <MatchField>
                                         <Source
type="Special">%%FLOWING_CONTAINER_ID%%</Source>
                                         <Target>FormID</Target>
                                     </MatchField>
                                 </MatchFields>
                             </DBSelect>
                         </Source>
                     </ReplacementTag>
                 </ReplacementTags>
                 <Text>The number of device records in the request
does not match the number expected to be sent from the system that
originated the request.  Devices expected:
%%NUM_EXPECTED_DEVICES%%</Text>
             </ValidationErrorText>
         </Validation>
     </Source>
```

b. Display Full steps: select the **Step Email and Rules** form. Choose step **Create** and click on the button "Specify "Create" Exit Script"
c. Add the following script code directly inside the second <DataDestination> tag.

6. Add **autoscript** to the **Scheduling** step of the **EMAC_Install** form to check the Asset Manager request status before flowing.
    a. Location: Add at the beginning of existing **<DataDestinations>** section on scheduling step:

```
<DataDestination type="NOACTION">
    <Source type="field">
        <Name>DBS_AM_REQUEST_STATUS</Name>
        <Validation>
<Requirements>
<Requirement>
<Source type="field">DBI_AM_DEVICE_QTY</Source>
<Operation>NOT_EQUAL</Operation>
<CompareTo type="value">
<Value></Value>
</CompareTo>
</Requirement>
</Requirements>
            <Operation>EQUAL</Operation>
            <CompareTo type="value">
                <Value>Received</Value>
            </CompareTo>
            <ValidationErrorText>
                <ReplacementTags>
                    <ReplacementTag>
                        <Tag>%%AM_REQUEST_STATUS%%</Tag>
                        <Source
type="field">DBS_AM_REQUEST_STATUS</Source>
                    </ReplacementTag>
                </ReplacementTags>
                <Text>All devices must be received by the asset system
prior to scheduling the install.  The current asset request status is:
%%AM_REQUEST_STATUS%%</Text>
            </ValidationErrorText>
        </Validation>
    </Source>
</DataDestination>
```

7. Have the DBA run **AMVisualLinkView.sql** to create view for visual link
8. Create a new visual link from the **Admin->External Interfaces** page
    a. Name: AMAssetLocation
    b. For the Visualize step, make the following changes:
        i. Message to show when loading drawing: "Loading VISTA drawing…"
        ii. Error message if drawing cannot be loaded: "Could not load VISTA drawing…"
        iii. ODBC Data Source: "VISTARep"
        iv. Source Table: "vw_DV_TD_DEVICE_RACK"
        v. ObjectID Column: "OBJECTID"
        vi. Use **AssetTag** from the form to match **asset_number** in **vw_DV_TD_DEVICE_RACK**

9. Create an ODBC connection named **HP Asset Manager** to the Asset Manager database using the user that owns the Asset Manager tables.
10. Place the report layout file **VISTA – Asset Manager Reconciliation.rpt** on the WAS (Vista web server) machine so that it can be accessed when needed.

For further details of customizing DCIM, refer to the Aperture VISTA documentation.

Creating and Updating Reference Information

Overview - Logical architecture

In order to create a request in DCIM based on one originating from Asset Manager, Locations and Symbols data must first be created in DCIM and then transferred to Asset Manager.

When you create a requests to install through DCIM in Asset Manager you can select Locations whose **Location type** (LocationType) = **Data Center**.

DCIM Symbols are transferred to Asset Manager as Products. Products destined for the Data Center are flagged as **Can be installed through DCIM** (bCanBeInstByDCIM).

Note: a symbol in DCIM contains details of Manufacturer, Model and Model Information (technical information that affects installation, such as size, energy consumption…).

Running the Connect-It Scenarios

Several Connect-It scenarios are provided for data transfer between Asset Manager and DCIM. You will run them for:

- Creating and Updating Reference Information
- Procurement and Provisioning Workflows

For further details of how to Start or Stop the scenarios, or to change their default configuration or scheduling parameters, refer to the Connect-It **User Guide**, in particular chapter **Managing an integration scenario**.

Note: The scenarios check for and synchronize new or modified data only when they are Started.

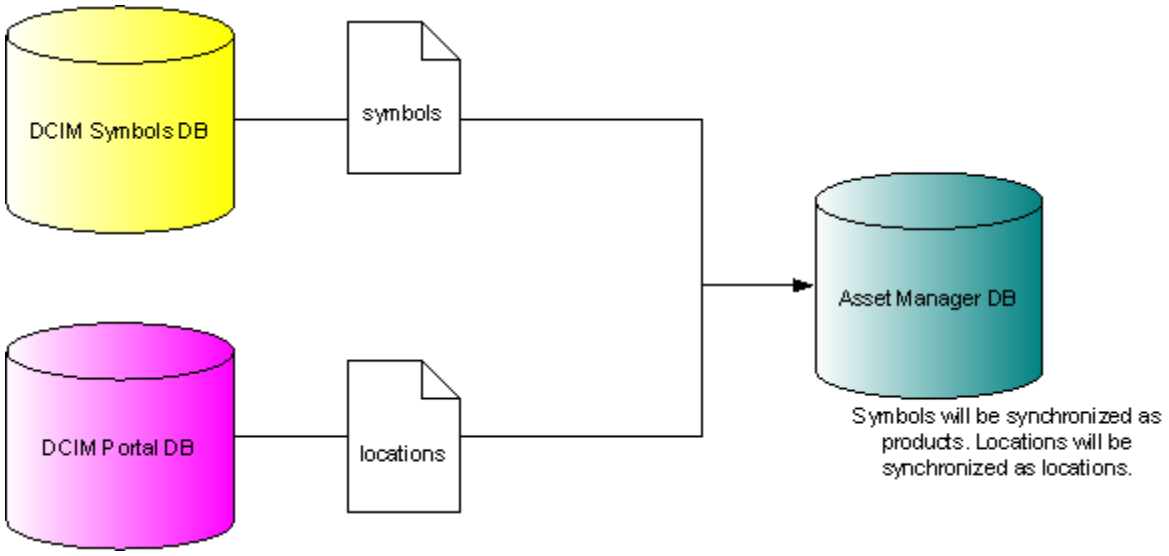
Best Practices:

- Set the **dcimam_refdata.scn** scenario to run regularly, for instance daily, to keep the databases synchronized.
- Set the **dcmiam_sync.scn** and **amdcim_provisioning.scn** scenarios to run more frequently, for instance every few minutes (according to your business volumes and processes), to keep live data adequately synchronized.

To make the initial transfer of reference data, you should use the **scenario\dcim\am51dcim500\dcimam_refdata.scn** Connect-It scenario.

The scenario should subsequently be scheduled to run regularly to add or update locations and symbols in Asset Manager. (However, the scenario does not delete obsolete data. To remove obsolete locations from those available in Asset Manager, change their **Location type** (LocationType) from **Data Center** to another value of your choice.)

Reference data synchronization



Post synchronization tasks

After DCIM Locations are transferred to Asset Manager as Locations, and DCIM Symbols are transferred to Asset Manager as Products, you may end-up with duplicate locations and products in the Asset Manager database. You need to remove duplicate records, and make sure you do not lose the flag **Location type** (LocationType) = **Data Center** for locations and **Can be installed through DCIM** (bCanBeInstByDCIM) for products while doing this.

Procurement and Provisioning Workflows

Summary Workflow

The following simplified workflow summarizes the integration between the Procurement and Provisioning processes that the integration between Asset Manager (AM) and DCIM provides. The detailed procedures for using Asset Manager and DCIM, in relation to the integration, are presented after the table.

Step	System	Triggering event to move from previous step to current step	Activity	Initiation	Asset Manager Request Line Status updated (1)
1.	AM		Request new device(s) to install in a data center	Manual	
2.	AM	**Req. status** (seStatus) = **Awaiting approval** in Asset Manager request detail	Validate the Asset Manager Request	Manual or Workflow, according to your validation processes	
3a.	*Connect-It*	**Req. status** (seStatus) = **Validated** in Asset Manager request detail	*Transmits the Asset Manager Request to DCIM (Web Service call)*	Connect-It **amdcim_provisioning .scn** scenario	1. Pending transfer to DCIM
3b.	*Connect-It*	DCIM Install request created	*Adds device records to newly created install request (series of Web Service calls)*	Connect-It **amdcim_provisioning .scn** scenario	2. DCIM provisioning - waiting for devices
4a.	AM	If asset cannot be reserved from stock, click **Quote/PO** in Asset Manager request detail	Raise Asset Manager Purchase Orders for new devices	Manual	
4b.	AM	When asset is delivered, click **Receive** in Asset Manager purchase order detail	Receive devices	Manual	3. DCIM provisioning - devices available
4c.	AM	If asset exists in stock, click **Reserve** in Asset Manager request detail	Reserve devices	Manual	3. DCIM provisioning - devices available
4d.	DCIM	**Req. status** (seStatus) = **Validated** in Asset Manager request detail	Provision DCIM Request. (Provisioning process advances *in parallel based on the workflow definition*: space, storage, power, location assigned…)	Manual	
5..	*Connect-It*	All assets installable through DCIM are received or reserved (Connect-It checks a few Asset Manager fields to deduce this)	*Notifies DCIM that the install can start* *Transfer **Asset tag** (AssetTag) from Asset Manager asset to DCIM*	Connect-It **amdcim_provisioning .scn** scenario	4. DCIM waiting for scheduling
6.	DCIM	The DCIM **AM_REQUEST_STATUS** hidden field is populated (**EMAC_Install** form)	Schedule installation	Manual	5. Installation scheduled in DCIM
7.	DCIM	The DCIM **DBHS_Status** field is set to **awaiting equipment installation** (**EMAC_Install** form)	Execute DCIM Request. (Engineers can display / print information needed to install devices.)	Manual	
8.	DCIM	Engineer has completed the DCIM Request.	Close DCIM Request	Manual	
9.	*Connect-It*	The DCIM **DBHS_Status** field is set to **closed** (**EMAC_Install** form)	*Sets the Asset Manager Portfolio item **Assignment** field (seAssignment) to **In use***	Connect-It **amdcim_provisioning .scn** scenario	6. Installation complete in DCIM 7. Installation failure in DCIM
10.	*DCIM*	The DCIM **DBHS_Status** field is set to **closed** (**EMAC_Install** form)	*Creates devices in the DCIM Repository database*	DCIM automated process	
11.	*Connect-It*	When the **dcmiam_sync.scn** Connect-It scenario is executed and finds a new device in the DCIM Repository database	*Transmits location of DCIM devices to Asset Manager database*	Connect-It **dcmiam_sync.scn** scenario	
12.	*Connect-It*	When the **dcmiam_sync.scn** Connect-It scenario is executed and finds new values in the **Bar code/RFID** (BarCode) and/or **Serial #** (SerialNo) fields of the Asset Manager asset detail	*Transmits **Bar code/RFID** and/or **Serial #** from Asset Manager assets to DCIM database*	Connect-It **dcmiam_sync.scn** scenario	
13.	*AM*	Manual	Close Asset Manager Request. (Once all Request Lines are dealt with, set the Asset Manager **Req. status** (seStatus) (seStatus) to **Closed**)	Manual	

(1) by the amdcim_provisioning.scn Connect-It scenario based on the DCIM Request Status

Hint: To view the workflow in close-up, Zoom the document view. (Alternatively, see the landscape version of this table supplied in the document **AM-DCIM_Workflow.pdf** included in the integration package.)

The principal manual activities from this workflow are detailed below.

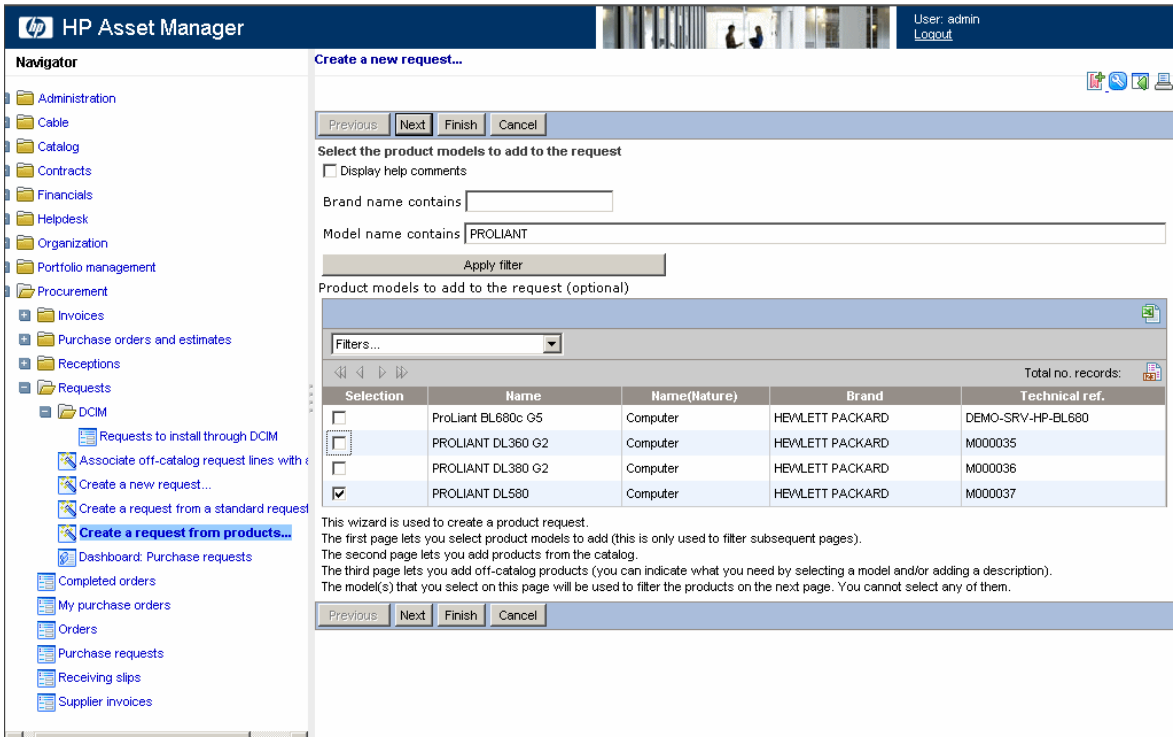
Note: the examples below use the Asset Manager Web client. The Windows client version of Asset Manager has a slightly different look-and-feel.

1. Request new device(s) to install in a data center

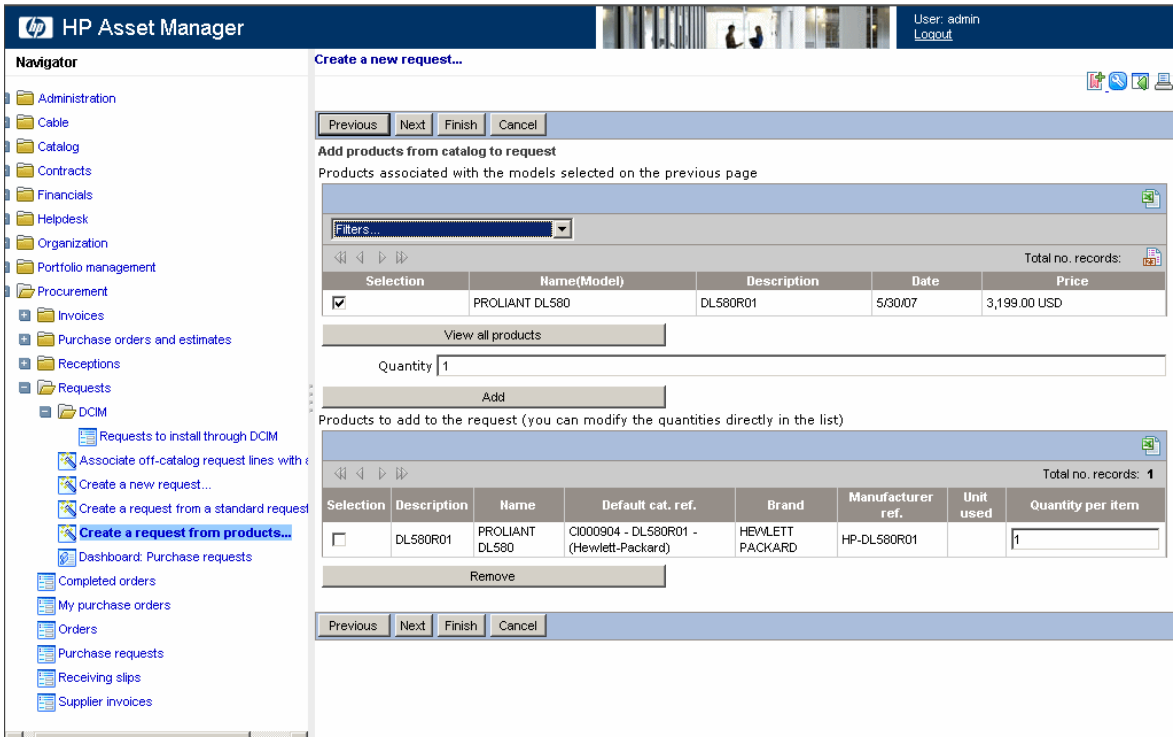
Asset Manager offers several ways to create a Request and its Request Line(s). For instance, you can use the **Create a request from products...** (sysProcRequestFromProduct) wizard:

Create Asset Manager Request

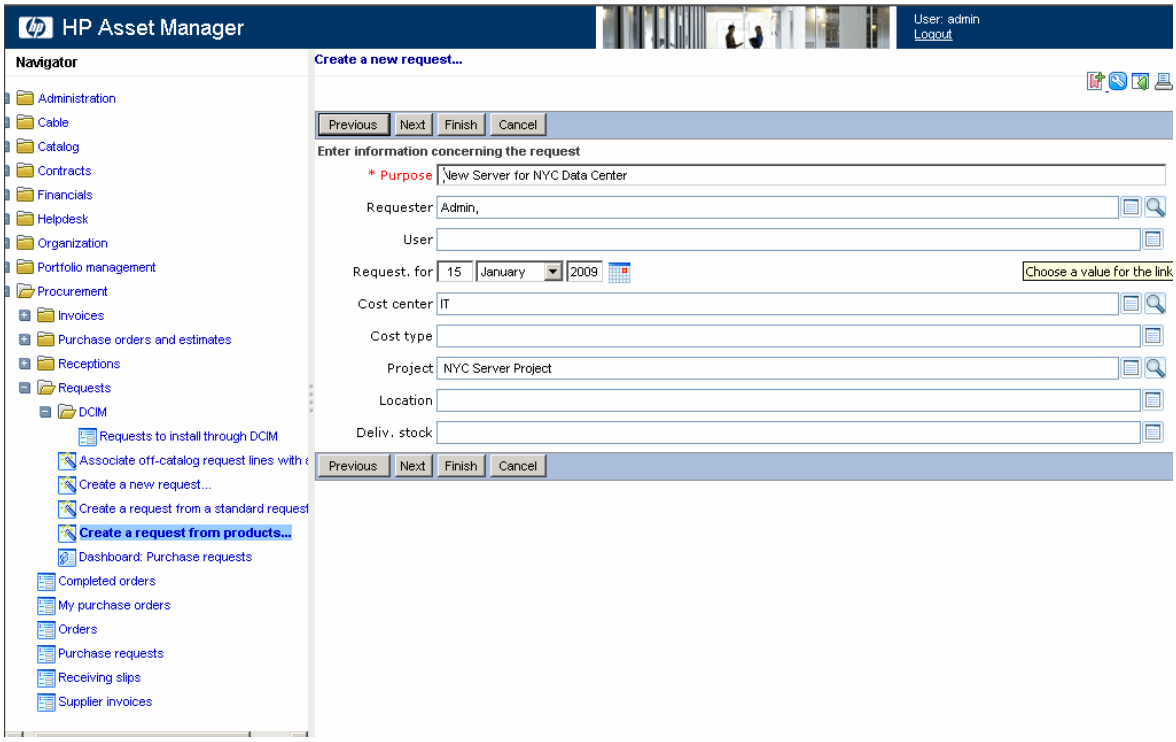
1. Launch Asset Manager.
2. Use the **Procurement/ Requests/ Create a request from products...** navigation bar entry. This launches the wizard. In the following example, the list of available products has been filtered to show only HP Proliant models:



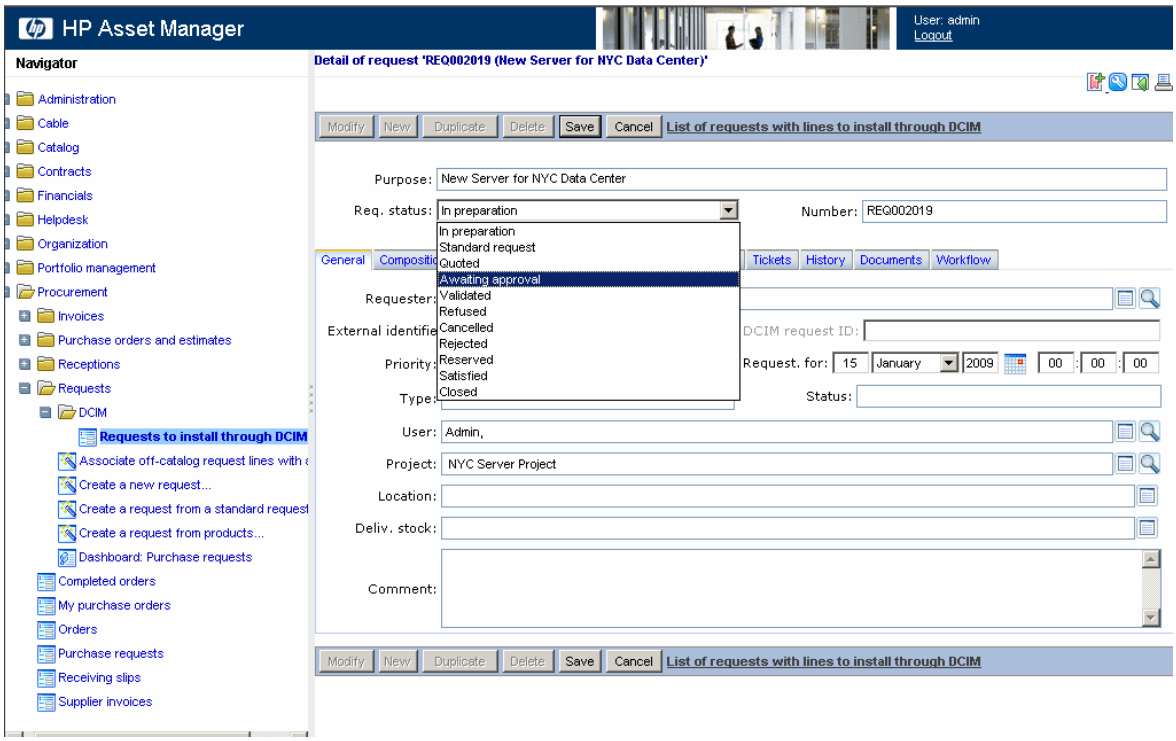
3. Select a model, then click **Next** to select corresponding Catalog Products and their quantity. (**Best Practice:** for a request intended to be installed via DCIM, select only products that are flagged as **Can be Installed through DCIM (**bCanBeInstByDCIM), and specify only locations for which **Location type** (LocationType) = **Data Center**.)
   In the following example, one Proliant DL580 has been added:



4. Click **Next** to add information such as Cost Center and Project, as in the following example:



5. A Summary screen offers you the chance to review details of the new request before you click **Finish**, which creates the Request record.
6. Change the **Req. Status** (seStatus) of the new Request to **Awaiting Approval**. (If you are using the Web client, click **Modify** from the Request detail screen to make the status drop-down list available, as in the following example.)

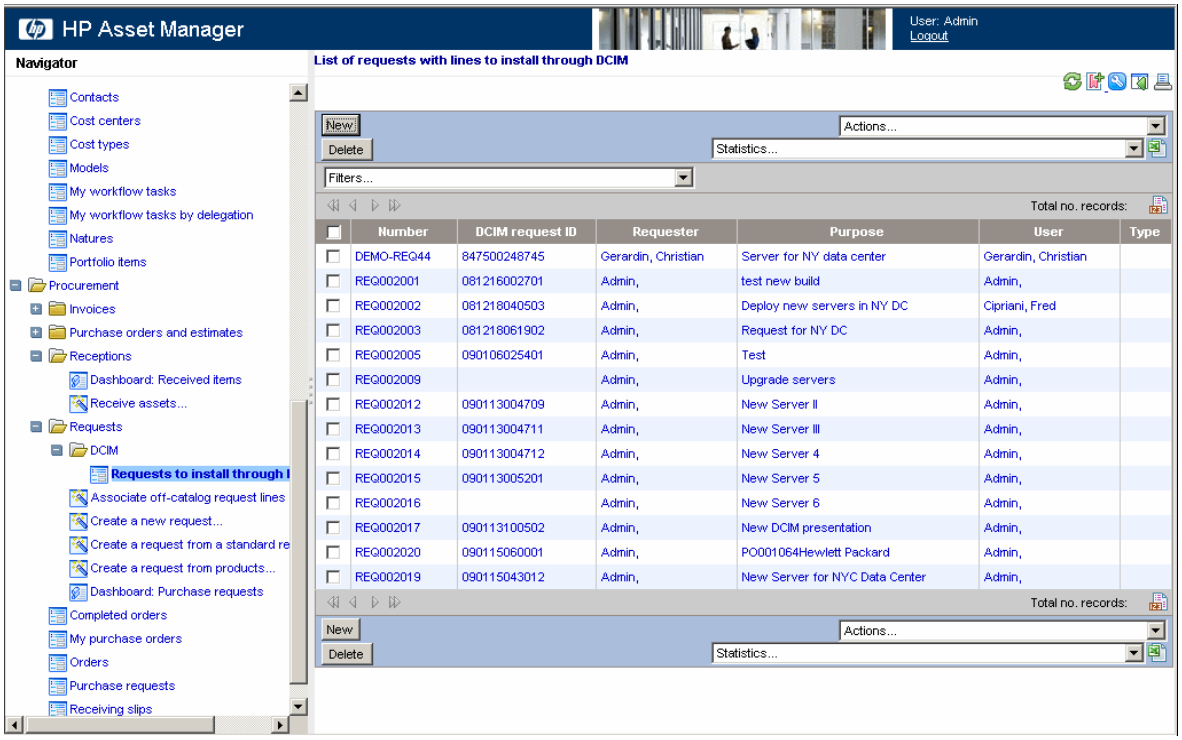


7. Click the **Save** button. If an Asset Manager purchasing workflow has been implemented, the Request will be routed to the appropriate approvers for validation.

Tip: You can click **Finish** at any stage in the wizard to create the Request, then return to it at a later point to add or modify details.

Another way to create a request and its request lines is via the new **Requests to install through DCIM** screen.

1. Launch Asset Manager.
2. Use the **Procurement/ Requests/ DCIM/ Requests to install through DCIM** navigation bar entry. The list of DCIM installation requests displays:



3. To create a new Request, select **New**.
4. Enter a Purpose, assign it to a **Project** (on the **General** Tab) and **Cost Type** and **Cost Center** (on the **Allocation** tab), add any other initial details, then click **Create**.

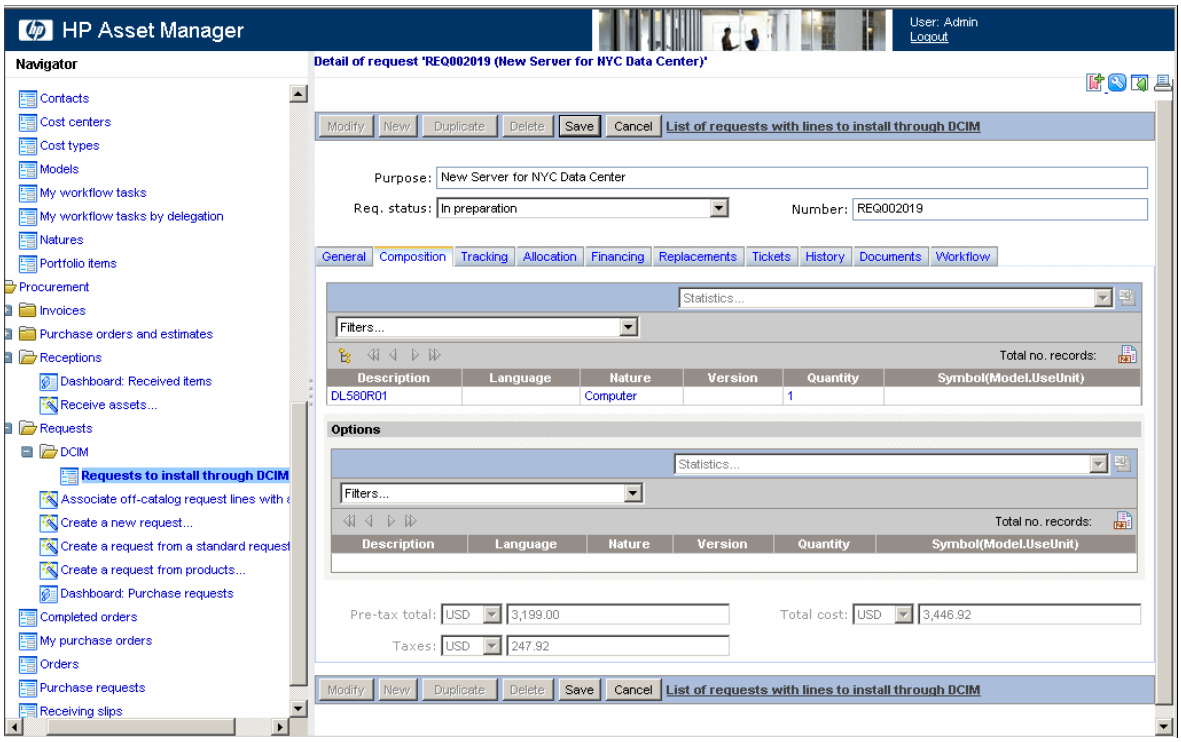
Add Asset Manager Request Lines

Note: To be installable via DCIM:

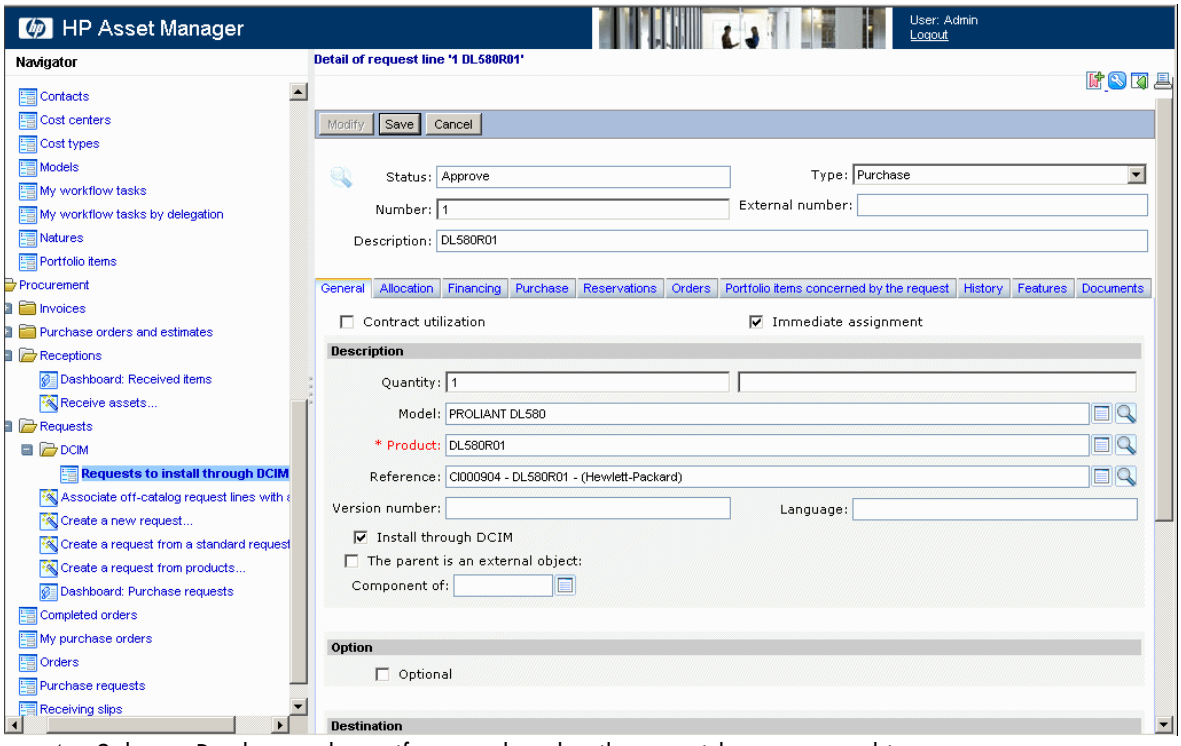
- Products selected on the Request Lines must be flagged as **Can be Installed through DCIM** (bCanBeInstByDCIM) on the **Catalog/ Products** screen (**Acquis.** tab, **Provisioning** section).
- The **Install through DCIM** (bInstByDCIM) flag must be checked on the Request Line detail screen.

To add one or more Request Lines for specific devices to a Request:

1. On the Request list screen, click on the Request.
2. The Request detail screen displays.
3. Select the **Composition** tab, as shown below, and then click **New**.



The Request Line detail screen displays, as in the example below.



4. Select a Product and specify any other details you wish to enter at this stage.
5. Click **Save** to create the Request Line.

2. Validate the Asset Manager Request

On the Request detail form, set the **Req. status** (seStatus) to **Awaiting Approval**, then click the **Save** button.

Best Practice: Try to not issue a Request without checking with the DCIM end-user that the **Location** (amLocation) on the Request corresponds to the final *delivery* location for the device(s). The location on a Purchase Order cannot be changed once it has been issued.

Equipment corresponding to the Request Lines now needs to be Reserved from stock (or first ordered and received into stock).

For further details of creating Requests and Request Lines, refer to the Asset Manager guide called **Procurement**, chapter **Procurement cycle**.

3a. Connect-It transmits the Request to DCIM

Assuming that the **amdcim_provisioning.scn** scenario has been Started, details of the new request will be synchronized to DCIM.

3b. Connect-It adds device records to newly created install request

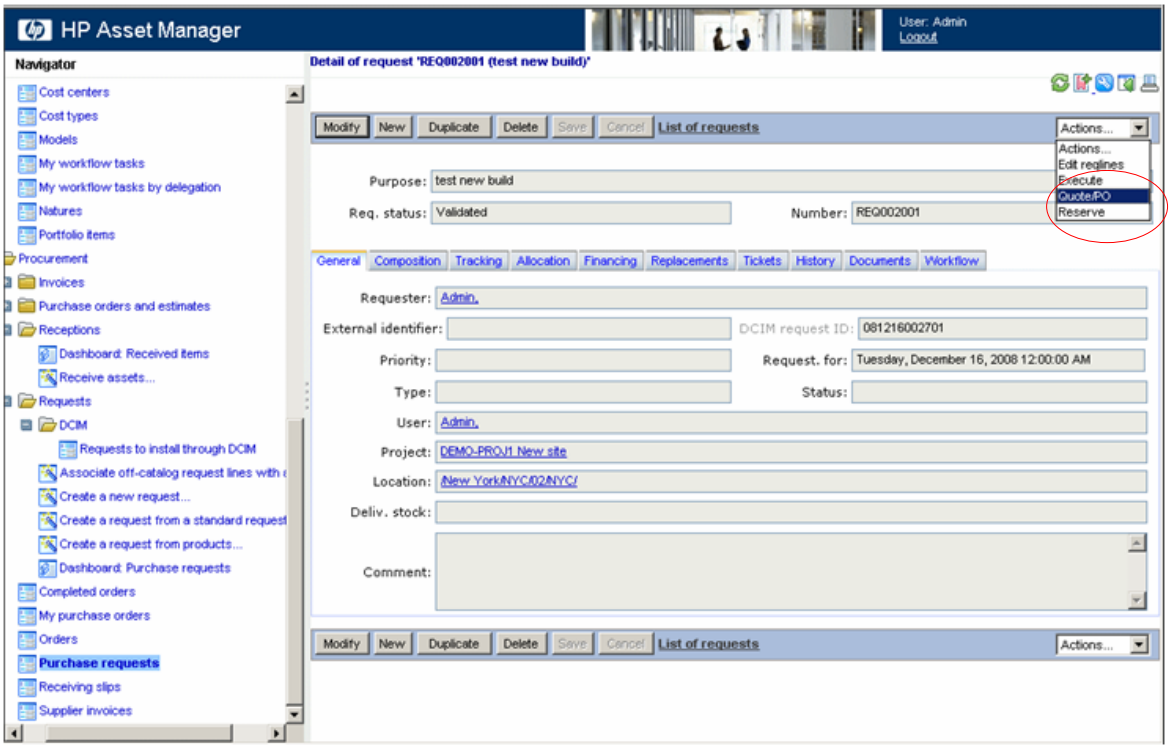
When the transfer of Request data to DCIM has occurred, a **DCIM Request ID** is assigned in the **formID** field, and is exported back to Asset Manager where it is displayed on the Request list and detail screens.

Note: Depending on the scheduling frequency of the scenarios, details of new requests or modifications to their status may not be visible immediately.

4a. Raise Asset Manager Purchase Orders for new devices

The next stage in the procurement workflow is to raise a Purchase Order for device(s) needed for Requests whose **Req.Status** (seStatus) has been set to **Validated**. (Unless equipment can be reserved directly from existing stock.)

From the Request detail screen select **Quote/PO** from the Actions drop-down list, as circled in red in the following example:

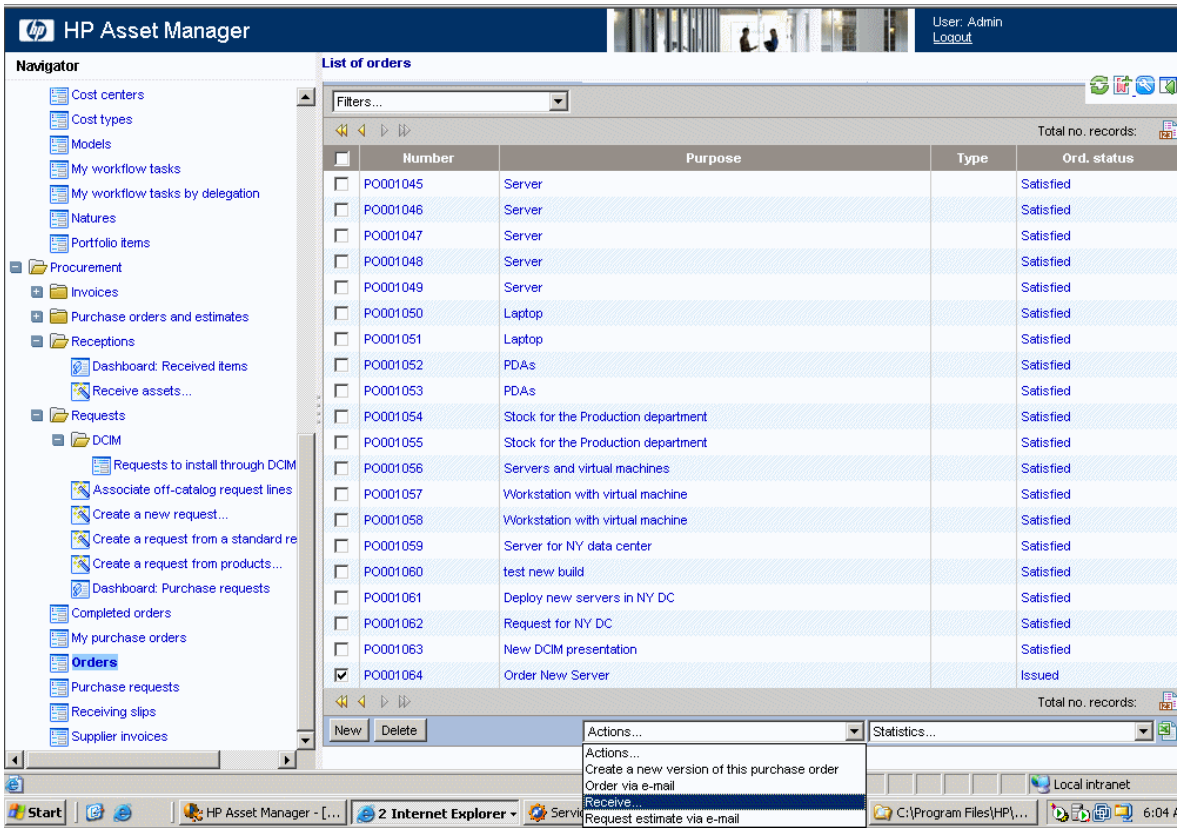


Using the wizard that launches, specify the Request Lines for which to raise the Purchase Order.

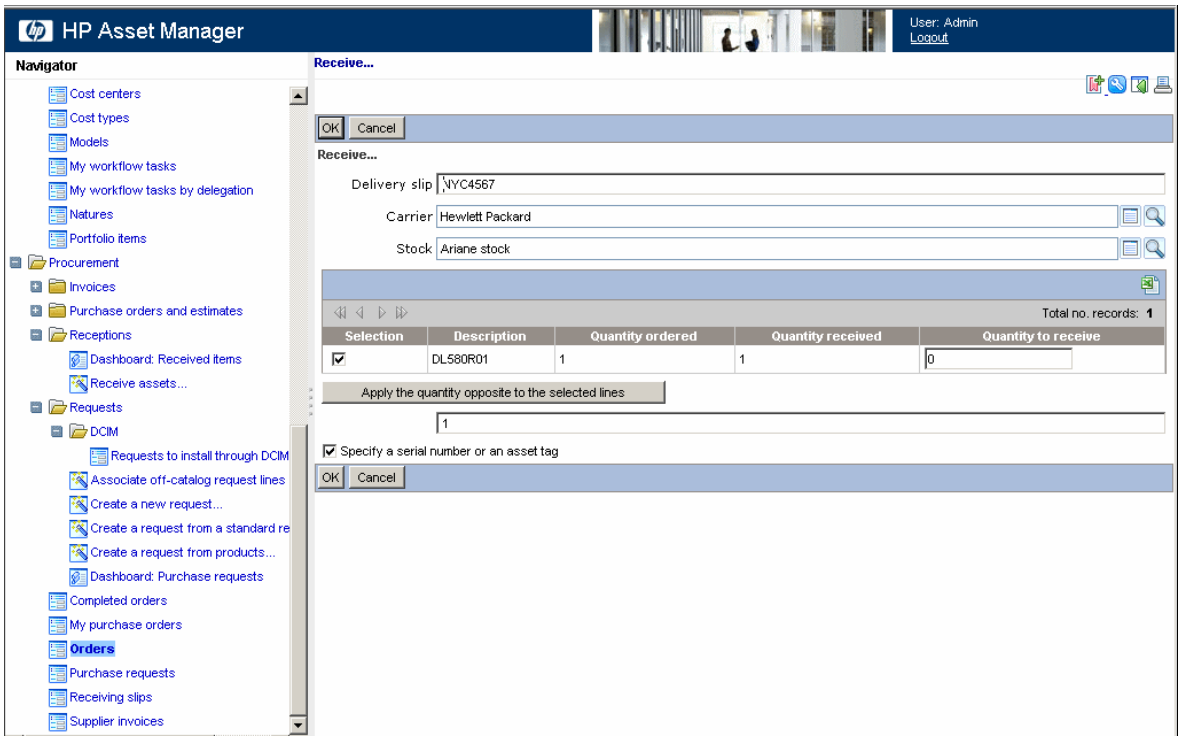
For further details of creating and managing Purchase Orders, see the Asset Manager **Procurement** guide, **Orders** chapter.

4b. Receive devices

For a Purchase Order whose **Ord. status** (seStatus) is **Issued**, you can record stock delivery by selecting the Order on the Orders list screen and selecting **Receive...** from the **Actions** drop-down menu, as in the following example.



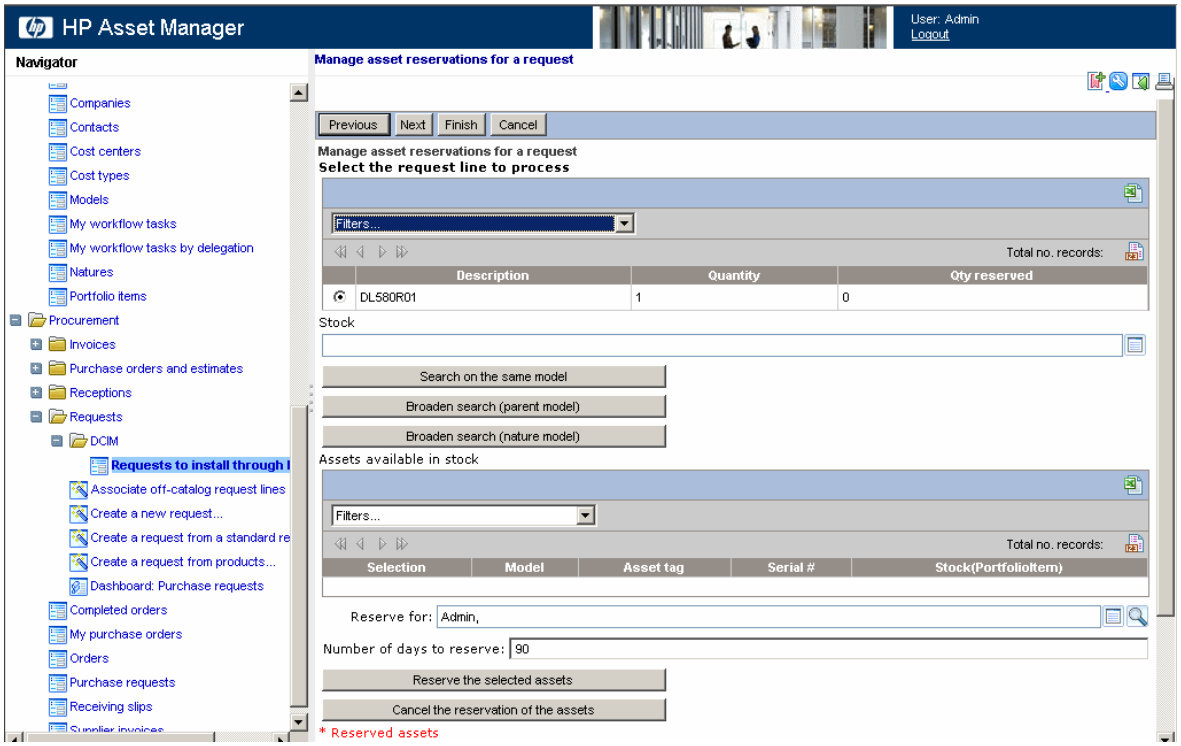
This launches the **Receive...** (sysProcPOrderReceipt) wizard, as shown below, on which you can reconcile quantities ordered and received, for each Order Line on the Order.



Once the system has confirmed that all ordered stock has been received, the **Ord. status** (seStatus) of the Order is set to **Satisfied**.

4c. Reserve devices

1. To mark equipment in stock as **Reserved** (for an installation) select the initial Request from the Request list and choose **Manage asset reservations for a request....** This launches the corresponding wizard (sysProcRequestStock), as shown in the following example.



2. Select the Request Line(s) to process, match them with Assets available in stock, change the reservation period if necessary, and click **Reserve the selected assets**.

3. Click **Finish** to process your reservations and close the wizard.

Note: If no unreserved devices are available in stock, you will have to raise a new Purchase Order and/or wait for an existing Order to be Received into stock (Satisfied) before proceeding.

Once the devices have been flagged as **Reserved**, an Installation Scheduling slot can be specified on the DCIM installation request, and it can be flagged as **Scheduling Complete**. At this point all the requirements have been satisfied in the procurement and provisioning workflows for actual installation to proceed.

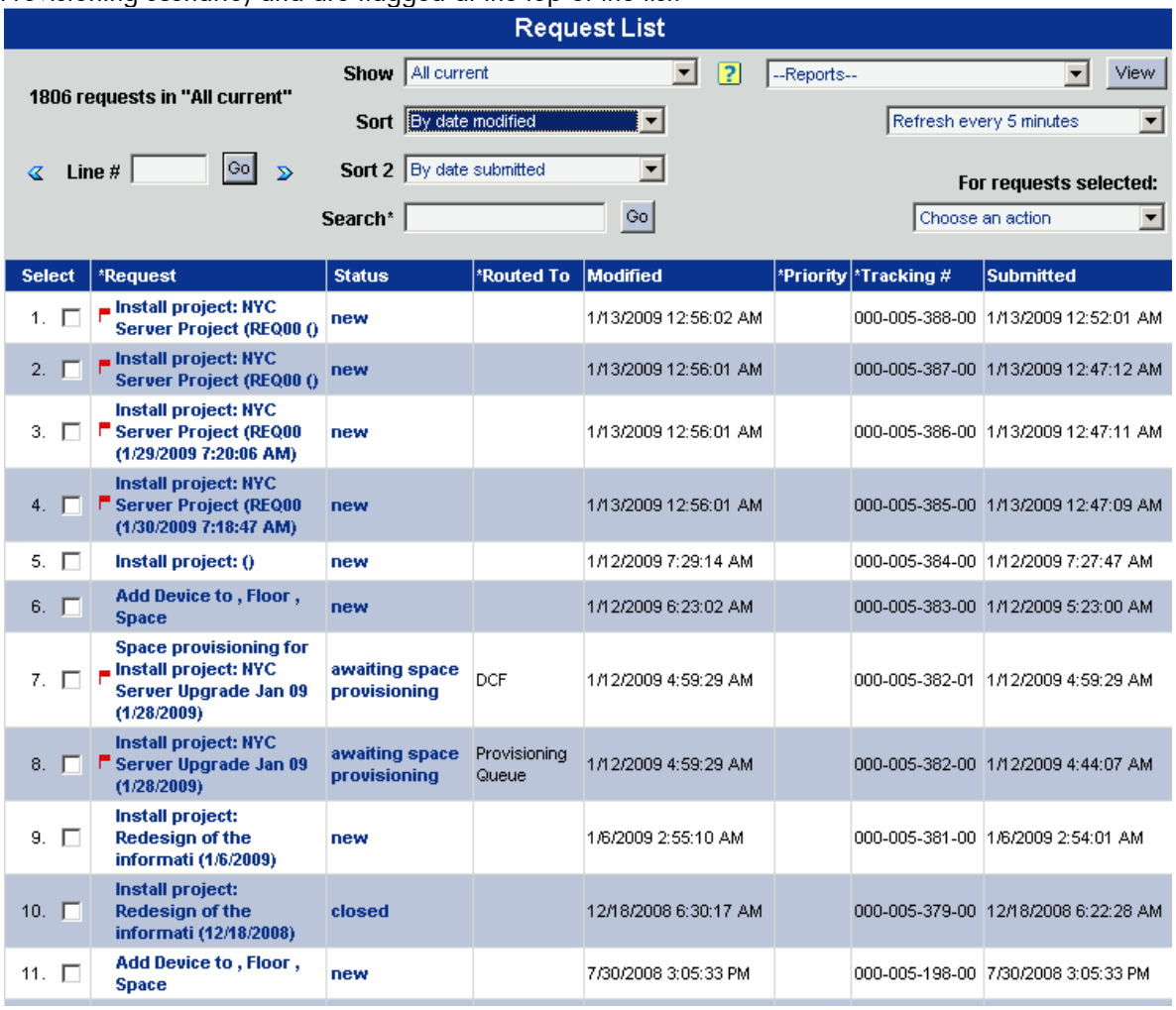
4d. Provision DCIM Request

Once a Request for a DCIM installation has been **Validated** in Asset Manager, its key details are exported to DCIM by Connect-It. The provisioning workflow is triggered in DCIM, and an Installation Request is created, followed by the corresponding Request Lines.

Follow this procedure to check for new purchase requests from Asset Manager for devices to install via DCIM.

1. Launch DCIM.
2. Open the DCIM Requests list (**Request List** link from the DCIM navigation bar).

In the example below, several new server requests have been exported from Asset Manager (via the Provisioning scenario) and are flagged at the top of the list.



Request List

1806 requests in "All current"

Show: All current | --Reports-- | View

Sort: By date modified | Refresh every 5 minutes

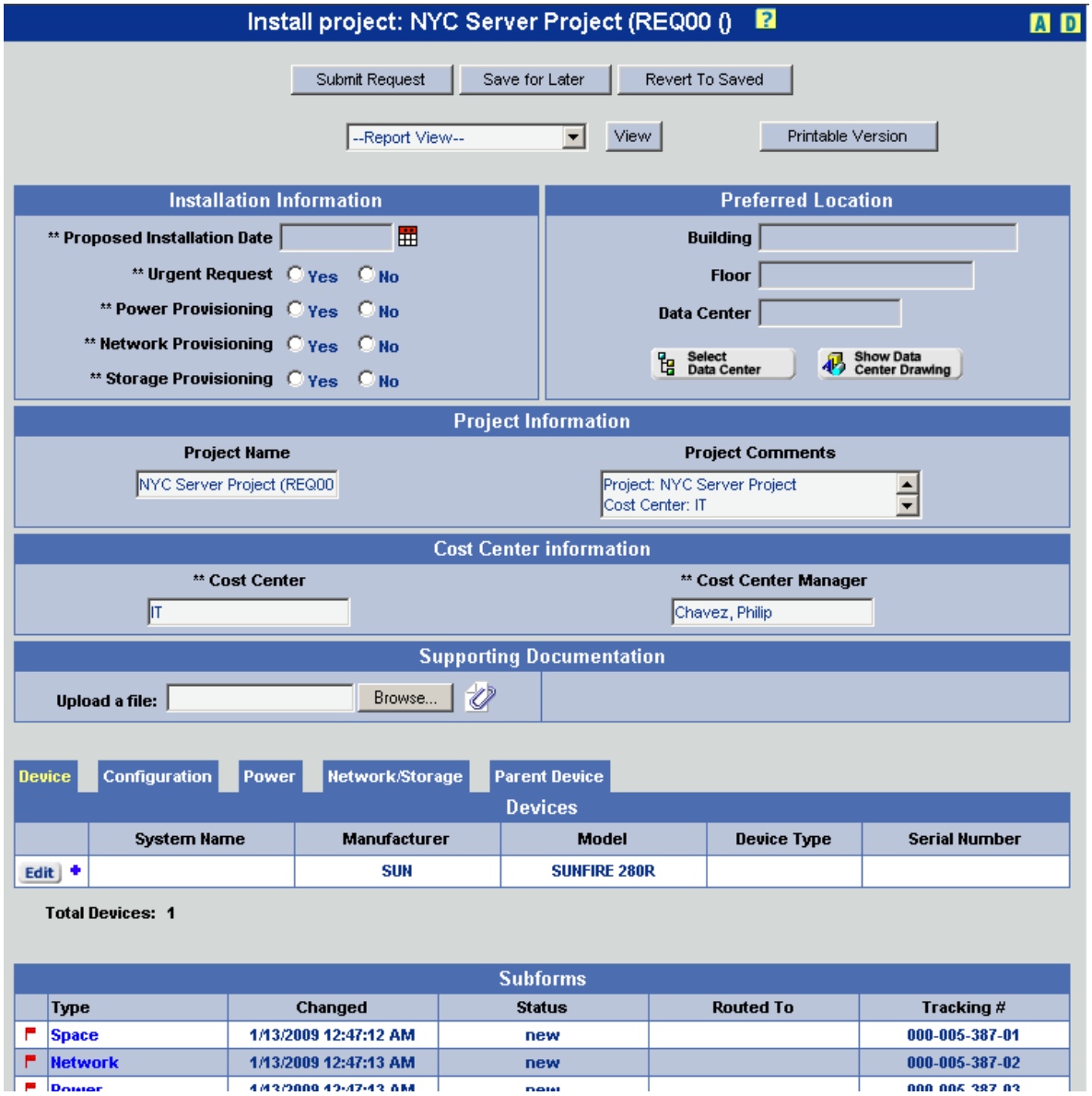
Line # | Go | Sort 2: By date submitted

Search* | Go | For requests selected: Choose an action

Select	*Request	Status	*Routed To	Modified	*Priority	*Tracking #	Submitted
1.	Install project: NYC Server Project (REQ00 ()	new		1/13/2009 12:56:02 AM		000-005-388-00	1/13/2009 12:52:01 AM
2.	Install project: NYC Server Project (REQ00 ()	new		1/13/2009 12:56:01 AM		000-005-387-00	1/13/2009 12:47:12 AM
3.	Install project: NYC Server Project (REQ00 (1/29/2009 7:20:06 AM)	new		1/13/2009 12:56:01 AM		000-005-386-00	1/13/2009 12:47:11 AM
4.	Install project: NYC Server Project (REQ00 (1/30/2009 7:18:47 AM)	new		1/13/2009 12:56:01 AM		000-005-385-00	1/13/2009 12:47:09 AM
5.	Install project: ()	new		1/12/2009 7:29:14 AM		000-005-384-00	1/12/2009 7:27:47 AM
6.	Add Device to , Floor , Space	new		1/12/2009 6:23:02 AM		000-005-383-00	1/12/2009 5:23:00 AM
7.	Space provisioning for Install project: NYC Server Upgrade Jan 09 (1/28/2009)	awaiting space provisioning	DCF	1/12/2009 4:59:29 AM		000-005-382-01	1/12/2009 4:59:29 AM
8.	Install project: NYC Server Upgrade Jan 09 (1/28/2009)	awaiting space provisioning	Provisioning Queue	1/12/2009 4:59:29 AM		000-005-382-00	1/12/2009 4:44:07 AM
9.	Install project: Redesign of the informati (1/6/2009)	new		1/6/2009 2:55:10 AM		000-005-381-00	1/6/2009 2:54:01 AM
10.	Install project: Redesign of the informati (12/18/2008)	closed		12/18/2008 6:30:17 AM		000-005-379-00	12/18/2008 6:22:28 AM
11.	Add Device to , Floor , Space	new		7/30/2008 3:05:33 PM		000-005-198-00	7/30/2008 3:05:33 PM

3. Click a request to open the detailed **Install project** screen (DCIM equivalent of the generic **Equipment Installation Request** screen).

4. Edit additional details as required.
   For instance, selecting **Install Project 1** from the example list above would display the following details:



Tips:

- Fields for which information is still required are flagged with **.

Installation Information

This section lets you

- Assign a **Proposed Installation Date**
- Specify if the request is Urgent, and whether Provisioning for Power, Network and Storage is required.
  - If any of these are checked as requirements, they become prerequisites to the physical installation, and you will need to use the relevant Subforms or Views to give their specifications, and eventually to confirm that the Provisioning requirements have been met.

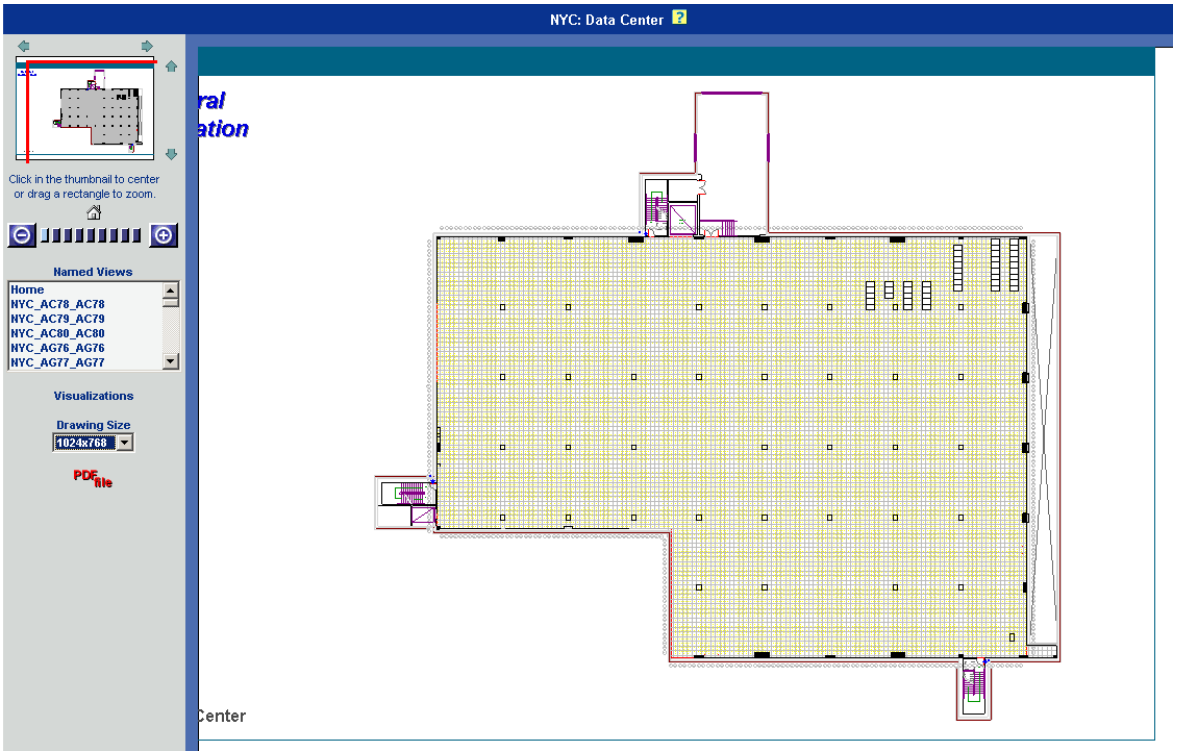
- Note that any provisioning requirements will be listed as separate requests on the Request List.

Preferred Location

Note: The link to a location specified on Asset Manager Request is exported to DCIM. However if you change the location of the request in DCIM during the validation steps, that change is not automatically propagated back (neither to the Asset Manager Purchase Order nor the Request). It could even be that the Purchase Order has been sent to the supplier with the initially defined Location that is now obsolete. In such a case, you should contact an Asset Manager user to update the Purchase Order delivery location (N.B. this in turn can only be changed before the Purchase Order is issued.)

The **Select Data Center** button allows you to choose a new location from the hierarchical Tree View. For further details of using this form, refer to the Aperture VISTA **User's guide**.

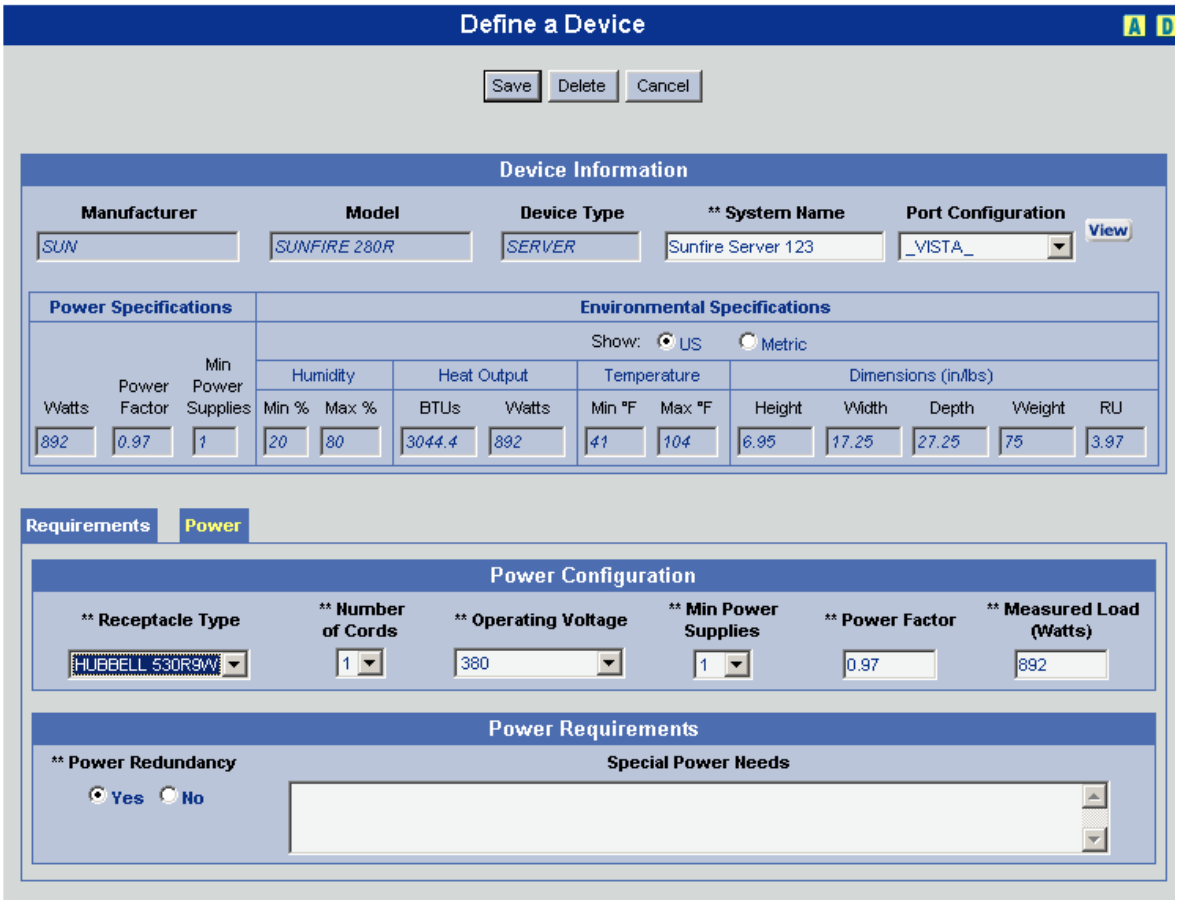
You can also use the **Show Data Center Drawing** button to display a plan view of the selected Data Center. For instance:



Project Information and **Cost Center Information**
Note that these sections on the DCIM request are populated with details from the Asset Manager Request.

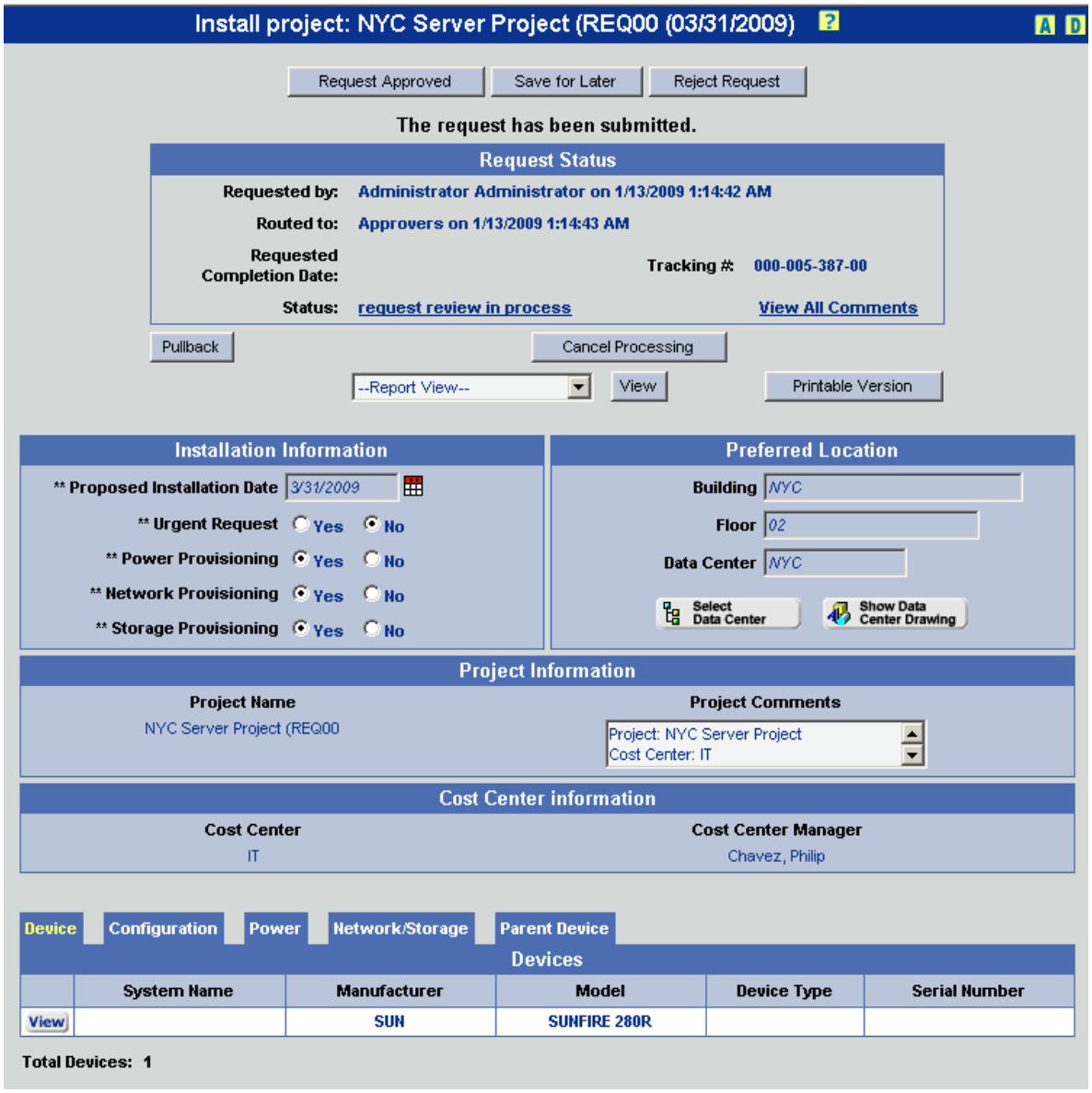
Note: use the **Add** / **Edit** button listed next to Device(s) to add details of configuration items such as IP addresses, connections and storage components. (You cannot edit this section until you have completed the **Installation Information** and **Preferred Location** sections.)

Note: for proper workflow operation, each device record must be edited to contain data for all required fields.
For servers, you must specify a **System Name**, and **Power** requirements, as in the example below. Some other details are propagated, if specified, from Asset Manager (for instance **Device Type**).



5. Click **Save** to return to the Install project screen.

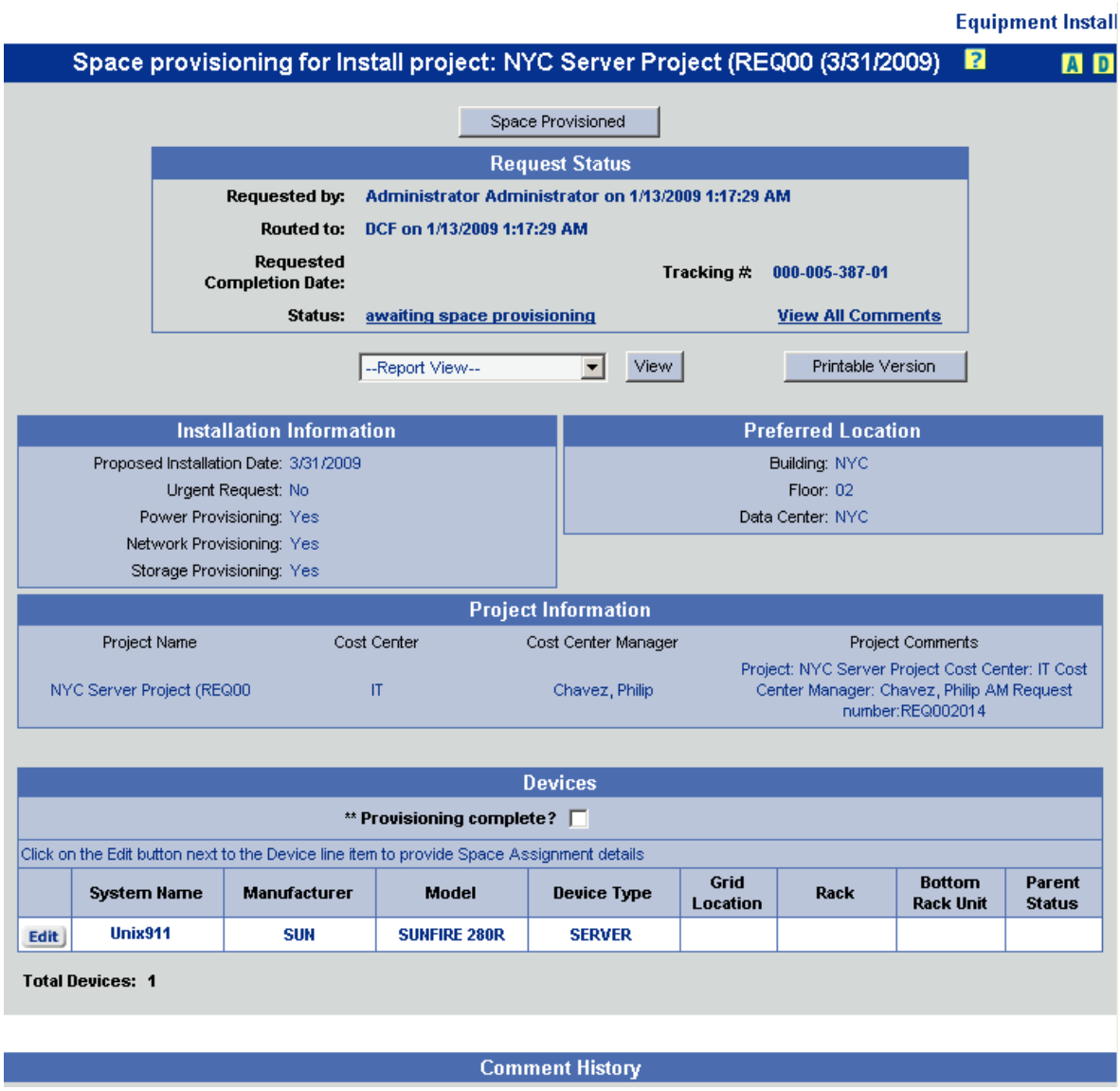
6. When all the required fields have been populated, click the **Submit Request** button. A confirmation displays, as in the following example:



The request is routed to the appropriate Approvers.

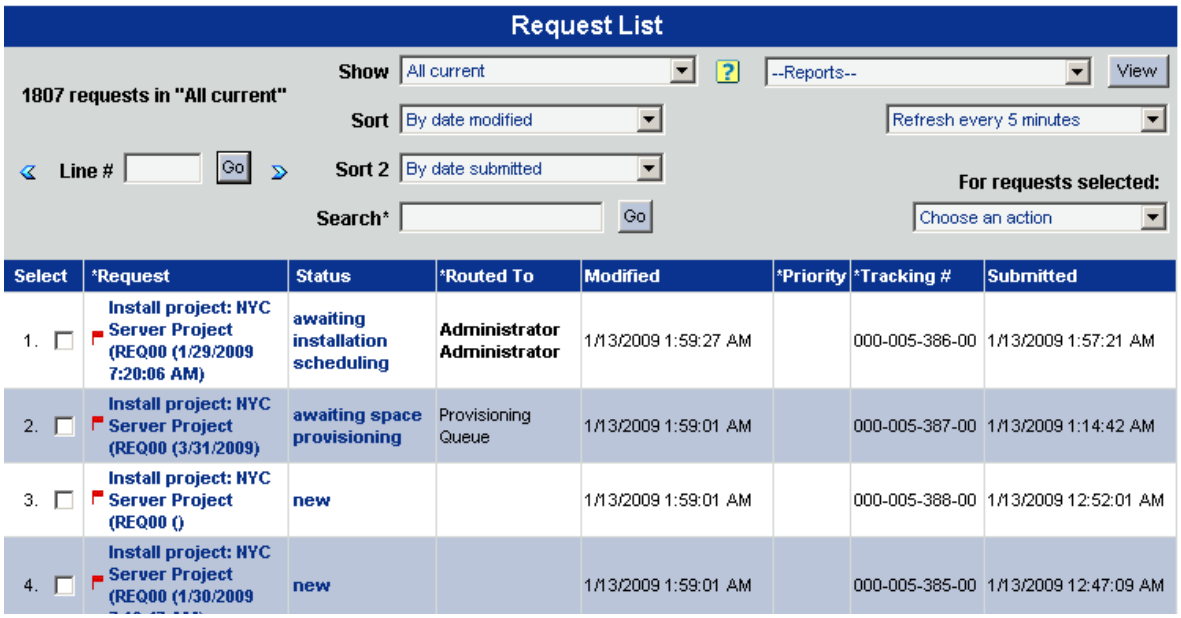
7. When Approval has occurred, you can use the **Request Approved** button to confirm this.

8. Any Provisioning requirements now need to be confirmed. For instance, in the example below, you are prompted to click the **Edit** button in the **Devices** section to provide space provisioning details.



Refer to the Aperture VISTA documentation for details of how to specify Rack location, etc.

9. Proceed in a similar manner for other required Provisioning details.
   Once these details are complete, and you have confirmed this, the status of the Request advances to **awaiting installation scheduling**, as in the example below:



Select	*Request	Status	*Routed To	Modified	*Priority	*Tracking #	Submitted
1.	Install project: NYC Server Project (REQ00 (1/29/2009 7:20:06 AM)	awaiting installation scheduling	Administrator Administrator	1/13/2009 1:59:27 AM		000-005-386-00	1/13/2009 1:57:21 AM
2.	Install project: NYC Server Project (REQ00 (3/31/2009)	awaiting space provisioning	Provisioning Queue	1/13/2009 1:59:01 AM		000-005-387-00	1/13/2009 1:14:42 AM
3.	Install project: NYC Server Project (REQ00 ()	new		1/13/2009 1:59:01 AM		000-005-388-00	1/13/2009 12:52:01 AM
4.	Install project: NYC Server Project (REQ00 (1/30/2009	new		1/13/2009 1:59:01 AM		000-005-385-00	1/13/2009 12:47:09 AM

Tip: To display the **Status History** screen for any Request, click on its Status.

5. Asset Manager notifies DCIM that install can proceed

(Initiated by Connect-It scenario)

Asset tags (AssetTag) are transferred from Asset Manager to DCIM. (Asset tags are assigned automatically to new devices in Asset Manager.)

The AM_REQUEST_STATUS field is updated on the VISTA EMAC_Install form. (This field is hidden by default, but can be displayed as part of the integration setup. See Customizing DCIM to support the integration, on page 31)

6. Schedule Installation

To specify a scheduled installation time for a given Request in DCIM:

1. Click on the Request List link.
2. Click on the Request name to open it in the **Install Project** form.
3. Complete the **Scheduling Information** section, including a **Change Control Number**, and click **Scheduling Complete**.

The request status changes to **awaiting equipment installation**.

Note: before you can schedule the install, all devices linked to the relevant Request Lines must be marked as **Received** by Asset Manager.

7. Execute DCIM Request

At this point, engineers may wish to access the request details on the DCIM **Install Project** form, and then select **Printed Version** to print request details to support the installation.

8. Close DCIM Request

When installation of a Request is finished:

1. Reopen it in the DCIM **Install Project** form
2. Click **Edit** against the installed Device.
3. Record the **Barcode** and **Serial Number** of the installed device if these have not been transmitted from Asset Manager. (Repeat steps 2 and 3 for each device.)
4. Return to the DCIM **Install Project** form and click **Installation Complete**. At this point, the DCIM Request status changes to **closed**.

9. DCIM sets Portfolio Item **Assignment** (seAssignment) field to In Use

(Initiated by Connect-It Provisioning scenario)

The **Assignment** (seAssignment) field in Asset Manager is updated to **In Use**.

10. DCIM creates devices in the Repository database

(DCIM automated process)

11. DCIM Transmits location of devices to Asset Manager database

(Initiated by Connect-It scenario)

12. Asset Manager transmits Barcode and Serial numbers to DCIM database

(Initiated by Connect-It scenario)

13. Close Asset Manager Request

At this point the databases are synchronized with complete information for the requests.

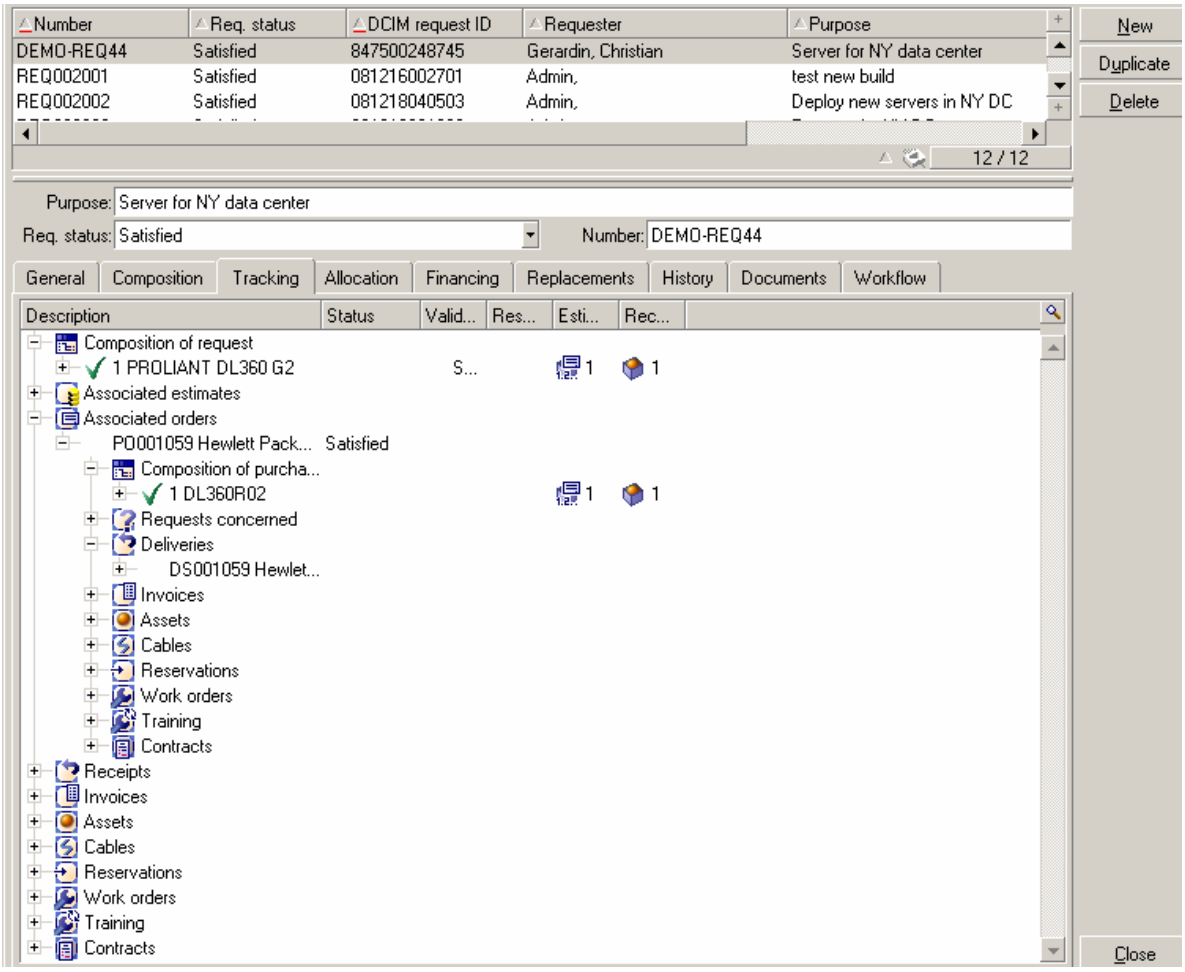
The status of the corresponding Asset Manager Request should be changed from **Satisfied** to **Closed** by the appropriate user.

For further details the DCIM **Request List**, **Equipment Installation Request** and **Install Project** forms, refer to the Aperture VISTA **User's Guide**.

Tracking Request progress with Asset Manager

To recap, once a Purchase Request is validated, a corresponding Purchase Order can be generated. The workflow progresses as the corresponding materiel is Received, Reserved, and eventually Installed.

You can track the status of all the stages of the procurement workflow, and drill down to full detail at each stage, via the **Tracking** tab on the Request detail screen, as in the following example from the Asset Manager Windows client. (This functionality is currently not available in the Web client.)



Displaying the location of a device installed through DCIM

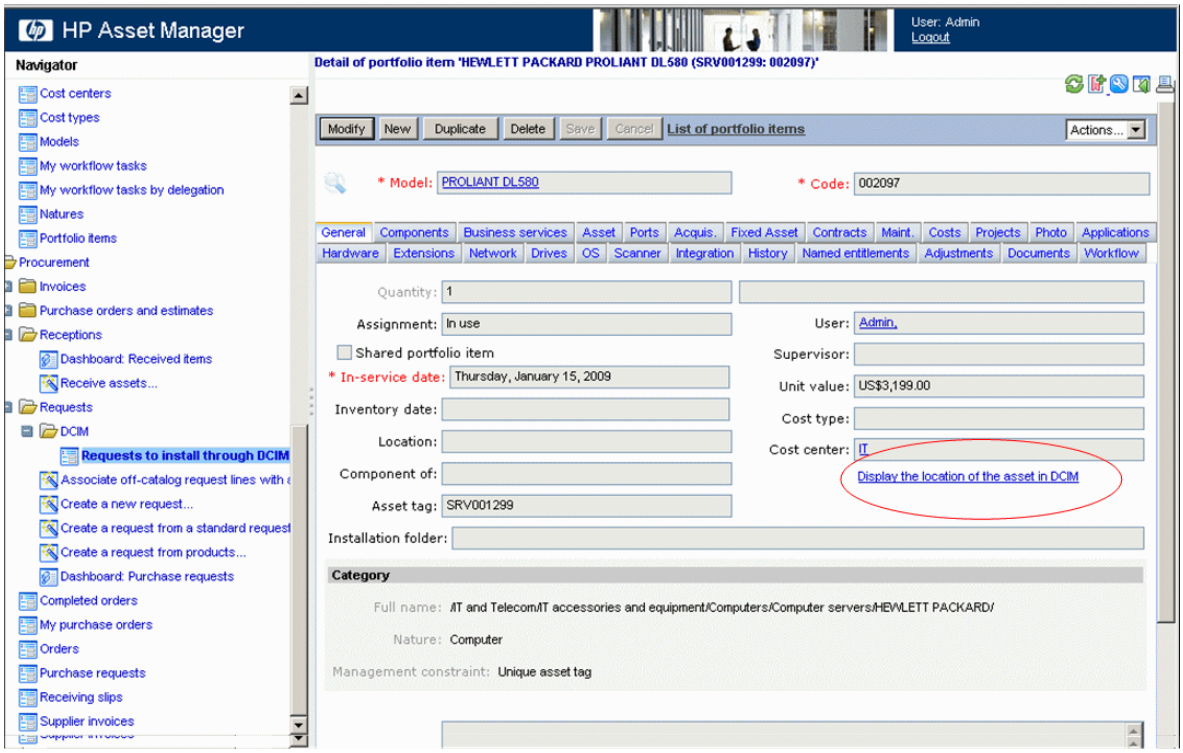
As location data is synchronized from DCIM to Asset Manager, Asset Manager users directly retrieve the location of a given asset.

1. From the detail of Request line screen, select the Portfolio items concerned by the request tab.

2. Select a Portfolio item.

(**Tip:** this is equivalent to selecting a portfolio item via the **Portfolio Management/ Portfolio items** navigation bar link).

The Portfolio Item detail screen displays, as in the following example. When the portfolio item corresponds to a device that is or will be installed via DCIM, an additional link displays on this screen (circled in red below):



3. Click the **Display the location of the asset in DCIM** link. This launches the corresponding floor plan from the DCIM Repository.

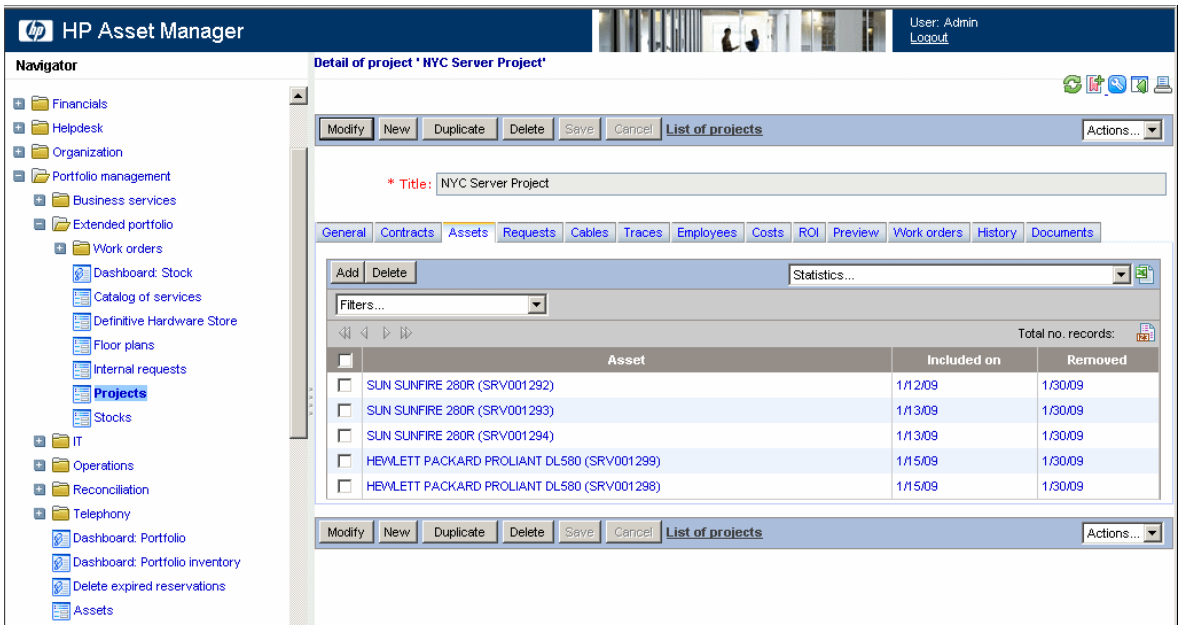
Note: the URL for this link needs to have been configured during the setup stage of the integration between Asset Manager and DCIM. See the section called Modifying the URL for the *DCIM Location* (sysCoreWebDCIMAssetLocation) Calculated field, on page 29

View Assets and Requests by Project in Asset Manager

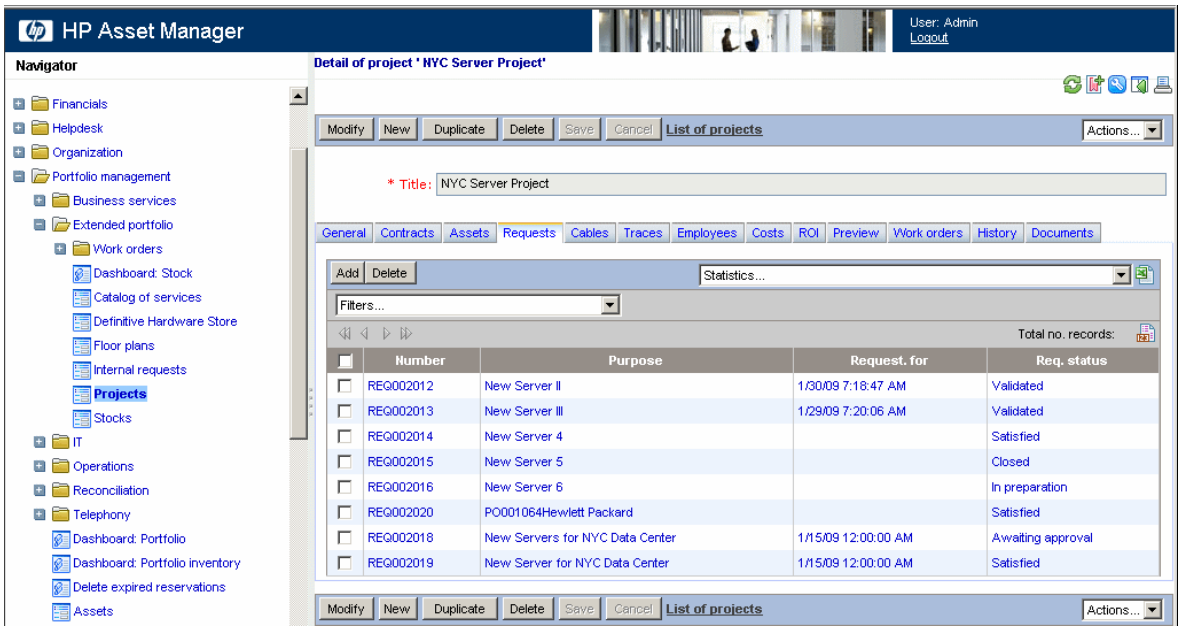
You may find it useful to monitor the Assets or Requests linked to a given Project. To do this, follow this procedure.

1. Use the **Portfolio management/ Extended portfolio/ Projects** link on the navigation bar.
2. Select a Project from the list.

3. To view the list of Assets linked to the Project, select the **Assets** tab. The example below shows all the server assets linked to the NYC Server Project.



4. To view the Requests linked to the selected Project, select the Requests tab, as in the example below:



Reporting on Data Center installations

Overview

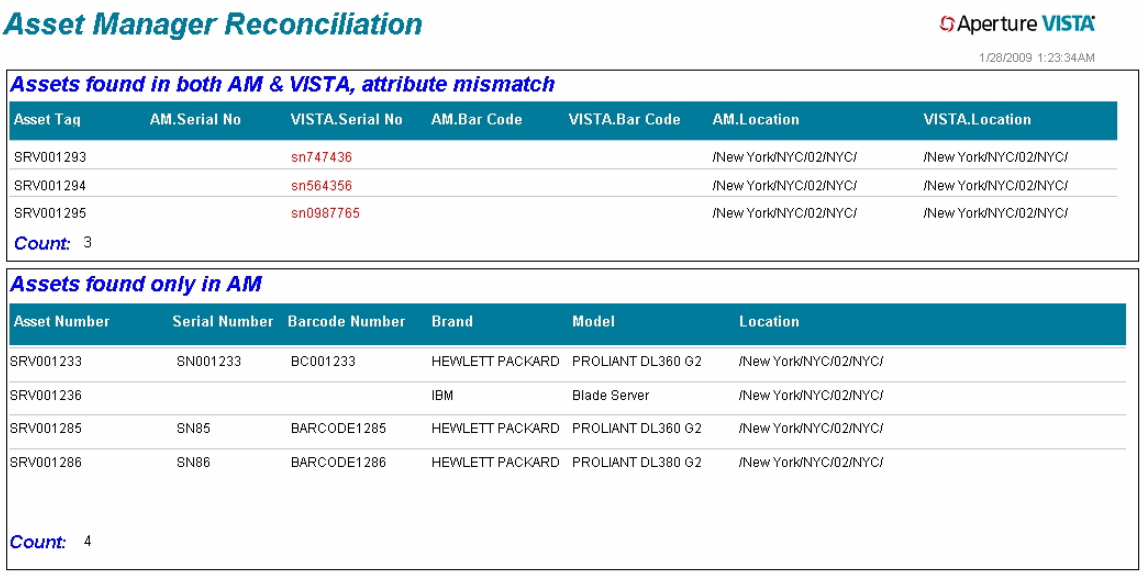
A Crystal Report called **Asset Manager Reconciliation** is supplied in the integration package to help DCIM users identify and rectify anomalies in asset data. It attempts to match assets in the Asset Manager and DCIM by Asset Tag.

The report contains three sections:

Section	Details shown	Action to reconcile
Assets found in both AM and VISTA, attribute mismatch	Records successfully matched on the Asset Tag, but whose serial numbers in AM and VISTA do not match	Manually edit the mismatched attributes (you may need to contact an Asset Manager user)
Assets found only in AM	Assets in Asset Manager for which a corresponding match on Asset Tag in DCIM is not possible	Use the corresponding Location data to investigate the Device and edit records as needed
Assets found only in VISTA	Devices in VISTA which could not be matched to an Asset Manager Asset	Use the corresponding Location and Symbol data to investigate the Device and edit records as needed

Note: Sometimes a mismatch or missing asset record is due to the fact that a device has been decommissioned from a Data Center.

The report samples below show the information that appears in these sections:



Asset Manager Reconciliation

Aperture VISTA

1/28/2009 1:23:34AM

Assets found in both AM & VISTA, attribute mismatch

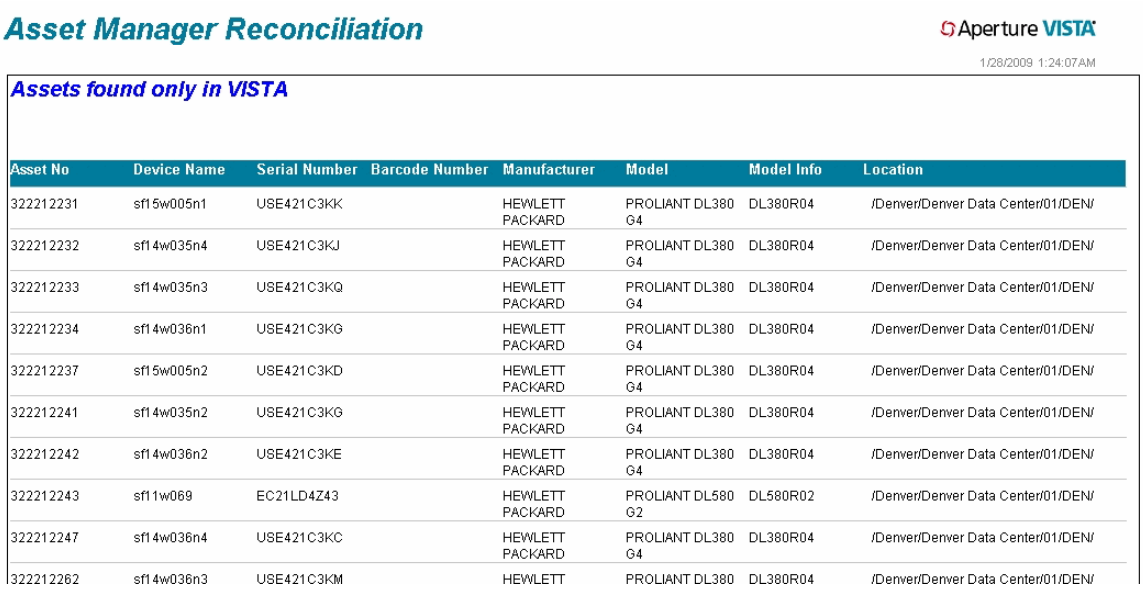
Asset Tag	AM.Serial No	VISTA.Serial No	AM.Bar Code	VISTA.Bar Code	AM.Location	VISTA.Location
SRV001293		sn747436			/New York/NYC/02/NYC/	/New York/NYC/02/NYC/
SRV001294		sn564356			/New York/NYC/02/NYC/	/New York/NYC/02/NYC/
SRV001295		sn0987765			/New York/NYC/02/NYC/	/New York/NYC/02/NYC/

Count: 3

Assets found only in AM

Asset Number	Serial Number	Barcode Number	Brand	Model	Location
SRV001233	SN001233	BC001233	HEWLETT PACKARD	PROLIANT DL360 G2	/New York/NYC/02/NYC/
SRV001236			IBM	Blade Server	/New York/NYC/02/NYC/
SRV001285	SN85	BARCODE1285	HEWLETT PACKARD	PROLIANT DL360 G2	/New York/NYC/02/NYC/
SRV001286	SN86	BARCODE1286	HEWLETT PACKARD	PROLIANT DL380 G2	/New York/NYC/02/NYC/

Count: 4



Asset Manager Reconciliation

Aperture VISTA

1/28/2009 1:24:07 AM

Assets found only in VISTA

Asset No	Device Name	Serial Number	Barcode Number	Manufacturer	Model	Model Info	Location
322212231	sf15w005n1	USE421C3KK		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212232	sf14w035n4	USE421C3KJ		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212233	sf14w035n3	USE421C3KQ		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212234	sf14w036n1	USE421C3KG		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212237	sf15w005n2	USE421C3KD		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212241	sf14w035n2	USE421C3KG		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212242	sf14w036n2	USE421C3KE		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212243	sf11w069	EC21LD4Z43		HEWLETT PACKARD	PROLIANT DL580 G2	DL580R02	/Denver/Denver Data Center/01/DEN/
322212247	sf14w036n4	USE421C3KC		HEWLETT PACKARD	PROLIANT DL380 G4	DL380R04	/Denver/Denver Data Center/01/DEN/
322212262	sf14w036n3	USE421C3KM		HEWLETT	PROLIANT DL380	DL380R04	/Denver/Denver Data Center/01/DEN/

Installing and running the report

See steps 9 and 10 of section Customizing DCIM to support the integration

Before using the report for the first time, the following data synchronization needs to have occurred:

- Locations need to be transferred from DCIM to Asset Manager using Connect-It. These locations need to be normalized in Asset Manager (only one instance of each location), and flagged with **Location type** (LocationType) = **Data Center**.
- Asset tags need to be transferred from Asset Manager to DCIM using Connect-It.

You can run the report using the Crystal Reports Viewer (installed by default on the DCIM server).

Note: While using the report to access the Asset Manager database, select then the ODBC connection named **HP Asset Manager**. To access the DCIM database, select the ODBC connection named **VISTARep** .

For further details of configuring these connections, see the section called Configuring the Connectors on page 14

Summary

The integration of HP Asset Manager with HP DCIM (Aperture VISTA) is simple for existing users of either or both systems to implement. The costs for existing users are low, and the risks attached are minimal. The benefits are immediate and wide ranging. Notably, in terms of increased management visibility of data center operations, and the reliability and cost effectiveness of those operations.

Frequently Asked Questions

The following questions and answers, issues and solutions may help resolve the most common technical queries concerning this integration.

1. If for a given request in Asset Manager, one request line is **Installable through DCIM**, and another is not, does this cause any conflicts?
   ANS: In principle there are no conflicts in the system. Asset Manager exports to DCIM all and only the request lines for devices flagged as **Installable through DCIM**. However it is a recommended Best Practice to create your request so that all these request lines have the same Location (and this should be a Data Center for devices that are Installable through DCIM).
2. Must all the request lines for a given Asset Manager request have the same delivery location?
   ANS: The integration between Asset Manager and DCIM only takes the request location into account. Any location specified at the request lines detail will not be transferred and may be misleading in the case of request lines transferred to DCIM. A request has a single location, and this should be a Data Center for devices that are Installable through DCIM).
   However, DCIM devices associated to the request will be assigned more specific locations for installation, *within* that Data Center.
3. What happens with the location associated to the Asset Manager request when the request is transferred to DCIM?
   ANS: If the location's **Location type** (LocationType) is Data Center and the location was imported from DCIM, the link between the request and the location is transferred to DCIM.
   In any other instances, the link between the location and the request is not transferred; Users will have to assign the right location in DCIM directly and will need to notify the delivery location to the person creating the purchase orders in Asset Manager.
   Note that new Data Center locations should be defined in DCIM – these are then propagated to Asset Manager. (However, if a location is deleted in DCIM, this change is not currently propagated to the locations listed in Asset Manager. Workaround: In Asset Manager, change the **Location type** (LocationType) so that it is no longer listed as a **Data Center**.)
4. When trying to save request details in DCIM, I often get the following error message:
   `The request was changed by someone else while you were looking at the request. No changes saved. Please try again.`
   ANS: Try reducing the scheduling frequency of the Connect-It scenarios. This will reduce the likelihood that request data will be synchronized from Asset Manager while you are editing the same record.
5. Can I set a quantity other than 1 on a Request Line?
   ANS: Yes, the integration allows this. It will create as many devices in the DCIM request as are specified in the Asset Manager Request Line quantity field.

Reference Documents

Asset Manager, Connect-It and DCIM (Aperture VISTA) are each provided with their own comprehensive installation, user and reference guides. You should refer to these as required for further details and in-depth explanations of the concepts and procedures mentioned in this White Paper.

Support

HP Software support Web site

You can visit the HP Software Support web site at:

www.hp.com/go/hpsoftwaresupport

This Web site provides a list of contacts and information about products, services and support provided by HP Software.
HP Software online software support provides users with self-healing services to help them resolve their problems. It also provides a quick and efficient means to access interactive technical support tools to manage specific issues. As a technical support customer, you can use the support site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP Software support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an **HP Passport** user and sign in. Many also require a valid support contract. To find more information about support access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

To register for an **HP Passport ID**, go to:

http://h20229.www2.hp.com/passport-registration.html

Limited responsibility clause

Asset Manager is integrated with several third-party applications.
Examples: Database engines, Web servers, single sign-on software, load-balancing and clustering hardware and software solutions, reporting software such as Crystal Reports, etc.
Support for these applications is limited to their interface with Asset Manager. Support does not cover installation problems, setup and customization problems, or malfunctioning of the third-party application.
Some features covered or suggested in white papers may appear as standard features in future releases of the Asset Manager software. In such a case, if you have implemented such features yourself, based on a white paper, be aware that there is no guarantee that you will be able to migrate or upgrade your implementation of the feature in future releases of the Asset Manager software and you may need to re-implement the feature and migrate or recreate associated data.