Meridium APM SAP Interfaces

3.6.1.3.0

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About This Document

This file is provided so that you can easily print this section of the Meridium APM Help system.

You should, however, use the Help system instead of a printed document. This is because the Help system provides hyperlinks that will assist you in easily locating the related instructions that you need. Such links are not available in a print document format.

The Meridium APM Help system can be accessed within Meridium APM itself or via the Meridium APM Documentation Website (https://www.me-ridium.com/documentation/WebHelp/WebHelpMaster.htm).

> **Note**: If you do not have access to the Meridium APM Documentation Website, contact Meridium Global Support Services.

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About the SAP Interfaces

The SAP Interfaces module allows you to transfer data between your SAP system and Meridium APM. The SAP Interfaces module includes the following interfaces:

- **Functional Location Extraction Interface:** Allows you to transfer Functional Locations from SAP to Meridium APM.
- **Equipment Extraction Interface:** Allows you to transfer Equipment from SAP to Meridium APM.
- **Functional Location Characteristics Extraction Interface:** Allows you to transfer Functional Location characteristics from SAP to Meridium APM.
- **Equipment Characteristics Extraction Interface:** Allows you to transfer Equipment characteristics from SAP to Meridium APM.
- **Notification and Order Extraction Interface:** Allows you to transfer Notifications and Orders from SAP to Meridium APM.
- **Notification Creation Interface:** Allows you to transfer Recommendation records from Meridium APM to SAP in the form of Notifications.
- **Work Management Interface:** Allows you to manage scheduled work in one of two ways:
    - Create Task records in Meridium APM and transfer the data to SAP. This option allows you to create and update records in Meridium APM and transfer the data to SAP.
    - Create and manage data in SAP and transfer it to Meridium APM as Task records. This option allows you to create and update items in SAP and transfer the data to Meridium APM.

SAP Interfaces System Requirements

The *SAP Interfaces* feature allows you to integrate Meridium APM with your SAP system. Two approaches are available for implementing this functionality:

- **Non-PI-based:** Allows you to transfer data to and from SAP using the SAP backend system and an SAP database.
- **PI-based:** Allows you to transfer data to and from SAP through an SAP PI Server.

The *SAP Interfaces - Foundation* license is required to take advantage of SAP Interfaces functionality. The following additional licenses may also be required to take advantage of additional SAP Interfaces features:

- SAP Interfaces - Foundation
- SAP Interfaces - Process Integration
- SAP Interfaces - Technical Characteristics
- SAP Interfaces - Work Management

In addition, your system must contain the basic Meridium APM system architecture and the following additional components. If you want to use a PI-based SAP Interfaces implementation, note that your system will need to contain both the additional components for all SAP Interfaces implementations *and* the additional components for PI-based SAP Interfaces implementations.

> **Note:** On each Meridium APM Application Server to which you will transfer SAP data (i.e., each Meridium APM Application Server that is specified in the [/MIAPM/PARAMS table](#)), the regional settings must match the decimal notation and date format settings of the SAP users that will run reports to transfer data to and from that Application Server. For example, if the Application Server regional setting is configured to use a comma instead of a period to separate dollars from cents (e.g., *123,50* instead of *123.50*), if the SAP user with the user ID JSMITH will be running the Notification and Order Extraction Interface to transfer data to that Application Server, the decimal notation for JSMITH should be set to *1.234.567,89*. In SAP, decimal notation and date format settings are available on the **Defaults** tab of the user information screen, which is accessible from the transaction *SU01*.

After you have installed and configured the basic Meridium APM system architecture, you will need to perform some configuration steps specifically for SAP Interfaces.

Additional components required for all SAP Interfaces implementations:

- **SAP Backend System.** An SAP server machine with an ECC system set up. The following versions are supported:
  - SAP ECC 6.0 (Enhancement Packs [EhP] 1 through 7)

  The *PI-based* interfaces were tested using SAP ECC 6.0.

- **SAP Database:** A database that houses the SAP data model and data.
- **SAP Internet Transaction Server (ITS).** Version 6.20 or higher is required.

> **Note:** If you are using SAP ECC 5.0 or ECC 6.0 on the SAP Backend System, a separate ITS is not required, but the WebGUI *does* need to be activated in the ECC system.

- **Meridium APM Web Services:** Requires the following components.

Software Name and Version	Where you Can Obtain It	Required?	Behavior of Meridium APM Server and Add-ons Installer
Microsoft.net 3.5 SP1	Microsoft	Yes	If this is not found, the installer will close.
ReportViewer2008	Microsoft	Yes	If this is not found, the installer will install it automatically.
Micorosft WSE 3.0 Runtime	Microsoft or Meridium APM 3rd party DVD.	Yes	If this is not found, the installer will close.
Windows 2008R2 or newer	Microsoft	Yes	If this is not found, the installer will close.
Internet Explorer 8, 9, 10, or 11	Microsoft	Yes	If this is not found, the installer will close.
IIS 7.0 or later	Microsoft	Yes	If this is not found, an error message will appear, and the installer will close.
MSXML 3.0 MSXML3 Exception INF	Microsoft Internet Explorer. This is installed automatically with Internet Explorer 6.0 and later.	Yes	None
IIS 6 WMI Compatibility	Microsoft	Yes	If this is not found, the installer will close.

Software Name and Version	Where you Can Obtain It	Required?	Behavior of Meridium APM Server and Add-ons Installer
Visual C++ 8.0 CRT (x86) WinSXS MSM Visual C++ 8.0 MFC (x86) WinSXS MSM Visual C++ 10.0 CRT (x86) Visual C++ 9.0 CRT (x86) WinSXS MSM Visual C++ 10.0 ATL (x64) Visual C++ 9.0 ATL (x86) WinSXS MSM	Meridium APM	Yes	If this is not found, the installer will install it automatically.

If you are using a virtual machine (VM) to host your Meridium APM Web Server, we recommend that:

- You increase the physical server CPU and hard drive space requirements by 20% to ensure that the application will perform equivalently in a virtualized environment.
- You double the physical server memory requirements.
- Each VM have its own dedicated processor cores and memory allocation to ensure appropriate performance.

Meridium, Inc. supports Hyper-V and VMWare platforms.

These requirements may not be sufficient, depending upon how your system is configured. Parameters that affect the hardware requirements include the number of users, modules purchased, database size, and other factors that can vary from one customer to another. For help refining your specific system

requirements, consult a member of the Meridium Inc. Global Support Services or Professional Services department.

> **Note:** The installation and setup of the SAP machines is beyond the scope of the Meridium APM documentation. Information about installing and configuring the SAP Servers and database can be found in the documentation that is distributed by SAP with the SAP software. Throughout the Meridium APM documentation, we assume that these machines have been set up and properly configured according to the guidelines described in this topic.

The following image shows how these additional machines should be incorporated into the basic Meridium APM system architecture to support the SAP Interfaces.

Additional requirements for PI-based SAP Interfaces implementations:

- **SAP PI Server.** Contains the PI content that facilitates communication between Meridium APM and SAP for the purpose of extracting SAP items using the PI-based approach. The SAP PI Server must contain the SAP Web Application Server 7.0 (ABAP + Java) with PI 7.0 or higher. Meridium APM has been tested using SAP Web Application Server 7.0 SP9 (ABAP + Java) with PI 7.0 and PI 7.3.

> ₁**IMPORTANT:** For versions prior to SAP PI 7.3, a dual-stack installation (ABAP + Java) was required for all communications. Beginning with SAP PI 7.3, a single-stack Java installation is supported. Meridium APM, however, has been tested successfully only with a dual-stack installation (ABAP + Java) and may not work successfully with a single-stack Java installation.

- **SAP Enterprise Portal.** Contains the Meridium APM Query iView, which you can use to view Meridium APM Recommendation records in the SAP Portal.

> **Note:** The SAP Enterprise Portal is required only if you are using the Notification Creation Interface.

The SAP Enterprise Portal must meet *one* set of requirements below:

Option 1:

- SAP Web Application Server 6.40 SP22 or higher
- SAP Enterprise Portal 6.40 at the same service pack level as the Web Application Server
- SAP Portal .NET Runtime 2.5 (PDK for MS.NET 2.5)

Option 2:

- SAP Web Application Server (Java) 7.0 SP9 or higher with EP 7.0 at the same service pack level as the Web Application Server
- SAP Portal .NET Runtime 2.5 (PDK for MS.NET 2.5)

The following image shows how these additional machines should be incorporated into the basic Meridium APM system architecture to support the SAP Interfaces.

The following workflows do not support integration with SAP PI:

- Running the Work Management Interface (when managing work in the Meridium APM or in the SAP system).
- Configuring the Meridium APM system to extract characteristics.
- Creating an SAP Notification from a single RBI Recommendation.

> **Note:** If you are running an SAP PI Server in these workflows, you can still complete them, but the Meridium APM system will connect to the SAP system using the non-PI method.

Data Transfer Scenarios

You can transfer data between one SAP system and:

- A *single* Meridium APM data source that is connected to a *single* Meridium APM Application Server. This scenario is illustrated in the following image.

- *Multiple* Meridium APM data sources that are connected to the *same* Meridium APM Application Server. This scenario is illustrated in the following image.

- *Multiple* Meridium APM data sources that are connected to *different* Meridium APM Application Servers. This scenario is illustrated in the following image.

About the Equipment and Functional Location Extraction Interfaces

> **Note:** You can run the Equipment Extraction Interface and Functional Location Extraction Interface successfully only if the SAP Interfaces - Foundation license is active.

The Equipment Extraction Interface lets you extract Equipment items from your SAP system into your Meridium APM system. When you do so, for each SAP Equipment item that meets the criteria defined in the extraction report, a corresponding Equipment record is created in the Meridium APM database.

Likewise, the Functional Location Extraction Interface lets you extract Functional Locations from your SAP system into your Meridium APM system. When you do so, for each Functional Location that meets the criteria defined in the extraction report, a corresponding Functional Location record is created in the Meridium APM database.

Because the SAP system allows you to define a hierarchy, where Functional Locations are related to other Functional Locations and Equipment items are also related to Functional Locations, when you run either the Equipment Extraction Interface or the Functional Location Extraction Interface, the SAP hierarchy is maintained. In some cases, to maintain the hierarchy, placeholder records are created in the Meridium APM database to represent the SAP relationships.

For example, suppose that the SAP system contains the following Functional Locations and Equipment items, where the Functional Locations are shaded red, and the Equipment items are shaded green.

In this case, if you were run the Functional Location Extraction Interface, the following Functional Location records would be created automatically in the Meridium APM database:

- FL-101
- FL-101-A
- FL-101-A

Then, if you were run the Equipment Extraction Interface, the following Equipment record would be created automatically in the Meridium APM database:

- Equipment-1

This Equipment record would be linked automatically to the Function Location record for *FL-101-A-01*.

Suppose, however, that using the same SAP data structure example, you decide to run the Equipment Extraction Interface *before* running the Functional Location Extraction Interface. In this case, when running the Equipment Extraction Interface, the Equipment record *Equipment-1* would be created automatically to represent that SAP Equipment item. In addition, the following placeholder Functional Location record would also be created automatically to represent the SAP Functional Location that is directly associated with the Equipment:

- FL-101-A-01

The Equipment record would be linked automatically to the Functional Location record *FL-101-A-01*. Note that this placeholder record would contain a value only in the Functional Location key fields (defined by the current Functional Location Extraction Interface mappings). You would need to run the Functional Location Extraction Interface to populate the remaining fields in the placeholder Functional Location record.

About the Characteristics Extraction Interfaces

> **Note:** You can run the Characteristics Extraction Interfaces successfully only if the SAP Interfaces - Technical Characteristics license is active.

In SAP, you can assign specific characteristics to Equipment and Functional Locations. Each characteristic belongs to a classification, and each classification belongs to a class type, as illustrated in the following image.

For example, the class type *Equipment* might contain the classification *Storage Tanks*, which might contain the characteristics *Diameter* and *Wall Thickness*, as illustrated in the following image.

When you extract Equipment and Functional Locations from SAP into the Meridium APM system, only basic, common information is stored in the Equipment and Functional Location records that get created during the extraction process. If you want to extract the corresponding characteristics, you will need to run the Equipment Characteristics Interface and Functional Location Characteristics Interface. When you run these interfaces, Technical Characteristic records are created to store the characteristics that have been configured to be extracted, and these records are linked automatically to the appropriate Equipment and Functional Location records.

Characteristics Extraction Interfaces: Actions and Results

In SAP, you can assign specific characteristics to Equipment and Functional Locations. Each characteristic belongs to a classification, and each classification belongs to a class type. In Meridium APM, you can configure which characteristics you want to extract from SAP. When you do so, various actions that you perform in the Meridium APM system and the SAP system cause specific results. The tables in this topic describe these actions and their results.

Meridium APM Actions and Results

Action	Result	Notes
Select the**Extract From CMMS System** check box in a CMMS Characteristic record.	The next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the characteristic is extracted.	During the extraction process, a corresponding Technical Characteristic record is created.
Clear the **Extract From CMMS System** check box in a CMMS Characteristic record.	If a Technical Characteristic records has been created using this CMMS Characteristic record, it is not deleted automatically when you delete the CMMS Characteristic record. Instead, the next time that the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the corresponding Technical Characteristic record is deleted.	If you want to begin extracting the characteristic again, you will need to select the **Extract From CMMS System** check box.

Action	Result	Notes
Delete a CMMS Characteristic record.	If a Technical Characteristic record has been created using this CMMS Characteristic record, it is not deleted automatically when you delete the CMMS Characteristic record. Instead, the next time that the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the corresponding Technical Characteristic record is deleted. In addition, until the CMMS Characteristic record is recreated and flagged for extraction, the characteristic is no longer extracted beginning with the next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run.	If you want to begin extracting the characteristic again, you will need to: 1. Refresh the Meridium APM system to reflect the current SAP characteristics, which will cause the CMMS Characteristic record to be recreated. 2. Select the **Extract From CMMS System** check box in that CMMS Characteristic record.

Action	Result	Notes
Delete a CMMS Classification record.	All CMMS Characteristic records that were linked to the CMMS Classification record are deleted automatically. If a Technical Characteristic record has been created using this CMMS Classification record, it is not deleted automatically when you delete the CMMS Classification record. Instead, the next time that the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the corresponding Technical Characteristic records are deleted automatically. In addition, until the CMMS Classification record is recreated and flagged for extraction, characteristics belonging to that classification are no longer extracted beginning with the next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run.	If you want to begin extracting characteristics belonging to this classification again, you will need to: 1. Refresh the Meridium APM system to reflect the current SAP classifications, which will cause the CMMS Classification record to be recreated automatically. 2. Select the **Extract From CMMS System** check box in the CMMS Classification record. 3. Refresh the Meridium APM system to reflect the current SAP characteristics, which will cause the CMMS Characteristic records that were previously deleted to be recreated automatically. 4. Select the **Extract From CMMS System** check box in the appropriate CMMS Characteristic records.

Action	Result	Notes
Delete a CMMS Classification Type record.	All CMMS Classification and CMMS Characteristic records that were linked (directly or indirectly) to the CMMS Classification Type record are deleted automatically. If a Technical Characteristic record has been created using this CMMS Classification Type record, it is not deleted automatically when you delete the CMMS Classification Type record. Instead, the next time that the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the Technical Characteristic record is deleted automatically. In addition, until the CMMS Classification Type record is recreated and its CMMS Classification and CMMS Characteristic records are flagged for extraction, NO characteristics are extracted beginning with the next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run.	If you want to begin extracting characteristics again, you will need to: 1. Recreate the CMMS Classification Type record. 2. Refresh the Meridium APM system to reflect the current SAP classifications and characteristics, which will cause CMMS Classification records to be recreated. 3. Select the **Extract From CMMS System** check box in the desired CMMS Classification records. 4. Refresh the Meridium APM system to reflect the current SAP classifications and characteristics, which will cause CMMS Classification records to be recreated. 5. Select the **Extract From CMMS System** check box in that CMMS Characteristic record.

SAP Actions and Results

Action	Result
Specify a value for a characteristic that is configured to be extracted.	The next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, a Technical Characteristic record is created and linked to the corresponding Equipment or Functional Location record.
Remove a value for a characteristic that is configured to be extracted.	The next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the corresponding Technical Characteristic record is updated by removing the value from the Value field.
Assign a new classification to an Equipment or Functional Location, and specify values for the characteristics belonging to that class.	The next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, Technical Characteristic records representing the new characteristic values are created and linked to the corresponding Equipment or Functional Location record.
Unassign a classification from an Equipment or Functional Location.	The next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run or you refresh the Meridium APM system to reflect current SAP characteristics, the corresponding Technical Characteristic record is deleted.
Delete a characteristic from a classification.	The next time the Equipment Characteristics Extraction or Functional Location Characteristics Extraction Interface is run, the corresponding Technical Characteristic record is deleted.

About the Notification and Order Extraction Interface

> **Note:** You can run the Notification and Order Extraction Interface only if the SAP Interfaces - Foundation license is active.

You can extract Orders and Notifications from SAP to create Work History records and Work History Detail records in Meridium APM *if those Orders and Notifications are associated with a Technical Object*. To do so, you will need to run one of the reports that Meridium APM supplies for this purpose. The table in this topic indicates the report that you should run when you perform a certain action on Orders and Notifications in SAP.

When you extract an Order (with or without Notifications), the following Work History records are created:

- One Work History record to represent the Order Header, which appears on the **HeaderData** tab in SAP. This Work History record will be created for the Technical Objects that appears on the **HeaderData** tab in SAP. This means that the Work History record will be populated with values representing those Technical Objects, and it will also be linked to the Equipment or Functional Location records representing those objects. Only this Work History record will contain cost values and estimated and actual confirmed hours.

- One Work History record per object that appears in the Order's object list (i.e., on the **Objects** tab when you are viewing the Order). These Work History records will be created for the Technical Objects that are associated specifically with those items. This means that these Work History records will be populated with values representing those Technical Objects, and they will also be linked to the Equipment or Functional Location records representing those Technical Objects.

When you extract a Notification that is not associated with an Order, one Work History record is created to represent the Notification, and this Work History record will be linked to Equipment and Functional Location records representing the Notification reference objects. Specifically:

- If the Notification has only an *Equipment* reference object, the Work History record for that Notification will be linked to an Equipment record.

- If the Notification has only a *Functional Location* reference object, the Work History record for that Notification will be linked to a Functional Location record.

- If the Notification has Equipment *and* Functional Location reference objects, the Work History record for that Notification will be linked to an Equipment record and a Functional Location record.

If a Notification has items, one Work History Detail record will be created to represent each item.

Note: You can extract Orders and Notifications manually, or you can schedule them to be extracted automatically on a recurring basis. The following tables explain the reports that you will need to run to extract them *manually*.

Orders Without Notifications

After you:	...Run this report:	...To see this result:
Create an Order that is not associated with a Notification.	/MIAPM/WH_WORK_ORDER	A Work History record is created.
Update the Order referenced above.	/MIAPM/WH_WORK_ORDER	The corresponding Work History record is updated.

Orders With Notifications

Notifications without items

After you:	...Run this report:	...To see this result:
Create an Order that is associated with a Notification without items.	/MIAPM/WH_NOTIF_WITH_WO	A Work History record is created to capture the data in the Order and the Notification.
Update only the Order.	/MIAPM/WH_NOTIF_WITH_WO	The corresponding Work History record is updated.
Update only the Notification.	/MIAPM/WH_NOTIF_WITH_WO	The corresponding Work History and Work History Detail records are updated.
Update both the Order and Notification.	/MIAPM/WH_NOTIF_WITH_WO	The corresponding Work History and Work History Detail records are updated.

Notifications with items

After you:	...Run this report:	...To see this result:
Create an Order that is associated with a Notification with items.	/MIAPM/WH_ NOTIF_WITH_ WO -AND- /MIAPM/WORK_ HISTORY_ DETAILS	A Work History record to capture the data in the Order and the Notification. -AND- A Work History Detail record is created to capture additional data in the Notification.
Update only the Order.	/MIAPM/WH_ NOTIF_WITH_ WO	The corresponding Work History record is updated.
Update only the Notification.	/MIAPM/WH_ NOTIF_WITH_ WO -AND- /MIAPM/WORK_ HISTORY_ DETAILS	The corresponding Work History and Work History Detail records are updated.
Update both the Order and Notification.	/MIAPM/WH_ NOTIF_WITH_ WO -AND- /MIAPM/WORK_ HISTORY_ DETAILS	The corresponding Work History and Work History Detail records are updated.

Notifications Without Orders

Notifications without items

After you:	...Run this report:	...To see this result:
Create a Notification without items, but do not associate it with an Order.	/MIAPM/WH_ NOTIFICATION	A Work History record is created to capture the data in the Notification.
Update the Notification referenced above.	/MIAPM/WH_ NOTIFICATION	The corresponding Work History record is updated.

Notifications with items

After you:	...Run this report:	...To see this result:
Create a Notification with items, but do not associate it with an Order.	/MIAPM/WH_ NOTIFICATION -AND- /MIAPM/WORK_ HISTORY_ DETAILS	A Work History record and a Work History Detail record are created to capture the data in the Notification.
Update the Notification referenced above.	/MIAPM/WH_ NOTIFICATION -AND- /MIAPM/WORK_ HISTORY_ DETAILS	The corresponding Work History and Work History Detail records are updated.

Order Without Notification: No Items on Object List

Suppose the following SAP Order exists, where the red outlines indicate that:

- The Order number is *4000141*.
- There is no associated Notification.
- The reference Technical Object is Equipment *V100*.

In addition, you can see from the **Objects** tab that there are no items on the object list:

If you were to extract this Order, the following Work History record would be created, where the red outlines indicate that:

- The referenced technical object is *V100*.
- The Work History record is linked to the Equipment record *V100*.

> **Note:** The Equipment record V100 is created during the Order extraction process as a placeholder record. You would need to run the Equipment Extraction Interface to populate the Equipment fields.

Order With Notification: Items on Object List

Suppose the following SAP Order exists, where the red outlines indicate that:

- The Order number is *4000483*.
- The associated Notification number is *10001363*.
- The reference Technical Objects are Functional Location *ABC-PQR/12-34-56/8* and Equipment *TURBINE*.

In addition, you can see from the **Objects** tab that there are items on the object list:

If you were to extract this Order, two Work History records would be created:

- One for the Order and Notification combination.
- One for the object list item *EQABC123*.

Work History Record for the Order and Notification Combination

The following image illustrates the Work History record for the Order and Notification combination, where the associated Technical Object is *TURBINE*. You can see that the Work History record is also linked to the Equipment record *TURBINE*.

> **Note:** The Equipment record TURBINE is created during the Order extraction process as a placeholder record. You would need to run the Equipment Extraction Interface to populate the Equipment fields.

If the Notification contained items, a Work History Detail record would also be created to capture additional information about that Notification.

Work History Record for the Object List Item *EQABC123*

The following image illustrates the Work History record for the object list item *EQABC123*. You can see that the Work History record is also linked to the Equipment record *EQABC123*.

> **Note:** The Equipment record *EQABC123* and the associated Functional Location record *ABC-XYZ-DE-VW-123456*are created during the Order extraction process as placeholder records. You would need to run the Equipment Extraction Interface and the Functional Location Extraction Interface to populate the Equipment record and Functional Location record fields.

Notification Without Order: Without Notification Items

Suppose the following SAP Notification exists, where the red outlines indicate that:

- The Notification number is *10001364*.
- The reference Technical Object is Functional Location *A1*.
- There are no items.

Display PM Notification: Maintenance Request

| Notification | 10001364 | M1 | Notification_No Items |
| Status | OSNO | | LOW |

| Notification | Reference object | Malfunction, breakdown | Location data | Scheduling overview |

Reference object

Functional loc.	A1		Location A1 for testing
Equipment		
Assembly		

Subject

| Coding | | | |
| Description | Notification_No Items | |

Notification - No Items

Responsibilities

Planner group	010 / 1061	Planner Group 1
Main WorkCtr	PRODUCTI / 1000	Production line
Department resp		
Person respons.		
Reported by		Notif.date	07/27/2012	20:51:40

Start/End Dates

| Required Start | 07/27/2012 | 20:51:40 | Priority | 3-Medium |
| Required End | 07/30/2012 | 00:00:00 | Breakdown |

Item

Object part		
Damage		
Text		
Cause code		
Cause text		
		Entry	0 frm	0

If you were to extract this Notification, the following Work History record would be created, where the red outlines indicate that:

- The Work History record is associated with the Notification's Technical Object *A1*.
- The Work History record is linked to the Functional Location record *A1*.

> **Note:** The Functional Location record A1 is created during the Notification extraction process as a placeholder record. You would need to run the Functional Location Extraction Interface to populate the Functional Location fields.

Notification Without Order: With Notification Items

Suppose the following SAP Notification exists, where the red outlines indicate that:

- The Notification number is *10001365*.
- The reference Technical Object is Functional Location *F1*.
- There are two items.

Display PM Notification: Maintenance Request

Notification	10001365 M1 Notification_With Items
Status	OSNO LOW

Notification | Reference object | Malfunction, breakdown | Location data | Scheduling overview

Reference object

Functional loc.	F1	Functional Location F1
Equipment		
Assembly		

Subject

Coding	
Description	Notification_With Items

Notification_With Items

Responsibilities

Planner group	KG / 3002	Kroger
Main WorkCtr	SERVICES / 1061	services
Department resp		
Person respons.		
Reported by		Notif.date 07/27/2012 20:54:57

Start/End Dates

Required Start	07/27/2012 20:54:57	Priority
Required End	07/28/2012 00:00:00	☐ Breakdown

Item

Object part	PM1 2	Object part 2
Damage		
Text	Text test	
Cause code	PM1 1	Cause 1
Cause text		

Entry 1 frm 2

If you were to extract this Notification, the following records would be created:

- One Work History record.
- Two Work History Detail records: one to capture additional information about the first notification item, and another to capture additional information about the second notification item.

The following images illustrates the Work History record, where the red outlines indicate that:

- The Work History record is associated with the Notification's Technical Object *F1*.
- The Work History record is linked to the two Work History Detail records.
- The Work History record is linked to the Functional Location record *F1*.

> **Note:** The Functional Location record *F1* is created during the Notification extraction process as a placeholder record. You would need to run the Functional Location Extraction Interface to populate the Functional Location fields.

About the Notification Creation Interface

> **Note:** You can create an SAP Notification from a Meridium APM Recommendation record successfully only if the SAP Interfaces - Foundation license is active.

You can create SAP Notifications from Meridium APM Recommendation records using either of the following options:

- Non-PI-based approach
- PI-based approach

The process that you will use in the Meridium APM Framework application is the same for each approach. The technology that is responsible for creating the SAP Notification, however, differs.

About the Work Management Interface

> **Note:** You can run the Work Management Interface only if the SAP Interfaces - Work Management license is active.

The Work Management Interface allows you manage scheduled work in one of two places:

- **In Meridium APM:** This option allows you to <u>create Task records in Meridium APM and transfer the data to SAP</u>. Doing so allows you to update records in Meridium APM and transfer the updates to SAP.

- **In SAP:** This option allows you to <u>create and manage data in SAP and transfer it to Meridium APM as Task records</u>. Doing so allows you to make updates in SAP and transfer the updates to Meridium APM.

Workflow for Managing Scheduled Work in Meridium APM

If you want to manage scheduled work in Meridium APM, you will need to create Task records in Meridium APM, transfer them to SAP as Orders, and view the data in SAP. To do so, you will need to complete the following steps:

1. In the Meridium APM Framework, create an Inspection Task or Calibration Task record. In the Task record, specify a valid SAP Task List in the Task List field, and type the desired call horizon in the Call Horizon field.

   > **Note:** To create the Task record, make sure to use the Task Builder and not the Record Manager. Otherwise, the Task record will not be linked to the Equipment or Functional Location record, and the Work Management Interface will not work as expected.

2. In the Meridium APM Schedule Manager, run the Meridium APM scheduled item that is provided for the purpose of creating SAP Orders. This step will create Orders in SAP automatically based on the current date and the Next Date and Call Horizon in the Task record.

   > **Note:** Typically, the scheduled item will be configured to run on a recurring basis (e.g., nightly). In this case, each time the item is run, an Order will be created automatically if the Task does not already contain a value in the Work Order Number field and the current date, Next Date, and Call Horizon in a Task record meet the Order creation criteria.

3. In the Meridium APM Framework, create an Inspection record or Calibration Event record, and link it to the Inspection Task or Calibration Task record that you created in step 2. In the Inspection or Calibration Event record, type a value in the **Actual Work Time** text box, and select the **Inspection Task Complete** or **Calibration Close** check box. This step will create a Confirmation record in Meridium APM and a Confirmation in SAP. The SAP Confirmation will be associated with the Operation that is associated with the Order that was generated automatically as a result of performing step 2.

   > **Note:** To create the Inspection record Calibration Event record, make sure to use the process defined by the module and not the Record Manager. Otherwise, the record will not be linked to the Equipment or Functional Location record, and the Work Management Interface will not work as expected.

4. In the Meridium APM Framework, if needed, update the Confirmation record that was created and linked to the Task record. This step will update the SAP Confirmation automatically.

You can see steps 1 through 3 outlined in the following image. Note that the numbered squares represent actions that you must perform manually. Hexagons represent actions that are performed automatically.

How Does Meridium APM Use the Call Horizon?

When the scheduled item that Meridium APM delivers for the purpose of creating SAP Orders is executed, the Meridium APM system performs a calculation on the Next Date and Call Horizon values in all Task records. The calculated result is passed into the query Get Tasks for Work Order Generation. If the result meets the criteria defined for the query column *([Task].[Next Date] - [Task].[Call Horizon])*, the Task record meets the remaining criteria defined in the query, and the Task does not already contain a value in the Work Order Number field, an Order will be created from the Task record.

Using the baseline query, an SAP Order will be created if the Task record meets all query criteria (e.g., the Maintenance Plan field does not contain a value) and the calculated result meets the following criteria:

Task Next Date - Task Call Horizon = A date between the Last Executed Date and the Next Execution Date of the scheduled item

For example, suppose the scheduled item contains the following values.

Last Executed Date	July 1, 2008 1:00:00 A.M.
Next Execution Date	July 2, 2008 1:00:00 A.M.

Based on these values, an SAP Maintenance Order will be created automatically if the Next Date of the Task record minus its Call Horizon is *between* July 1, 12:00:00 A.M. and July 2, 12:00:00 A.M.

Suppose a Task record contains the following values.

Next Date	July 11, 2008 3:00:00 A.M.
Call Horizon	10

Using these Task record values, if you subtract the Call Horizon, 10 days, from the Next Date, July 11, 2008 3:00:00 A.M., the result is *July 1, 2008 3:00:00 A.M.*

Because July 1, 2008 3:00:000 A.M. falls between the Last Executed Date of July 1, 2008 1:00:00 A.M. and July 2, 2008 1:00:00 A.M., the Task record *will* be used to generate an Order (assuming that the Task record meets the remaining query criteria).

In other words:

July 11, 2008 3:00:00 A.M. (Task Next Date) **- 10** (Call Horizon) **= July 1, 2008 3:00:00 A.M.** (A date between the Last Executed Date and the Next Execution Date of the scheduled item)

> **Note:** If the scheduled item is being executed for the first time, Meridium APM assumes a Last Executed Date of 1/1/1900. Also, if the Call Horizon field does not contain a value, the value is treated as zero (0).

Workflow for Managing Scheduled Work in SAP

If you currently use SAP to schedule Orders and want to continue doing so, you can transfer data from SAP to Meridium APM, view the data in Meridium APM, and make changes to Meridium APM records that will be transferred back to the master SAP Orders. To do so, you will need to complete the following steps:

1. In SAP, in an Operation that belongs to a Task List on a Maintenance Plan, enter a value or combination of values that has been configured to trigger the creation of a Meridium APM Task record.

2. In SAP, run the /MIAPM/WORK_MANAGEMENT_INF report. This step will create or update Task records automatically in Meridium APM. Additionally, if the Task records are created from Maintenance Plans that are associated with Equipment or Functional Locations, corresponding Equipment and Functional Location records will be created automatically and linked to the new Task records. These Equipment and Functional Location records will contain values only in key fields as defined in the mappings (e.g., Equipment ID, Functional Location Internal ID, CMMS System). You will need to run the Equipment Extraction and Functional Location Extraction Interfaces to populate the remaining fields.

3. In the Meridium APM Framework, create an Inspection record or Calibration Event record, and link it to the Task record that was created automatically as a result of performing step 2. Type a value in the **Actual Work Time** text box in the Event record, and select the **Inspection Task Complete** or **Calibration Close** check box, as appropriate. This step will create a Confirmation record in Meridium APM and a Confirmation in SAP. The SAP Confirmation will be associated with the Operation that is associated with the Order that belongs to the Maintenance Plan that was used to create the Task record.

   > **Note:** To create the Inspection record Calibration Event record, make sure to use the process defined by the module and not the Record Manager. Otherwise, the record will not be linked to the Equipment or Functional Location record, and the Work Management Interface will not work as expected.

4. In the Meridium APM Framework, if needed, update the Confirmation record that was created and linked to the Task record. This step will update the SAP Confirmation automatically.

> **Note:** Meridium APM supports integration with Single Cycle Maintenance Plans only.

You can see steps 1 through 3 outlined in the following image. Note that the numbered squares represent actions that you must perform manually. Hexagons represent actions that are performed automatically.

SAP

Meridium APM

1

Enter values in an Operation.

2

Run the /MIAPM/ WORK_MANAGEME NT_INF report.

Inspection Task record or Calibration Task record created or updated.

SAP Confirmation created.

3 Create Inspection record or Calibration Event record. Link it to the Task record created from step **2**. Enter the Actual Work Time, and select the **<Event> Closed** check box.

Confirmation record created.

How are Intervals and UOMs Derived in Task Records?

If you create or update Task records from SAP data, the interval and unit of measure values in the Task record will be derived based on the cycle information and unit of measure in the SAP Maintenance Plan and the configuration of the /MIAPM/TASK_CNF table.

For example, suppose the /MIAPM/TASK_CNF table indicates that Inspection Task records that are created from SAP should contain a unit of measure of MON. If a Maintenance Plan has a cycle of 60 Days, the Inspection Task record will contain an interval of 2 months. The following table explains the equations that will be used to convert SAP values and units of measures to Meridium APM values and units of measure.

Maintenance Plan UOM	Task UOM	Conversion Equation	Example
HR	DAYS	Task value = SAP value / 24	SAP value = 12 H Task value = 12 / 24 Task value = 0.5 DAYS
HR	MON	Task value = (SAP value / 24) / 30	SAP value = 360 H Task value = (360 / 24) / 30 Task value = 0.5 MON
D or DAY	DAYS	None	SAP value = 24 D Task value = 24 DAYS
D or DAY	MON	Task value = SAP value / 30	SAP value = 60 D Task value = 60 / 30 Task value = 2 MON
D or DAY	YEARS	Task value = SAP value / 365	SAP value = 730 D Task value = 730 / 365 Task value = 2 YEARS
MON	DAYS	Task value = SAP value X 30	SAP value = 2 MON Task value = 2 X 30 Task value = 60 DAYS

Maintenance Plan UOM	Task UOM	Conversion Equation	Example
MON	MON	None	SAP value = 2 MON Task value = 2 MON
MON	YEARS	Task value = SAP value / 12	SAP value = 24 MON Task value = 24 / 12 Task value = 2 YEARS
YR	DAYS	Task value = SAP value X 365	SAP value = 2 YR Task value = 2 X 365 Task value = 730 DAYS
YR	MON	Task value = SAP value X 12.1667	SAP value = 2 YR Task value = 2 X 12.1667 Task value = 24.3334 MON
YR	YEARS	None	SAP value = 2 YR Task value = 2 YEARS

Note that if you are updating a Task record that was created from an SAP Maintenance Plan whose schedule has changed since the Task was created, when the Task record is updated, Meridium APM will reset all interval values in the Task record to the new interval value in the Maintenance Plan.

About Discontinued Task Records

If a Task record was created from SAP data and you later modify the SAP data in a way that causes that Task record to become obsolete, you can run the /MIAPM/WORK_ MANAGEMENT_INF report in SAP to resolve the differences.

When you run the report, Meridium APM will search the database for Task records with a Maintenance Plan, Maintenance Item, Task List, and Operation combination that is no longer valid. If it finds one:

- The Task ID of the invalid Task record will be set to **DISCONTINUED**.

- The value in the Reason field will be pre-pended with the following:

  <Date> - <User ID> - Task was discontinued due to changes in SAP. Previous Task ID was '<previous Task ID.'

  Where **<Date>** is the date on which the Task ID was set to **DISCONTINUED** and **<User ID>** is the user name that is specified in the /MIAPM/PARAMS database table in SAP.

For example, suppose a Calibration Task record was created from an Operation with the control key ZMI2. If you later change the control key and run the report, the Calibration Task record will be discontinued.

Note that when a Task ID in a Task record has already been set to **DISCONTINUED**, if you run the /MIAPM/WORK_MANAGEMENT_INF report again and the Task data is still not valid, the Task record will be skipped. In other words, its Reason field will not contain more than one instance of the text **DISCONTINUED**.

> **Note:** If you modify the SAP data so that it corresponds to the existing Task record again, running the report will cause Meridium APM to update the discontinued Task record instead of creating a new Task record. The value in the Reason field in the updated Task record will be pre-pended with the following: *<Date> - <User ID> - Changes in SAP have caused this Task to become active again*, where <Date> is the date on which the Task record was updated and <User ID> is the user name that is specified in the /MIAPM/PARAMS database table in SAP.

SAP Interfaces Data Model

Like all Meridium APM modules, the Meridium APM SAP Interfaces feature consists of entity families, relationship families, and business rules. When attempting to understand and make use of the SAP Interfaces functionality, it can be helpful to visualize the SAP Interfaces data model.

Because you should already be familiar with the concept of records and viewing records in the Meridium APM Record Manager, as you attempt to get your bearings in the SAP Interfaces feature, it may be useful to remember that the SAP Interfaces feature simply lets you create, view, and manage records.

The following image illustrates how families used by the Meridium APM SAP Interfaces module are related to one another.

Each interface is responsible for creating or updating one or more records that are displayed in the image. For example, when you run the Equipment Extraction Interface, *Equipment* records are created or updated.

Note that although the data model image does not show the relationship, Equipment and Functional Location records are also linked to Site Reference records.

How are Equipment and Functional Location Records Linked to Site Reference Records?

Some companies that use the SAP software have multiple sites, or locations, around the world. Each site might use its own SAP system.

You can define your SAP systems, define your sites, and associate each SAP system with the site that uses it. When you extract Equipment and Functional Locations from SAP, the CMMS System field in the Equipment and Functional Location records in Meridium APM will be populated automatically with the name of the source SAP system, using the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <Client> is the Client number.

Then, if an SAP System record contains the same value in the Name field, that Equipment or Functional Location record will be linked automatically to the Site Reference record to which that SAP System record is linked.

For example, suppose your database contains the following Site Reference records and SAP System records.

From these records, you can see that *Site A* uses System 1 and *Site B* uses System 2.

Suppose that the following Equipment exists in System 1 and System 2.

System 1	System 2
Equipment 100	Equipment 200
Equipment 101	Equipment 201

In this case, if you run the Equipment Extraction Interface on System 1, the following Equipment records will be created in Meridium APM:

- Equipment 100
- Equipment 101

The CMMS System field in each of these records will be populated automatically with the value *System 1*. Because a Site Reference record exists with the same value, *System 1*, in the Name field, the Equipment records will be linked to that Site Reference record, as shown in the following image.

To facilitate this workflow, the following queries are provided in the Catalog folder \\Public\Meridium\Modules\SAP Integration Interfaces\Queries:

- Get Site Reference for Equipment
- Get Site Reference for Functional Location

When you extract Equipment and Functional Locations from SAP, the values in the Equipment ID field and the CMMS System field are used to ensure that duplicate Equipment records do not get created in the Meridium APM system. For instance, continuing with the previous example, assume that you have two SAP systems: *System 1* and *System 2*. If each one had an Equipment called *Equipment 103* and you extracted Equipment 103 from System 1, an Equipment record would be created with the following values:

- **Equipment ID:** Equipment 103
- **CMMS System:** System 1

If you extracted Equipment 103 from System 1 again, an additional Equipment record would not get created. Instead, the existing Equipment record would be updated with any changes in SAP.

Likewise, if you extracted Equipment 103 from System 2, a separate Equipment record would be created with the following values:

- **Equipment ID:** Equipment 103
- **CMMS System:** System 2

First-Time Deployment Checklist - PI Customers

If you are using an SAP PI Server, complete the steps in the following table to deploy and configure the SAP Interfaces for the first time. The steps in this section of the documentation provide all the information that you need to deploy and configure the SAP Interfaces on top of the basic Meridium APM system architecture.

Steps are marked as *Required* in the **Required/Optional** column if you must perform that step to take advantage of the SAP Interfaces functionality.

The person responsible for completing each task may vary within your organization. We recommend that the steps be performed in relatively the same order in which they are listed in the table.

Step	Task	Associated Interface	Required/Optional
1	Install the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	Install the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
3	Configure the System Landscape Directory (SLD) via the SAP Exchange Infrastructure.	All interfaces *except* the Work Management Interface	Required
4	Import the configuration object.	All extraction interfaces	Required
5	Modify the baseline communication channels.	All extraction interfaces	Required
6	Activate the scenarios that were created by the configuration object.	All extraction interfaces	Required

Ste-p	Task	Associated Interface	Required/Op-tional
7	For each *additional* Meridium APM data source to and from which you want to transfer data: 1. Create a new receiver determination for each baseline configuration scenario. 2. Create a new interface determination for each baseline configuration scenario. 3. Create a new receiver agreement for each baseline configuration scenario. 4. Activate the changes.	All extraction interfaces	Required

Step	Task	Associated Interface	Required/Optional
8	Deploy and configure the Notification Creation Interface by completing the following steps: 1. Import the notification design object. 2. Import the notification configuration object. 3. Activate the RFCReceiverToECC object. 4. Activate the SOAP Communication Channels. **Note:** You must complete this step *only* if you are using SAP PI 7.3. 5. Import the .EPA file. 6. Import the .PAR file. 7. Configure the APMConfiguration Object. 8. Configure the R3Systems object. 9. Grant the Everyone group permissions to the PM Notification iView. 10. Determine which users can see the **APM PBNW Certification** tab. 11. Map users to the SAP_R3 System. 12. Configure the Query iView.	Notification Creation Interface	Required
9	Create an RFC Destination on your SAP System.	Work Management Interface	Required
10	Create an entry in the /MIAPM/PARAMS table for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
11	Populate the /MIAPM/PI_PARAMS table.	All extraction interfaces	Required
12	Using the /MIAPM/TASK_CNF table, identify the Operation values that will be used to trigger the creation of Inspection Task and Calibration Task records.	Work Management Interface	Required
13	Configure field mappings.	All interfaces	Required only if you want to modify the baseline field mappings.
14	Modify the Windows Services file on the Meridium APM Application Server.	Work Management Interface	Required
15	Modify the CSCS.exe.config file on the Meridium APM Application Server to define your SAP systems.	Work Management Interface	Required
16	Make sure that the Meridium Core SAP Connector service is running on the Meridium APM Application Server.	Work Management Interface	Required
17	Define the connection information for the SAP PI Server in the file Meridium.SAP.CertifiedInterface.Config.xml on the Meridium APM Application Server.	Notification Creation Interface	Required
18	Review the SAP Interfaces data model to determine which relationship definitions you will need to modify to include your custom equipment and location families.	All interfaces	Required only if you store equipment and location information in families other than the baseline Equipment and Functional Location families
19	Assign the desired Security Users to the SAP Interfaces Security Groups via the Configuration Manager application.	All Interfaces	Required

Ste-p	Task	Associated Interface	Required/Op-tional
20	Configure the Meridium APM system to create Notifications from Recom-mendation records belonging to cus-tomer-defined Recommendation families. You can do so via the Configuration Man-ager application.	Notification Creation Inter-face	Required only if you want to gen-erate SAP Noti-fications from Recommendation records that belong to *cus-tomer-defined* subfamilies of the root Recom-mendation family.
21	Configure the Meridium APM system to use the PI approach for creating Noti-fications. You can do so via the Con-figuration Manager application.	Notification Creation Inter-face	Required
22	Configure the Meridium APM system to transfer data between SAP items and Task records. You can do so via the Con-figuration Manager.	Work Man-agement Inter-face	Required
23	Configure the Meridium APM system to create Confirmations from Calibration Event records via the Configuration Man-ager application.	Work Man-agement Inter-face	Required
24	Configure the Meridium APM system to create Confirmations from Inspection records. You can do so via the Con-figuration Manager.	Work Man-agement Inter-face	Required

Ste-p	Task	Associated Interface	Required/Op-tional
25	Create SAP System records to identify your SAP systems. You can do so via the Meridium APM Framework application.	Work Man-agement Inter-face -and- Functional Location Char-acteristics Extraction Interface -and- Equipment Char-acteristics Extraction Interface -and- Notification Creation Inter-face	Required

Ste-p	Task	Associated Interface	Required/Op-tional
26	Test the SAP connection information that you specified in your SAP System records. You can do so via the Meridium APM Framework application.	Work Man-agement Inter-face -and- Functional Location Char-acteristics Extraction Interface -and- Equipment Char-acteristics Extraction Interface -and- Notification Creation Inter-face	Optional
27	Create Site Reference records, and link them to your SAP System records. You can do so via the Meridium APM Frame-work application.	Work Man-agement Inter-face -and- Functional Location Extraction Interface -and- Equipment Extraction Interface -and- Notification Creation Inter-face	Optional

Step	Task	Associated Interface	Required/Optional
28	Configure the Meridium APM system to extract Equipment and Functional Location characteristics from SAP. You can do so via the Meridium APM Framework application.	Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface	Required
29	Configure the Get Tasks for Work Order Generation query via the Meridium APM Framework application.	Work Management Interface	Optional
30	Create a scheduled item in the Schedule Manager application for the purpose of creating Work Orders in SAP.	Work Management Interface	Required only if you are managing scheduled work in the Meridium APM system.

First-Time Deployment Checklist - Non-PI Customers

If you are not using an SAP PI Server, complete the steps in the following table to deploy and configure the SAP Interfaces for the first time. The steps in this section of the documentation provide all the information that you need to deploy and configure the SAP Interfaces on top of the basic Meridium APM system architecture.

Steps are marked as *Required* in the **Required/Optional** column if you must perform that step to take advantage of the SAP Interfaces functionality.

The person responsible for completing each task may vary within your organization. We recommend that the steps be performed in relatively the same order in which they are listed in the table.

Step	Task	Associated Interface	Required/Optional
1	Install the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	Install the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
3	Modify the Windows Services file on the Meridium APM Application Server.	Work Management and Notification Management Interfaces	Required
4	Create an RFC Destination on your SAP System.	Work Management Interface	Required
5	Modify the CSCS.exe.config file on the Meridium APM Application Server to define your SAP systems.	Work Management Interface	Required
6	Make sure that the Meridium Core SAP Connector service is running on the Meridium APM Application Server.	Work Management Interface	Required
7	Create an entry in the /MIAPM/PARAMS table for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
8	Using the /MIAPM/TASK_CNF table, identify the Operation values that will be used to trigger the creation of Inspection Task and Calibration Task records.	Work Management Interface	Required
9	Configure field mappings.	All interfaces	Required only if you want to modify the baseline field mappings.
10	Review the SAP Interfaces data model to determine which relationship definitions you will need to modify to include your custom equipment and location families.	All interfaces	Required only if you store equipment and location information in families other than the baseline Equipment and Functional Location families
11	Assign the desired Security Users to the SAP Interfaces Security Groups via the Configuration Manager application.	All Interfaces	Required
12	Configure the Meridium APM system to create Notifications from Recommendation records belonging to customer-defined Recommendation families. You can do so via the Configuration Manager application.	Notification Creation Interface	Required only if you want to generate SAP Notifications from Recommendation records that belong to *customer-defined* sub-families of the root Recommendation family.
13	Configure the Meridium APM system to transfer data between SAP items and Task records. You can do so via the Configuration Manager application.	Work Management Interface	Required

Step	Task	Associated Interface	Required/Optional
14	[Configure the Meridium APM system to create Confirmations from Calibration Event records](). You can do so via the Configuration Manager application.	Work Management Interface	Required
15	[Configure the Meridium APM system to create Confirmations from Inspection Event records](). You can do so via the Configuration Manager application.	Work Management Interface	Required
16	[Create SAP System records]() to identify your SAP systems. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
17	Test the SAP connection information that you specified in your SAP System records. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Optional
18	Create Site Reference records, and link them to your SAP System records. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Extraction Interface -and- Equipment Extraction Interface -and- Notification Creation Interface	Optional

Step	Task	Associated Interface	Required/Optional
19	Configure the Meridium APM system to extract Equipment and Functional Location characteristics from SAP. You can do so via the Meridium APM Framework application.	Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface	Required
20	Configure the Get Tasks for Work Order Generation query. You can do so via the Meridium APM Framework application.	Work Management Interface	Optional
21	Create a scheduled item in the Schedule Manager application for the purpose of creating Work Orders in SAP.	Work Management Interface	Required only if you are managing scheduled work in the Meridium APM system.

Upgrade or Update PI Customers to 3.6.1.3.0

The following tables list the steps that are required to update or upgrade the SAP Interfaces if you are using an SAP PI Server. These steps assume that you have completed the steps for upgrading the components in the basic Meridium APM system architecture.

Update from any version V3.6.1.0.0 through V3.6.1.2.0

This module will be updated to 3.6.1.3.0 automatically when you update the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.6.0.0.0 through V3.6.0.12.6

This module will be updated to 3.6.1.3.0 automatically when you update the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.5.1.0.0 through V3.5.1.12.0

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	If you configured custom field mappings in V3.5.1, export your custom field mappings.	All interfaces	Required
3	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
4	If you configured custom field mappings in V3.5.1, reset the baseline field mappings.	All interfaces	Required
5	Delete the previous version of the Software Component Version via the SAP Exchange Infrastructure.	All interfaces *except* the Work Management Interface	Required

Ste-p	Task	Associated Interface	Required/Op-tional
6	If you configured custom field mappings in V3.5.1, import your custom field mappings.	All interfaces	Required
7	Run the report /MIAPM/350P3_UPGRADE_ EXCEPTION.	All interfaces	Required
8	Configure the System Landscape Directory (SLD) on the SAP PI Server, which will create a new Software Component Version.	All interfaces *except* the Work Management Interface	Optional
9	Import the configuration object.	All extraction interfaces	Required
10	Modify the baseline communication channels.	All extraction interfaces	Required
11	Activate the scenarios that were created by the configuration object.	All extraction interfaces	Required
12	For each *additional* Meridium APM data source to and from which you want to transfer data: 1. Create a new receiver determination for each baseline configuration scenario. 2. Create a new interface determination for each baseline configuration scenario. 3. Create a new receiver agreement for each baseline configuration scenario. 4. Activate the changes.	All extraction interfaces	Required

Ste-p	Task	Associated Interface	Required/Op-tional
13	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Man-agement Inter-face -and- Notification and Order Extraction Interface	Required
14	Restart the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Man-agement Inter-face -and- Notification and Order Extraction Interface	Required
15	Define the connection information for the SAP PI Server in the file Meridi-um.SAP.CertifiedInterface.Config.xml on the Meridium APM Application Server.	Notification Creation Inter-face	Required

Ste-p	Task	Associated Interface	Required/Op-tional
16	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Man-agement Inter-face -and- Functional Location Char-acteristics Extraction Interface -and- Equipment Char-acteristics Extraction Interface	Required
17	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	All interfaces *except* for the Notification Creation Inter-face	Optional
18	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Frame-work application.	Work Man-agement Inter-face	Optional

Upgrade from any version V3.5.0 SP1 LP through V3.5.0.1.9.0

Ste-p	Task	Associated Interface	Required/Op-tional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required

Ste-p	Task	Associated Interface	Required/Op-tional
2	If you configured custom field mappings in V3.5.0, export your custom field mappings.	All interfaces	Required
3	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
4	If you configured custom field mappings in V3.5.0, reset the baseline field mappings.	All interfaces	Required
5	Delete the previous version of the Software Component Version via the SAP Exchange Infrastructure.	All interfaces *except* the Work Management Interface	Required
6	If you configured custom field mappings in V3.5.0, import your custom field mappings.	All interfaces	Required
7	Run the report /MIAPM/350P3_UPGRADE_ EXCEPTION.	All interfaces	Required
8	Configure the System Landscape Directory (SLD) on the SAP PI Server, which will create a new Software Component Version.	All interfaces *except* the Work Management Interface	Required
9	Import the configuration object.	All extraction interfaces	Required
10	Modify the baseline communication channels.	All extraction interfaces	Required
11	Activate the scenarios that were created by the configuration object.	All extraction interfaces	Required

Ste-p	Task	Associated Interface	Required/Op-tional
12	For each *additional* Meridium APM data source to and from which you want to transfer data: 1. Create a new receiver determination for each baseline configuration scenario. 2. Create a new interface determination for each baseline configuration scenario. 3. Create a new receiver agreement for each baseline configuration scenario. 4. Activate the changes.	All extraction interfaces	Required
13	Run the report /MIAPM/342P2_UPGRADE_ PARAMS.	All except Notification Creation Inter-face	Required
14	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Man-agement Inter-face -and- Notification and Order Extraction Interface	Required

Step	Task	Associated Interface	Required/Optional
15	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface -and- Notification and Order Extraction Interface	Required
16	Restart the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
17	Define the connection information for the SAP PI Server in the file Meridium.SAP.CertifiedInterface.Config.xml on the Meridium APM Application Server.	Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
18	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface	Required
19	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	All interfaces *except* for the Notification Creation Interface	Optional
20	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Framework application.	Work Management Interface	Optional

Upgrade from any version V3.5.0 through V3.5.0.0.7.1

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required

Step	Task	Associated Interface	Required/Optional
2	If you configured custom field mappings in V3.5.0, export your custom field mappings.	All interfaces	Required
3	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
4	Delete the previous version of the Software Component Version via the SAP Exchange Infrastructure.	All interfaces *except* the Work Management Interface	Required
5	If you configured custom field mappings in V3.5.0, reset the baseline field mappings.	All interfaces	Required
6	If you configured custom field mappings in V3.5.0, import your custom field mappings.	All interfaces	Required
7	Run the report /MIAPM/350P3_UPGRADE_EXCEPTION.	All interfaces	Required
8	Configure the System Landscape Directory (SLD) on the SAP PI Server, which will create a new Software Component Version.	All interfaces *except* the Work Management Interface	Required
9	Import the configuration object.	All extraction interfaces	Required
10	Modify the baseline communication channels.	All extraction interfaces	Required
11	Activate the scenarios that were created by the configuration object.	All extraction interfaces	Required

Step	Task	Associated Interface	Required/Optional
12	For each *additional* Meridium APM data source to and from which you want to transfer data: 1. Create a new receiver determination for each baseline configuration scenario. 2. Create a new interface determination for each baseline configuration scenario. 3. Create a new receiver agreement for each baseline configuration scenario. 4. Activate the changes.	All extraction interfaces	Required
13	Review the entries in the /MIAPM/PARAMS table and make sure one exists for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required
14	Run the report /MIAPM/342P2_UPGRADE_PARAMS.	All except Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
15	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
16	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface -and- Notification and Order Extraction Interface	Required
17	Restart the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
18	Define the connection information for the SAP PI Server in the file Meridium.SAP.CertifiedInterface.Config.xml on the Meridium APM Application Server.	Notification Creation Interface	Required

Ste-p	Task	Associated Interface	Required/Op-tional
19	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Man-agement Inter-face -and- Functional Location Char-acteristics Extraction Interface -and- Equipment Char-acteristics Extraction Interface	Required
20	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	All interfaces *except* for the Notification Creation Inter-face	Optional
21	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Frame-work application.	Work Man-agement Inter-face	Optional

Upgrade from any version V3.4.5 through V3.4.5.0.1.4

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
3	Delete the previous version of the Software Component Version via the SAP Exchange Infrastructure.	All interfaces *except* the Work Management Interface	Required
4	Configure the System Landscape Directory (SLD) on the SAP PI Server, which will create a new Software Component Version.	All interfaces *except* the Work Management Interface	Required
5	Import the configuration object.	All extraction interfaces	Required
6	Modify the baseline communication channels.	All extraction interfaces	Required

S-te-p	Task	Associated Interface	Required/-Optional
7	Activate the scenarios that were created by the configuration object.	All extraction interfaces	Required
8	For each *additional* Meridium APM data source to and from which you want to transfer data: 1. Create a new receiver determination for each baseline configuration scenario. 2. Create a new interface determination for each baseline configuration scenario. 3. Create a new receiver agreement for each baseline configuration scenario. 4. Activate the changes.	All extraction interfaces	Required
9	Review the entries in the /MIAPM/PARAMS table and make sure one exists for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required
10	Run the report /MIAPM/342P2_UPGRADE_PARAMS.	All except Notification Creation Interface	Required

S-te-p	Task	Associated Interface	Required/-Optional
11	Configure field mappings on your SAP System.	All interfaces	Required only if you want to modify the baseline field mappings.
12	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
13	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface -and- Notification and Order Extraction Interface	Required

S-te-p	Task	Associated Interface	Required/-Optional
14	Restart the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
15	Define the connection information for the SAP PI Server in the file Meridium.SAP.CertifiedInterface.Config.xml on the Meridium APM Application Server.	Notification Creation Interface	Required

S-te-p	Task	Associated Interface	Required/-Optional
16	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface	Required
17	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	All interfaces *except* for the Notification Creation Interface	Optional

S-te-p	Task	Asso-ciated Inter-face	Required/-Optional
18	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Frame-work application.	Work Man-agement Interface	Optional
19	Configure the Meridium APM system to extract Equip-ment and Functional Location characteristics from SAP. You can do so via the Meridium APM Framework applic-ation.	Func-tional Location Char-acter-istics Extrac-tion Interface -and- Equip-ment Char-acter-istics Extrac-tion Interface	Required

S-te-p	Task	Associated Interface	Required/-Optional
20	Populate the following fields in the /MIAPM/PARAMS table: • **WH Project Path:** Should be populated with *Rules Library\Meridium\SAPInterfaces\IntegrationInterfaces* • **WH Rule Name:** Should be populated with *Library.Meridium.IntegrationInterfaces.HistoryInterfaces.HaromizeWorkHistory* • **WH FM Name:** Should be populated with */MIAPM/VALIDATE_WORK_HISTORY*	Notification and Order Extraction Interface	Required only if you did not already complete this step in a previous version of Meridium APM.
21	Run the report /MIAPM/WH_HARMONIZATION.	Notification and Order Extraction Interface	Required only if you were already using the Notification and Order Extraction Interface in the Meridium APM version from which you are upgrading.

S-te-p	Task	Associated Interface	Required/-Optional
22	Run the report /MIAPM/350_UPGRADE_WH.	Notification and Order Extraction Interface	Required only if you were already using the Notification and Order Extraction Interface in the Meridium APM version from which you are upgrading.
23	Run the report /MIAPM/350P3_UPGRADE_EXCEPTION.	All interfaces	Required

Upgrade or Update Non-PI Customers to 3.6.1.3.0

The following tables list the steps that are required to update or upgrade the SAP Interfaces if you are not using an SAP PI Server. These steps assume that you have completed the steps for upgrading the components in the basic Meridium APM system architecture.

Update from any version V3.6.1.0.0 through V3.6.1.2.0

This module will be updated to 3.6.1.3.0 automatically when you update the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.6.0.0.0 through V3.6.0.12.6

This module will be updated to 3.6.1.3.0 automatically when you update the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.5.1.0.0 through V3.5.1.12.0

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	If you configured custom field mappings in V3.5.1, export your custom field mappings.	All interfaces	Required
3	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
4	If you configured custom field mappings in V3.5.1, reset the baseline field mappings.	All interfaces	Required
5	If you configured custom field mappings in V3.5.1, import your custom field mappings.	All interfaces	Required
6	Run the report /MIAPM/350P3_UPGRADE_EXCEPTION.	All interfaces	Required

Step	Task	Associated Interface	Required/Optional
7	Review the entries in the /MIAPM/PARAMS table and make sure one exists for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required
8	Run the report /MIAPM/342P2_UPGRADE_PARAMS.	All except Notification Creation Interface	Required
9	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
10	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface	Required
11	Start the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface	Required

Step	Task	Associated Interface	Required/Optional
12	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
13	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Optional

Step	Task	Associated Interface	Required/Optional
14	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Extraction Interface -and- Equipment Extraction Interface -and- Notification Creation Interface	Optional

Upgrade from any version V3.5.0 SP1 LP through V3.5.0.1.9.0

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	If you configured custom field mappings in V3.5.0, export your custom field mappings.	All interfaces	Required
3	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
4	If you configured custom field mappings in V3.5.0, reset the baseline field mappings.	All interfaces	Required

Step	Task	Associated Interface	Required/Optional
5	If you configured custom field mappings in V3.5.0, import your custom field mappings.	All interfaces	Required
6	Run the report /MIAPM/350P3_UPGRADE_EXCEPTION.	All interfaces	Required
7	Review the entries in the /MIAPM/PARAMS table and make sure one exists for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required
8	Run the report /MIAPM/342P2_UPGRADE_PARAMS.	All except Notification Creation Interface	Required
9	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
10	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface	Required
11	Start the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface	Required

Step	Task	Associated Interface	Required/Optional
12	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
13	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Optional

Step	Task	Associated Interface	Required/Optional
14	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Extraction Interface -and- Equipment Extraction Interface -and- Notification Creation Interface	Optional

Upgrade from any version V3.5.0 through V3.5.0.0.7.1

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	If you configured custom field mappings in V3.5.0, export your custom field mappings.	All interfaces	Required
3	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required
4	If you configured custom field mappings in V3.5.0, reset the baseline field mappings.	All interfaces	Required

Step	Task	Associated Interface	Required/Optional
5	If you configured custom field mappings in V3.5.0, import your custom field mappings.	All interfaces	Required
6	Run the report /MIAPM/350P3_ UPGRADE_EXCEPTION.	All interfaces	Required
7	Review the entries in the /MIAPM/PARAMS table and make sure one exists for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Notification Creation Interface	Required
8	Run the report /MIAPM/342P2_ UPGRADE_PARAMS.	All except Notification Creation Interface	Required
9	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Management Interface -and- Notification and Order Extraction Interface	Required
10	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface	Required
11	Start the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface	Required

Step	Task	Associated Interface	Required/Optional
12	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Required

Step	Task	Associated Interface	Required/Optional
13	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Optional

Step	Task	Associated Interface	Required/Optional
14	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Extraction Interface -and- Equipment Extraction Interface -and- Notification Creation Interface	Optional

Upgrade from any version V3.4.5 through V3.4.5.0.1.4

Step	Task	Associated Interface	Required/Optional
1	Upgrade the Meridium APM Web Services on the Meridium APM Web Server.	All interfaces	Required
2	Upgrade the SAP Interfaces ABAP Add-On on your SAP System.	All interfaces	Required

S-te-p	Task	Asso-ciated Inter-face	Required/-Optional
3	Review the entries in the /MIAPM/PARAMS table and make sure one exists for each unique combination of Meridium APM Application server and data source to and from which you want to transfer data.	All except Noti-fication Creation Interface	Required
4	Run the report /MIAPM/342P2_UPGRADE_PARAMS.	All except Noti-fication Creation Interface	Required
5	Configure field mappings on your SAP System.	All inter-faces	Required only if you want to modify the baseline field map-pings.
6	Start the Meridium Core SAP Connector service on the Meridium APM Application Server, and then restart the Meridium APM Application Server.	Work Man-agement Interface -and- Noti-fication and Order Extrac-tion Interface	Required

S-te-p	Task	Associated Interface	Required/-Optional
7	Define settings in the file CSCS.exe.config on the Meridium APM Application Server to define your SAP systems.	Work Management Interface	Required
8	Start the Meridium Core SAP Connector service on the Meridium APM Application Server.	Work Management Interface	Required

Step	Task	Associated Interface	Required/-Optional
9	Create new SAP System records to identify any new SAP systems that you were not using with the previous version of Meridium APM. You can do so via the Meridium APM Framework application.	Work Management Interface -and- Functional Location Characteristics Extraction Interface -and- Equipment Characteristics Extraction Interface -and- Notification Creation Interface	Required

S-te-p	Task	Asso-ciated Inter-face	Required/-Optional
10	Test the SAP connection information that you specified in your SAP System records that you created using the previous step. You can do so via the Meridium APM Framework application.	Work Man-agement Interface -and- Func-tional Location Char-acter-istics Extrac-tion Interface -and- Equip-ment Char-acter-istics Extrac-tion Interface -and- Noti-fication Creation Interface	Optional

S-te-p	Task	Associated Inter-face	Required/-Optional
11	For each new SAP System record that you created in the previous step, link it to the appropriate Site Reference record. You can do so via the Meridium APM Frame-work application.	Work Man-agement Interface -and- Func-tional Location Extrac-tion Interface -and- Equip-ment Extrac-tion Interface -and- Noti-fication Creation Interface	Optional

S-te-p	Task	Asso-ciated Inter-face	Required/-Optional
12	Configure the Meridium APM system to extract Equip-ment and Functional Location characteristics from SAP. You can do so via the Meridium APM Framework applic-ation.	Func-tional Location Char-acter-istics Extrac-tion Interface -and- Equip-ment Char-acter-istics Extrac-tion Interface	Required
13	Populate the following fields in the /MIAPM/PARAMS table: • **WH Project Path:** Should be populated with *Rules Library\Meridi-um\SAPInterfaces\IntegrationInterfaces* • **WH Rule Name:** Should be populated with *Library.Meridi-um.In-tegrationInterfaces.HistoryInterfaces.HaromizeWorkHistory* • **WH FM Name:** Should be populated with */MIAPM/VALIDATE_WORK_HISTORY*	Noti-fication and Order Extrac-tion Interface	Required

S-te-p	Task	Associated Interface	Required/-Optional
14	Run the report /MIAPM/WH_HARMONIZATION.	Notification and Order Extraction Interface	Required only if you were already using the Notification and Order Extraction Interface in the Meridium APM version from which you are upgrading.
15	Run the report /MIAPM/350_UPGRADE_WH.	Notification and Order Extraction Interface	Required only if you were already using the Notification and Order Extraction Interface in the Meridium APM version from which you are upgrading.
16	Run the report /MIAPM/350P3_UPGRADE_EXCEPTION.	All interfaces	Required

Installing Meridium APM Web Services

The following instructions provide details on installing the Meridium APM Web Services software and a supporting instance of the Meridium APM Application Server on the Meridium APM Web Server machine.

To install Meridium APM Web Services:

1. On the machine that will serve as the Meridium APM Web Server, insert the Meridium APM distribution DVD, and navigate to the folder **General Release\Meridium APM Framework and Server Setup\Setup\Meridium APM Server and Add-ons**.

2. Double-click the files **setup.exe**.

   The **Meridium APM Server and Add-ons** installer appears, displaying the **Preparing Setup** screen, which contains a progress bar.

   After the progress bar reaches the end, the Welcome screen appears.

3. Click the **Next** button.

   The **License Agreement** screen appears.

4. Read the entire license agreement, and then select one of the following options:

   The **Next** button becomes enabled.

   - **I accept the terms of the license agreement**, if you agree to the terms of the license agreement and want to continue. These instructions assume that you want to continue.

   - **I do not accept the terms of the license agreement**. This option is selected by default. If you do not agree to the terms of the license agreement and do not want to continue, click the **Cancel** button to exit the installer.

   Œ**Hint:** If you want to print the license agreement, click the **Print** button.

5. Click the **Next** button.

   The **Select Installation Location** screen appears, prompting you to select the location where the Meridium APM Web Services will be installed. By default, the Meridium APM Web Services software will be saved to the following folder: **C\Program Files\Meridium**.

6. If you are satisfied with the default location where the software will be installed, click the **Next** button.

   -or-

   If you want to change the location where the software will be installed, click the **Change** button, and navigate to the location where you want to install the

Meridium APM Web Services software. The folder path that you select will be displayed in place of the default folder path. When you are satisfied with the installation location, click the **Next** button.

The **Select the features you want to install** screen appears, and the Meridium APM Application Server node is highlighted automatically in the tree.

> **Note:** The **Select the features you want to install** screen lets you specify which features you want to install on the Meridium APM Web Server machine. *These instructions* assume that you want to deploy only the Meridium APM Web Services software and a supporting instance of the Meridium APM Application Server. When the Meridium APM Web Services software is installed, the Meridium APM System Administration tool is installed automatically. When the Meridium APM Application Server software is installed, the following APM Framework applications are installed automatically: APM Framework, Database Upgrade Manager, Data Source Manager, Schedule Manager, and URL Manager. Corresponding options for these applications are not listed in the tree because these components must be installed with the Meridium APM Application Server software. You can optionally install the *Configuration Manager* and the APM Framework adapter, *Meridium APM Adapter for SSRS Designer*.

7. Select the **Meridium APM Application Server** check box.

   The subnodes are selected automatically.

8. Clear the **Configuration Manager** check box. Keep in mind that you can run this installer again and install the Configuration Manager at a later time.

9. Clear the **Meridium APM Adapter for SSRS Designer** check box. Keep in mind that you can run this installer again and install the Configuration Manager at a later time.

> ⌐**IMPORTANT:** While additional options are available in the tree on the **Select the features you want to install** screen, these options are not meant to be installed on the Meridium APM Web Server machine, and these instructions are limited to installing the Meridium APM Web Services software and a supporting instance of the Meridium APM Application Server software (with APM Framework applications). This installer is also used to install the additional components on other machines.

10. Scroll down in the list of available components, and select the **Meridium APM Web Services** check box.

11. Click the **Next** button.

    A message appears, indicating that the installer is checking your machine for the required prerequisites for the features that you want to install.

    • If one or more prerequisites are missing on the machine, the **Meridium Installer** screen will appear and display a message that indicates which prerequisites still need to be installed on the machine before you can install the feature that is dependent on that prerequisite. This message also indicates what you can do to continue.

        If you see this screen, you should read the message in detail, and either click the **Back** button to clear the selection whose prerequisites are missing, and then continue through the installation without installing that component, or close the installer, install the missing prerequisite, and then run the installer again later.

    • If all the prerequisites for the selected components are installed on the machine, or you have selected components that do not require any prerequisites, the **Select ZIP File Location** screen appears.

The **Select ZIP File Location** screen lets you specify the location where you want the ZIP file of database content to be installed. This ZIP file is used by the Database Comparison Utility. By default, the ZIP file will be installed in the folder **C:\Meridium\DbUpg**. You can, however, select a different location.

12. Read the information on this screen and note the estimated size of the extracted files from this ZIP file. You should use this information to determine where you want install the ZIP file.

13. If you want the ZIP file to be installed in the default location, accept the default setting.

    -or-

    If you want the ZIP file to be installed in a different location, click the **Browse** button, and navigate to the location where you want the ZIP file to be installed. The selected file path will appear in the **Destination Folder** section in place of the default file path.

14. Click the **Next** button.

    The **Websites** screen appears.

The **Websites** screen lets you specify where the installer will create a virtual directory for Meridium APM. This website is configured in the IIS Manager on the APM Application Server machine. The websites list contains all the websites that are configured on the APM Application Server machine. The default website is *Default Web Site*. Throughout this documentation, we assume that you have chosen to install Meridium APM under the Default Web Site.

15. In the list of websites, select the website where you want the installer to create a virtual directory.

16. Click the **Next** button.

   The **Complete the Installation** screen appears.

The **Complete the Installation** screen contains a message, indicating that if you want to modify any of the settings that you specified in the preceding screens in the installer, you can use the **Back** button to do so, or if you do not want to complete the installation, you can click **Cancel**.

These instructions assume that you are ready to complete the installation process.

17. Click the **Install** button.

    The **Setup Status** screen appears, which displays a progress bar that shows the progress of the installation process.

After the progress bar reaches the end, a message appears, indicating that your server is being configured. After your server is configured, the **Installation is Complete** screen appears.

This screen contains a message, indicating that Meridium APM Server and Add-ons has been installed successfully. You can also select to optionally launch the APM System Administration tool when the installer window closes. By default, this option is set to *Yes*.

18. Clear the **Launch APM System Administration now** check box, and click the **Finish** button.

The **Meridium APM Server and Add-ons** installer closes. At this point, you should refer back to the checklist:

- PI Customers
- Non-PI Customers

Upgrading Meridium APM Web Services from V3.5.0 and Later

The following instructions provide details on upgrading the Meridium APM Web Services software on the Meridium APM Web Server, along with the supporting instance of the Meridium APM Application Server that is installed on that machine.

To upgrade the Meridium APM Web Services software on the Meridium APM Web Server machine:

1. On the Meridium APM Web Server machine, insert the Meridium APM distribution DVD, and navigate to the folder **General Release\Meridium APM Framework and Server Setup\Setup\Meridium APM Server and Add-ons**.

   Double-click the file **Setup.exe**.

   A message appears, asking if you want to allow setup.exe to make changes to your machine.

2. Click the **Yes** button.

   The **Meridium APM Server and Add-ons** installer appears, displaying the **Preparing Setup** screen, which contains a progress bar.

   After the progress bar reaches the end, a message appears, asking if you want to upgrade your server.

4. Click the **Yes** button.

    The **Setup Status** screen appears, displaying a progress bar that indicates the status of the upgrade process.

    After the progress bar reaches the end, a message appears, indicating that your server is being configured. After your servers is configured, the **Maintenance Complete** screen appears.

This screen contains a message, indicating that your software has been upgraded successfully. You can also select to optionally launch the Meridium APM System Administration tool when the installer window closes. By default, this option is set to *Yes*.

5. Clear the **Launch APM System Administration now** check box.

6. Click the **Finish** button.

   The **Meridium APM Server and Add-ons** installer closes. At this point, you should refer back to the checklist:

   - PI Customers
   - Non-PI Customers

Upgrading Meridium APM Web Services from V3.4.5

The following instructions provide details on upgrading the Meridium APM Web Services software on the Meridium APM Web Server. These instructions assume you understand that the older version of Meridium APM will be uninstalled automatically before the new version is installed.

To upgrade Meridium APM Web Services:

1. On the Meridium APM Web Server machine, insert the Meridium APM distribution DVD, and navigate to the folder **General Release\Meridium APM Framework and Server Setup\Setup\Meridium APM Server and Add-ons**.

   Double-click the file **Setup.exe**.

   A message appears, asking if you want to allow setup.exe to make changes to your machine.

2. Click the **Yes** button.

   The **Meridium APM Server and Add-ons** installer appears, displaying the **Preparing Setup** screen, which contains a progress bar.

After the progress bar reaches the end, the Welcome screen appears.

3. Click the **Next** button.

   A message appears, indicating that an older version of Meridium APM is installed on this machine and that it will be uninstalled automatically before you can install the new version.

4. Click the **Yes** button.

   The **License Agreement** screen appears.

5. Read the entire license agreement, and then select one of the following options:

- **I accept the terms of the license agreement**, if you agree to the terms of the license agreement and want to continue. These instructions assume that you want to continue.

- **I do not accept the terms of the license agreement**. This option is selected by default. If you do not agree to the terms of the license agreement and do not want to continue, click the **Cancel** button to exit the installer.

The **Next** button is enabled.

> Œ **Hint:** If you want to print the license agreement, click the **Print** button.

6. Click the **Next** button.

The **Select Installation Location** screen appears, prompting you to select the location where the Meridium APM Web Services software will be installed after the older version is uninstalled. The software will be saved to the following folder on the Meridium APM Web Server by default: **C\Program Files\Meridium**.

7. If you are satisfied with the default location where the software will be installed, click the **Next** button.

   -or-

   If you want to change the location where the software will be installed, click the **Change** button, and navigate to the location where you want to install the Meridium APM Web Services. The folder path that you select will be displayed in place of the default folder path. When you are satisfied with the installation location, click the **Next** button.

   The **Select the features you want to install** screen appears, and the **Meridium APM Application Server** node is highlighted automatically in the tree.

ŗIMPORTANT: The **Select the features you want to install** screen lets you specify which features you want to install on the Web Server machine after the older version is uninstalled. *Theseinstructions* assume that you want to deploy only the Meridium APM Web Services option and a supporting instance of the Meridium APM Application Server. When you install the Meridium APM Web Services software, the Meridium APM System Administration tool is installed automatically. When you install the Meridium APM Application Server software, the following APM Framework applications are installed automatically: APM Framework, Database Upgrade Manager, Data Source Manager, Schedule Manager, and URL Manager. You can optionally install the *Configuration Manager*and APM Framework adapter,*Meridium APM Adapter for SSRS Designer*.

8. Select the **Meridium APM Application Server** check box.

    The subnodes are selected automatically.

9. Clear the **Configuration Manager** check box. Keep in mind that you can run this installer again and install the Configuration Manager at a later time.

10. Clear the **Meridium APM Adapter for SSRS Designer** check box. Keep in mind that you can run this installer again and install the Configuration Manager at a later time.

> ⌐**IMPORTANT:** While additional options are available in the tree on the **Select the features you want to install** screen, these options are not meant to be installed on the Meridium APM Web Server machine, and these instructions are limited to installing the Meridium APM Web Services software and a supporting instance of the Meridium APM Application Server software (with APM Framework applications). This installer is also used to install the additional components *on other machines*.

11. Scroll down in the list of available components, and select the **Meridium APM Web Services** check box.

12. Click the **Next** button.

    A message appears, indicating that the installer is checking your machine for the required prerequisites for the features that you want to install.

- If one or more prerequisites are missing on the machine, the **Meridium Installer** screen will appear and display a message that indicates which prerequisites still need to be installed on the machine before you can install the feature that is dependent on that prerequisite. This message also indicates what you can do to continue.

    If you see this screen, you should read the message in detail, and either click the **Back** button to clear the selection whose prerequisites are missing, and then continue through the installation without installing that component, or close the installer, install the missing prerequisite, and then run the installer again later.

- If all the prerequisites for the selected components are installed on the machine, or you have selected components that do not require any prerequisites, the **Select ZIP File Location** screen appears.

The **Select ZIP File Location** screen lets you specify the location where you want the ZIP file of database content to be installed. This ZIP file is used by the Database Comparison Utility. By default, the ZIP file will be installed in the folder **C:\Meridium\DbUpg**. You can, however, select a different location.

13. Read the information on this screen and note the estimated size of the extracted files from this ZIP file. You should use this information to determine where you want install the ZIP file.

14. If you want the ZIP file to be installed in the default location, accept the default setting.

    -or-

    If you want the ZIP file to be installed in a different location, click the **Browse** button, and navigate to the location where you want the ZIP file to be installed. The selected file path will appear in the **Destination Folder** section in place of the default file path.

15. Click the **Next** button.

    The installer performs a check to make sure that your system meets the requirements of the selected components.

    - If one or more prerequisites are missing on the machine, the **Meridium Installer** screen will appear and display a message that indicates which prerequisites still need to be installed on the machine before you can install the feature that is dependent on that prerequisite. This message also indicates what you can do to

continue.

> If you see this screen, you should read the message in detail, and either click the **Back** button to clear the selection whose prerequisites are missing, and then continue through the installation without installing that component, or close the installer, install the missing prerequisite, and then run the installer again later.

- If all the prerequisites are installed on the machine, the **Websites** screen appears.

When Meridium APM Web Services is installed, the installer creates a virtual directory within a website that is configured in the IIS Manager on the Meridium APM Application Server. If you have more than one website configured on the Meridium APM Application Server, this screen lets you choose which website to use.

> **Note:** Throughout this documentation, we assume that you have chosen to install Meridium APM Web Services under the website *Default Web Site*. If you install it under a different website, wherever our documentation refers to the Default Web Site, you will need to substitute the website that you selected during this step.

16. In the list of websites, select the website where you want to create a virtual directory for Meridium APM Web Services.

> **Note:** If you have only one website configured, that website will be selected in the list automatically. In this case, you can simply accept the default selection.

17. Click the **Next** button.

    The **Complete the Installation** screen appears.

18. Click the **Install** button.

    A message appears, indicating that the older version of Meridium APM is being removed. After the older version is removed, the **Setup Status** screen appears and displays a progress bar, indicating the progress of the installation process.

After the progress bar reaches the end, the **Installation is Complete** screen appears.

This screen contains a message, indicating that Meridium APM Web Services has been installed successfully. You can also select to optionally launch the APM System Administration tool when the installer window closes. By default, this option is set to *Yes*.

19. Clear the **Launch APM System Administration now** check box, and click the **Finish** button.

The **Meridium APM Server and Add-ons** installer closes. At this point, you should refer back to the checklist:

- PI Customers
- Non-PI Customers

What is Included in the ABAP Add-On?

For information about what is included in the SAP Interfaces ABAP Add-on, see the file *SAP_Interfaces_<version>_ObjectList.pdf*, which is located on the SAP Interfaces install-ation DVD in the folder \\ABAP Add-on.

Installing the ABAP Add-On

> **Note:** To complete the following instructions successfully, you *must* use SAP client *000*.

To install the SAP Interfaces ABAP Add-On package on the SAP system:

1. On a machine from which you can access the SAP Server, insert the **SAP Interfaces** installation DVD.

2. Navigate to the folder **ABAP Add-on\Installation**.

3. Navigate to the subfolder **ECC6**, and copy the .PAT file.

4. On the SAP Server, paste the copied file into the folder **usr\sap\trans\eps\in**.

5. Log in to the SAP system as a user with:

   - **SCTSIMPSGL** and **S_CTS_ADMIN** authorizations.

   -or-

- **SAP_ALL** authorization.

6. Run the **SAINT** transaction.

   The **Add-On Installation Tool** screen appears.

7. On the **Installation Package** menu, point to **Load packages**, and then click **From Application Server**.

   A message appears, asking if you want to upload OCS packages from the ECS inbox.

8. Click the **Yes** button.

   The **SAINT: Uploading Packages from the File System** screen appears.

9. Select the .PAT file that you copied in step 3 of these instructions. The message column should read **Uploaded successfully**.

10. Click the 🔴 button.

   The **Add-On Installation Tool** screen appears again.

11. Click the **Start** button.

   A new grid appears. *MIAPMINT* appears in the list of add-on packages that can be installed.

12. Select the row containing the value **MIAPMINT** in the first column, and click the **Continue** button.

   The **Support Package selection** tab appears.

13. Click the **Continue** button.

14. Click the **Continue** button again.

> **Note:** During the installation, the **Add Modification Adjustment Transports to the Queue** dialog box might appear. If it does, click the **No** button.

An indicator appears at the bottom of the screen to indicate the installation progress.

15. When the progress indicator disappears, a message appears, indicating that the add-on package will be installed.

16. Click the ✔ button.

The status is updated to indicate that the add-on package will now be imported, and the installation process continues.

When the installation process is complete, the status is updated to indicate that the add-on package was imported successfully.

Status/Remarks

The Add-on was successfully imported with the displayed queue

- Choose [LOGS] to display the import logs

- Choose [FINISH] to complete the installation

17. Click the **Finish** button.

The **MIAPMINT** add-on package appears in the list of installed add-on packages on the **Add-On Installation Tool** screen.

Add-On Installation Tool - Version 7.00/0026

Add-On Installation Tool : Installed Add-ons

Add-ons and Preconfigured Systems installed in the system

Add-on/PCS	Release	Level	Description	Import ..
IS-PS-CA	600	0011	IS-PUBLIC SECTOR CONTRACT ACCOUNTING	00
IS-UT	600	0011	SAP Utilities/Telecommunication	00
LSOFE	600	0011	SAP Learning Solution Front-End	00
MIAPMINT	351_600	0000	Meridium APM Integration Interfaces	00
PI_BASIS	2005_1_700	0014	PI_BASIS 2005_1_700	00
SAP_AP	700	0011	SAP Application Platform	00
SAP_BW	700	0016	SAP NetWeaver BI 7.0	00
SEM-BW	600	0011	SEM-BW: Strategic Enterprise Management	00
ST-PI	2005_1_700	0005	SAP Solution Tools Plug-In	00

Status/Remarks

The Add-on MIAPMINT rel.351_600 was installed successfully

- Choose [START] to start another installation or another upgrade

Upgrading the ABAP Add-On

To upgrade the SAP Interfaces ABAP Add-On package on the SAP system:

1. On a machine from which you can access the SAP Server, insert the **SAP Interfaces** installation DVD.

2. Navigate to the folder **\\ABAP Add-on\Upgrade**.

3. Navigate to the subfolder **ECC6**, and copy the .PAT file.

4. On the SAP Server, paste the copied file into the folder **\\usr\sap\trans\eps\in**.

5. Log in to the SAP system as a user with **S_CTS_IMPSGL** and **S_CTS_ADMIN** authorization.

6. Run the **SAINT** transaction.

   The **Add-On Installation Tool** screen appears.

7. On the **Installation Package** menu, point to **Loadpackages**, and then click **From Application Server**.

   A message appears, asking if you want to upload OCS packages from the ECS inbox.

8. Click the **Yes** button.

   The **SAINT: Uploading Packages from the File System** screen appears.

9. Select the .PAT file that you copied in step 3 of these instructions. The message column should read **Uploaded successfully**.

10. Click the button.

    The **Add-On Installation Tool** screen appears again.

11. Click the **Start** button.

    A new grid appears. *MIAPMINT* appears in the list of add-on packages that can be installed.

12. Select the row containing the value **MIAPMINT** in the first column, and click the **Continue** button.

    The **Support Package selection** tab appears.

13. Click the **Continue** button.

14. Click the **Continue** button again.

    > **Note:** During the installation, the **Add Modification Adjustment Transports to the Queue** dialog box might appear. If it does, click the **No** button.

An indicator appears at the bottom of the screen to indicate the installation progress.

15. When the progress indicator disappears, a message appears, indicating that the add-on package will be installed.

16. Click the ✔ button.

The status is updated to indicate that the add-on package will now be imported, and the installation process continues.

When the installation process is complete, the status is updated to indicate that the add-on package was imported successfully.

17. Click the **Finish** button.

The **MIAPMINT** add-on package appears in the list of installed add-on packages on the **Add-On Installation Tool** screen.

About the /MIAPM/PARAMS Table

For each unique combination of Meridium APM data source and Application Server that you want to use with the SAP Interfaces, you will need to create a separate entry in the /MIAPM/PARAMS table.

For example, if you wanted to transfer data to *two* Meridium APM data sources that are connected to the *same* Meridium APM Application Server, you would need to create *two* entries in the /MIAPM/PARAMS table. Both entries would identify the same Meridium APM Application Server but different data sources.

Likewise, if you wanted to transfer data to *one* Meridium APM data source that is connected to *two* Meridium APM Application Servers, you would need to create *two* entries in the /MIAPM/PARAMS table. Both entries would identify the same Meridium APM data source but different Meridium APM Application Servers.

Creating an Entry in the /MIAPM/PARAMS Table

To create an entry in the /MIAPM/PARAMS table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Meridium APM Parameters** row, click the 🔘 button.

   The **Manage Meridium APM Parameters** screen appears.

4. Click the ⊞ button.

   A separate **Manage Meridium APM Parameters** window appears, displaying a new form.

5. In the **APM Data Source** text box, type the name of the Meridium APM data source to which you will transfer data to and from SAP. The data source name must be unique to other entries in the /MIAPM/PARAMS table. In other words, multiple entries cannot contain the same data source name.

6. In the **APM App Server** text box, type the name of the Meridium APM Application Server to which you will transfer data to and from SAP.

> **Note:** If the Meridium APM Web Server is installed on the *same* machine as the dedicated Meridium APM Application Server, to improve performance, the value that you type in the **APM App Server** text box will be ignored when running a report. In addition, when you run the transaction *SLG1*, you will see an entry in the log indicating that the Application Server value was not used.

7. In the **APMWeb Service Link** text box, delete any existing text, and type the following URL:

   http://<IntegrationServicesServer>/MeridiumIntegrationServices/

   ...where **<IntegrationServicesServer>** is the name of the Meridium APM Web Server.

8. In the **APMWeb Service** text box, do not type anything.

   > **Note:** This setting is not currently used.

9. In the **APMUser Name** text box, type the user name of a Meridium APM Security User with the appropriate family-level privileges needed to create and update records using the SAP Interfaces.

10. In the **APMPassword** text box, type the password that is associated with the Security User that you typed in the **APMUser Name** text box. The characters that you type will be replaced with asterisks automatically.

11. In the **Destination** text box, type the name of the [RFC destination that you created](#). The value that you type here should match *exactly* the value that appears in the **RFC Destination** text box on the **RFC Destination** screen, as shown in the following image.

   > **Note:** If you do not plan to use the Work Management Interface, you can leave the **Destination** text box empty.

12. Accept the default values in the following text boxes:

   - **MP Project Path** (the default value is *Rules Library\Meridium\SAPInterfaces\IntegrationInterfaces*)

   - **MP Rule Name** (the default value is *Library.Meridium.IntegrationInterfaces.TaskInterfaces.CreateOrUpdateTask*)

   - **HT Rule Name** (the default value is *Library.Meridium.IntegrationInterfaces.TaskInterfaces.HarmonizeTask*)

- **WH Project Path** (the default value is *Rules Library\Meridium\SAPInterfaces\IntegrationInterfaces*)

- **WH Rule Name** (the default value is *Library.Meridium.IntegrationInterfaces.HistoryInterfaces.HarmonizeWorkHistory*)

13. If you want the reports to call a custom function module rather than the function modules that they are configured to call by default, in the following text boxes, type the name of the function module that you want the reports to call:

> **Note:** If you leave a text box empty, the default function modules will be used when running that report.

- **WH FM Name:** Indicates the function module to call when running the /MIAPM/WH_HARMONIZATION report. By default, the function module /MIAPM/VALIDATE_WORK_HISTORY is used when running this report.

> **Note:** The /MIAPM/WH_HARMONIZATION report is included in this release to accommodate upgrading customers who did not already run this report in a previous patch version of Meridium APM. The documentation assumes that if you are upgrading from a previous version of Meridium APM, you ran this report in a previous patch version, so you do not need to run it again. The documentation does not include instructions for running this report.

- **Equipment FM Name:** Indicates the function module to call when running the /MIAPM/EQUIPMENT_INF report. By default, the function module /MIAPM/RETRIEVE_EQUIPMENT is used when running this report.

- **Func Loc FM Name:** Indicates the function module to call when running the /MIAPM/FUNCTIONAL_LOCATION_INF report. By default, the /MIAPM/RETRIEVE_FUNCTIONAL_LOC function module is used when running this report.

- **Notification FM Name:** Indicates the function module to call when running the /MIAPM/WH_NOTIFICATION report. By default, the /MIAPM/RETRIEVE_WORK_HISTORY function module is used when running this report.

- **Work Order FM Name:** Indicates the function module to call when running the /MIAPM/WH_WORK_ORDER report. By default, the /MIAPM/RETRIEVE_WORK_HISTORY function module is called when running this report.

- **Notif Order FM Name:** Indicates the function module to call when running the /MIAPM/WH_NOTIF_WITH_WO report. By default, the /MIAPM/RETRIEVE_WORK_HISTORY function module is used when running this report.

- **Notif Detail FM Name:** Indicates the function module to call when running the /MIAPM/WORK_HISTORY_DETAILS report. By default, the /MIAPM/RETRIEVE_WH_DETAILS function module is used when running this report.

- **Work Mgmt FM Name:** Indicates the function module to call when running the /MIAPM/WORK_MANAGEMENT_INF report. By default, the /MIAPM/RETRIEVE_TASKS function module is used when running this report.

14. In the **Language** text box, specify the value that corresponds to the language that you are using in SAP. For example, if you are using English, type: `EN`

   > **Note:** When you run the extraction interfaces, Meridium APM will display the extracted values in the language that you specify in this text box, regardless of the language that is configured for the Meridium APM Security User.

15. In the **PI User Name** text box, type the user name of any user that can access the SAP PI Server and is assigned to the SAP_XI_APPL_SERV_USER role.

   > **Note:** If you are not using an SAP PI Server, you should leave the **PI User Name** text box empty.

16. In the **PIPassword** text box, type the password that is associated with the Security User that you typed in the **PIUser Name** text box. The characters that you type will be replaced with asterisks automatically.

   > **Note:** If you are not using an SAP PI Server, you should leave the **PI Password** text box empty.

17. If you want to temporarily disable the connection to the Meridium APM data source and Application Server that are specified in this entry, select the **Inactive** check box.

18. [Specify the Maintenance Plants](#) whose data you want to send to and from the specified Meridium APM data source and Application Server. To do so:

   a. Click the **Assign Plants** button.

   The **Assign Plants** window appears. The **Data Source** column is populated automatically with the value that you typed in the **APM Data Source** text box on the **Manage Meridium APM Parameters** window.

b. Select the first **Plants** cell.

The cell becomes selected, and the ⬚ button appears to the right of the cell.

c. To the right of the selected **Plants** cell, click the ⬚ button.

A list of existing Maintenance Plants appears.

d. In each row representing a Maintenance Plant whose data you want to send to and from the specified Meridium APM data source and Application Server, select the check box.

e. When you are finished specifying the Maintenance Plants, click the ✔ button.

The IDs of the selected Maintenance Plants appear in the grid on the **Assign Plants** window.

e. Below the grid, click the 💾 button.

The selected Maintenance Plants are saved and stored in the /MIAPM/PLANT_CNF table, and the **Manage Meridium APM Parameters** screen returns to focus.

19. Click **OK**.

The changes are saved.

Example of Specifying Maintenance Plants

Suppose that the /MIAPM/PARAMS table contains the following two rows, where each row represents a different Meridium APM data source and Application Server.

Row 1

APM Data Source	Data Source A
APM App Server	Server A

Row 2

APM Data Source	Data Source B
APM App Server	Server B

If you specify the following Maintenance Plants in these rows:

- **Row 1:** Plant 1000
- **Row 2:** Plant 2000

...when a user runs an interface (e.g., the Equipment Extraction Interface) and selects *Plant 1000* and *Plant 2000*, when the equipment is extracted:

- The equipment for *Plant1000* will be extracted to *Data Source A*, which is connected to *Application Server A*.
- The equipment for *Plant2000* will be extracted to *Data Source B*, which is connected to *Application Server B*.

About Configuring Field Mappings

When you run an interface that creates Meridium APM records from SAP data, by default, the Meridium APM system maps certain SAP field values to Meridium APM fields automatically. Specifically, the Meridium APM system maps a standard set of values to the following records during the extraction process:

- Functional Location
- Equipment
- Work History
- Work History Detail
- Inspection and Calibration Task
- Technical Characteristics

If desired, you can accept the baseline mappings without changing them manually. Alternatively, you can modify the baseline mappings, create new mappings, or delete existing mappings. You can modify, create, and delete field mappings using your SAP system. If desired, you can revert to the baseline field mappings at any time.

Note that the Meridium APM system allows you to define a different set of field mappings for each *combination* of interface and Meridium APM data source to which you are extracting the values (where the data sources are defined in the /MIAPM/PARAMS table). For example, suppose the /MIAPM/PARAMS table contains two rows for the following Meridium APM data sources:

- Data Source A
- Data Source B

In this case, you could configure *separate* mappings for the Equipment Extraction Interface for Data Source A and Data Source B. For Data Source A, you might decide to accept the default mappings, and for Data Source B, you might decide to modify the mappings.

Custom Mapping Limitations

For a given extraction interface, you can configure up to 50 custom field mappings. When you create custom field mappings, only the first 50 characters of the field values will be extracted.

Any of the following actions will create a custom mapping:

- Creating a new mapping for the purpose of changing the *Meridium APM field* component of a baseline mapping.

  Note: If you create a new mapping for the purpose of changing only the SAP table or field component of a baseline mapping (i.e., you do not change the Meridium APM field component), the mapping is not considered a custom mapping.

- Creating a new mapping that maps a value to a Meridium APM field to which a value is not yet being mapped.

Viewing the Current Field Mappings

The following instructions explain how to access the list of *current* field mappings, assuming that you have chosen to [modify the baseline mappings](#).

To access the list of current field mappings:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the ⏱ button.

   The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the 📄 button.

   A list of available interfaces appears.

Interface ID		
APM Data Source	Equipment	
	Functional Location	
	Work History Notification	
	Work History Order	
	Work History Notification Order	
	Work History Details	
	Work Management	
	Equipment Technical Characteristics	
	Functional Location Technical Characteristics	

5. In the **Interface ID** list, select the interface for which you want to view the current field mappings.

6. In the **APM Data Source** text box, click the 🗎 button.

    A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to view the current field mappings.

8. At the top of the screen, click the 🔄 button.

    The **Field Mapping Values** screen appears, displaying the list of current field mappings.

Components of Field Mappings

Each field mapping between SAP and Meridium APM consists of the following components.

SAP Table	SAP Field	Meridium APM Field	Conditional Query	Key Indicator
The SAP table containing the field whose value will be mapped to a Meridium APM field.	The SAP field whose value will be mapped to a Meridium APM field.	The Meridium APM field to which the SAP value will be mapped.	The query that is used to map the value from SAP to Meridium APM.	A value indicating whether or not the Meridium APM field is a key field.

About the Conditional Query

If you want to map a value from an SAP table that is not already used in a baseline mapping, you will need to specify a conditional query, which will be used in combination with the other components of the mapping. For example, suppose that you want to map the value *NAME1* from the SAP table *ADRC*, which is not used in any of the baseline mappings. To do so, you would need to specify a conditional query.

The format of the query should be:

<Source SAP Table's Key Field> = <Joined SAP Table>-<Joined SAP Table's Field>

...where:

- *<Source SAP Table's Key Field>* is a key field in the SAP table from which you want to map a value.
- *<Joined SAP Table>* is the table to which you want to join the source SAP table.
- *<Joined SAP Table's Field>* is the SAP field that belongs to the joined SAP table and stores the same value as the source SAP table key field.

Consider the following image, which illustrates two SAP tables:

- **ADRC:** The table containing the field *NAME1*, whose value you want to map. This table is not already used in a baseline mapping.
- **ILOA:** The table containing a field that stores the same value as the key field *ADDRNUMBER*, which exists in the table *ADRC*.

Using this example, you would specify the conditional query using the following format:

ADDRNUMBER = ILOA-ADRNR

The complete mapping would look like this (assuming that you want to map the value to the Meridium APM field *MI_FNCLOC00_AREA_ID_C*):

Table Name	Field Name	Meridium Field Name	Condition to Select Query	Key
ADRC	NAME1	MI_FNCLOC00_AREA_ID_C	ADDRNUMBER = ILOA-ADRNR	☐

> **Note:** The list of SAP tables that are included in the baseline mappings are documented in the Reference Information section of this documentation.

Options for Modifying Field Mappings

You can modify an existing field mapping if you want to change the key field setting.

If you want to modify any of the following components of a baseline mapping, however, you will need to delete the existing field mapping and create a new field mapping for that purpose:

- The SAP table or field whose value will be mapped to a Meridium APM field.

  If you want to map a value from an SAP table that is not already used in a baseline mapping, you will also need to specify a conditional query.

- The Meridium APM field to which the SAP value will be mapped.

Modifying Existing Field Mappings

To modify an existing field mapping:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

    The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the ⏲ button.

    The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the 🗐 button.

    A list of available interfaces appears.

5. In the **Interface ID** list, select the interface for which you want to modify an existing field mapping.

6. In the **APM Data Source** text box, click the 🗐 button.

   A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to modify an existing field mapping.

8. At the top of the screen, click the 🔘 button.

   The **Field Mapping Values** screen appears. If you have already configured custom mappings, the current field mappings appear in the grid. If, however, you have not configured any custom mappings, the grid is empty by default (as shown in the following image).

9. Click the 📝 button.

   Additional buttons appear on the toolbar.

10. If you have not configured any custom field mappings (i.e., if the grid is empty), click the **Reset** button to use the baseline field mappings as a starting point.

11. In the grid, in the row containing the field mapping that you want to modify, modify the values in either or both of the following cells as desired:

    - **Condition to Select Query**
    - **Key**

12. When you are finished modifying the field mapping, click the button.

    The field mapping is saved.

Undoing Changes to a Field Mapping

If you modify a field mapping, you can undo your changes if needed. The following instructions assume that you are viewing the list of current mappings and that you have just made a change that you want to undo.

To undo a change to a field mapping:

1. On the **Field Mapping Values** screen, in the grid, select the row containing the change that you want to undo.

2. Click the ⬧ button.

   Your changes are undone.

3. Click the ⬧ button.

   The field mappings are saved.

Creating New Field Mappings

To create a new field mapping:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the 🕓 button.

   The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the 📄 button.

   A list of available interfaces appears.

5. In the **Interface ID** list, select the interface for which you want to create a new field mapping.

6. In the **APM Data Source** text box, click the 🗈 button.

   A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to create a new field mapping.

8. At the top of the screen, click the 🔄 button.

> **Note:** If the selected data source is set as inactive in the /MIAPM/PARAMS table, a message appears to indicate that. You can click the **Yes** button to continue creating new field mappings for this data source.

The **Field Mapping Values** screen appears. If you have already configured custom mappings, the current field mappings appear in the grid. If, however, you have not configured any custom mappings, the grid is empty by default (as shown in the following image).

9. Click the ![button] button.

   Additional buttons appear on the toolbar.

   ![toolbar: New Entries, Reset, Import, Export]

10. If you have not configured any custom field mappings (i.e., if the grid is empty), click the **Reset** button to use the baseline field mappings as a starting point.
    ![Reset button]

11. Click the **New Entries** button. ![New Entries button]

    A new screen appears, displaying blank rows.

12. In the first new row, in the **Table Name** cell, type the desired SAP table name, or click the ![button] button to select an SAP table from a list of available tables.

13. In the first new row, in the **Field Name** cell, type the desired SAP field name, or click the ![button] button to select an SAP field from a list of available fields.

14. In the **Meridium Field Name** cell, type the desired Meridium APM field ID, or click the ![button] button to select a Meridium APM field from a list of available fields.

15. In the **Condition to Select Query** cell, type the desired query syntax. This value is optional.

16. In the **Key** cell, if the selected Meridium APM field should be used to identify unique records during the extraction process, select the check box.

17. Click the ![button] button.

    The field mapping is saved.

18. If desired, to return to the list of field mappings, click the button.

Copying Existing Field Mappings

If desired, you can copy a field mapping, which allows you to use that field mapping as the starting point for creating a new field mapping.

To copy an existing field mapping:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the ⏾ button.

   The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the ▤ button.

   A list of available interfaces appears.

5. In the **Interface ID** list, select the interface for which you want to copy an existing field mapping.

6. In the **APM Data Source** text box, click the 🗒 button.

   A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to copy an existing field mapping.

8. At the top of the screen, click the 🔄 button.

   > **Note:** If the selected data source is set as inactive in the /MIAPM/PARAMS table, a message appears to indicate that. You can click the **Yes** button to continue copying field mappings for this data source.

   The **Field Mapping Values** screen appears. If you have already configured custom mappings, the current field mappings appear in the grid. If, however, you have not configured any custom mappings, the grid is empty by default (as shown in the following image).

9. Click the button.

   Additional buttons appear on the toolbar.

10. If you have not configured any custom field mappings (i.e., if the grid is empty), to see the baseline field mappings, on the toolbar, click the **Reset** button.

11. In the grid, select the row containing the field mapping that you want to copy.

12. Click the button.

    A new screen appears, displaying a row for the new field mapping, where the values in the new field mapping match the values in the copied field mapping.

13. In the new row, modify the values as desired for the new field mapping.

14. When you are finished modifying the values for the new field mapping, click the ✅ button.

15. Click the 🔙 button.

   The new field mapping is displayed in the grid.

16. Click the 💾 button.

   The field mappings are saved.

Deleting Field Mappings

The following instructions assume that you are [viewing the list of field mappings](#) containing the mappings that you want to delete.

To delete a field mapping:

1. On the **Field Mapping Values** screen, on the toolbar, click the ✏️ button.

   Additional buttons appear on the toolbar.

2. If you have not configured any custom field mappings (i.e., if the grid is empty), to see the baseline field mappings, click the **Reset** button. 🔘 Reset

3. In the grid, select the rows containing the field mappings that you want to delete.

4. On the toolbar, click the 🔲 button.

   The field mappings are deleted.

5. Click the 💾 button.

   The field mappings are saved.

Reverting to the Baseline Field Mappings

If you have modified the baseline field mappings in any way (i.e., deleted a baseline field mapping, created your own custom field mapping, or modified an existing field mapping), you can revert to the baseline field mappings at any time. After you do so, the next time that an extraction interface is run, the baseline field mappings will be used.

To revert to the baseline field mappings:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the ⊕ button.

   The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the ⓘ button.

   A list of available interfaces appears.

5. In the **Interface ID** list, select the interface for which you want to revert to the baseline field mappings.

6. In the **APM Data Source** text box, click the ▤ button.

   A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to revert to the baseline field mappings.

8. At the top of the screen, click the ⊕ button.

   > **Note:** If the selected data source is set as inactive in the /MIAPM/PARAMS table, a message appears to indicate that. You can click the **Yes** button to continue reverting to the baseline field mappings for this data source.

   The **Field Mapping Values** screen appears, displaying the current field mappings.

9. Click the button.

   Additional buttons appear on the toolbar.

10. In the grid, select all of the rows.

11. On the toolbar, click the button.

    The field mappings are deleted.

12. Click the button.

    The Meridium APM system will now begin using the baseline field mappings.

Exporting Field Mappings

In some cases, you might want to export the current field mappings so that you can import them into another SAP system. For example, you might want to do this if you want to export field mappings from a test system and then import into a production system.

To export field mappings:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the ⏱ button.

   The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the 🗒 button.

   A list of available interfaces appears.

Interface ID		
APM Data Source	Equipment	
	Functional Location	
	Work History Notification	
	Work History Order	
	Work History Notification Order	
	Work History Details	
	Work Management	
	Equipment Technical Characteristics	
	Functional Location Technical Characteristics	

5. In the **Interface ID** list, select the interface for which you want to export the field mappings.

6. In the **APM Data Source** text box, click the ▤ button.

   A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to export the field mappings.

8. At the top of the screen, click the ⊕ button.

   > **Note:** If the selected data source is set as inactive in the /MIAPM/PARAMS table, a message appears to indicate that. You can click the **Yes** button to continue exporting field mappings for this data source.

   The **Field Mapping Values** screen appears, displaying the current field mappings.

9. Click the pencil button.

   Additional buttons appear on the toolbar.

10. Click the **Export** button. Export

    The **Save As** dialog box appears.

11. In the **Save in** list, select the folder in which you want to save the field mappings.

12. In the **File name** text box, type a name for the file that will store the field mappings. The default name is *<Interface ID>_<Data Source>.TXT*, where *<Interface ID>* is the interface whose field mappings you are extracting, and *<Data Source>* is the Meridium APM data source for which you are extracting the mappings.

> **Note:** The value in the **Save as type** text box is set by default to *TXT*. You cannot select another value.

13. Click the **Save** button.

   The field mappings are saved as a Text file with the specified file name.

> **Note:** The Text file will contain more rows than are displayed in the field mapping grid in SAP. The additional rows are identified with the value *MI_INTERNAL* in the last column, and these rows are required in order to create a fully functioning export file that can be imported successfully.

Importing Field Mappings

If you have exported field mappings from an SAP system, you can use the following instructions to import those mappings into another SAP system. When you import field mappings, all existing field mappings in the target SAP system will be overwritten.

To import field mappings:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Field Mappings for Extraction Interfaces** row, click the ⊕ button.

   The **Field Mapping Parameters** screen appears.

4. In the **Interface ID** text box, click the ▤ button.

   A list of available interfaces appears.

Interface ID	
APM Data Source	Equipment
	Functional Location
	Work History Notification
	Work History Order
	Work History Notification Order
	Work History Details
	Work Management
	Equipment Technical Characteristics
	Functional Location Technical Characteristics

5. In the **Interface ID** list, select the interface for which you want to import field mappings.

6. In the **APM Data Source** text box, click the ▤ button.

   A list of available Meridium APM data sources appears.

7. In the **APM Data Source** list, select the Meridium APM data source for which you want to import field mappings.

8. At the top of the screen, click the 🕓 button.

   > **Note:** If the selected data source is set as inactive in the /MIAPM/PARAMS table, a message appears to indicate that. You can click the **Yes** button to continue importing field mappings for this data source.

   The **Field Mapping Values** screen appears, displaying the current field mappings.

9. Click the [✎] button.

   Additional buttons appear on the toolbar.

10. Click the **Import** button. [🔁 Import]

    The **Open** dialog box appears.

11. Navigate to the folder containing the Text file that you want to import, select the desired Text file, and click the **Open** button.

    The field mappings that are stored in the selected Text file are imported.

12. Click the 🖫 button.

    The field mappings are saved.

About Configuring Meridium APM to Extract Characteristics

In SAP, you can assign specific characteristics to Equipment and Functional Locations. Each characteristic belongs to a classification, and each classification belongs to a class type, as illustrated in the following image.

By default, the Meridium APM system is not configured to extract characteristics. You can, however, complete several manual configuration steps that will cause the characteristics to be extracted when you run the following interfaces:

- Equipment Characteristics Extraction Interface
- Functional Location Characteristics Extraction Interface

To configure the Meridium APM system to extract characteristics, you will need to complete the following steps in the following order:

1. Using CMMS Classification Type records, specify whether you want to extract characteristics for Equipment, Functional Locations, or both. If you want to extract Equipment and Functional Location characteristics, you will need to create two CMMS Classification Type Definition records: one for Equipment characteristics and one for Functional Location characteristics.

2. Using CMMS Classification records, identify the classifications whose characteristics you want to extract.

3. Using CMMS Characteristic records, identify the specific characteristics that you want to extract.

After you complete these steps, when you run the characteristic extraction interfaces, the appropriate characteristics are extracted from SAP and used to create Technical Characteristic records, which are linked automatically to the corresponding Equipment or Functional Location records.

> **Note:** You can configure the Meridium APM system to extract characteristics only if the SAP Interfaces - Technical Characteristics license is active.

Creating CMMS Classification Type Records

> **Note:** You can complete the following instructions successfully only if the SAP Interfaces - Technical Characteristics license is active.

To create a CMMS Classification Type record:

1. In the Meridium APM Framework, on the toolbar, click the **New** button.

   The **Select Family** dialog box appears.

2. In the list, select **CMMS Classification Type**, and click **OK**.

   A new blank CMMS Classification Type record appears in the Record Manager.

3. In the **CMMS System** list, select the SAP system from which you want to extract characteristics. The **SAP System** list is populated automatically with the value that appears in the Name field in the SAP System record whose Default SAP System field contains the value *True*.

4. In the **Classification Type** list, select the item whose characteristics you want to extract: *Equipment* or *Functional Location*.

5. On the **Common Tasks** menu, click the **Save** link.

   The CMMS Classification Type record is saved. At this point in the configuration process, you will need to select the classifications whose characteristics you want to extract.

How is the CMMS System ID Field Used?

When you create CMMS Classification Type records, using the **CMMS System** list, you must select the SAP system from which you want to extract characteristics belonging to that classification type. The **CMMS System** list displays the values in the Name field in all existing SAP System records. When you save the CMMS Classification Type record, the Meridium APM system finds the [SAP System record](#) whose Name field contains the selected value, and the value in the *System ID* field in that SAP System record is copied to the *CMMS System ID* field in the CMMS Classification Type record.

Then, when you create CMMS Classification or CMMS Characteristic records that are associated with that CMMS Classification Type record, the value in the CMMS System ID field in the CMMS Classification Type record is copied automatically to the CMMS System ID field in those records.

> **Note:** The System ID field is available on the baseline SAP System datasheet, but the CMMS System ID field is not available on the baseline CMMS Classification Type, CMMS Classification, or CMMS Characteristic datasheets.

When you run the [Equipment Characteristic Extraction Interface](#) or the [Functional Location Characteristic Extraction Interface](#), the Meridium APM code needs to determine which specific characteristics to extract from that system. To do so, it evaluates the CMMS Characteristic records that exist in your Meridium APM database. If it finds any CMMS Characteristic records whose CMMS System ID field value identifies the SAP system from which you are running the interface, it will extract only those characteristics from that SAP system (assuming that the **Extract from CMMS System** check box is selected in the CMMS Characteristic record).

For example, suppose that your Meridium APM database contains the following CMMS Classification Type records.

> **Note:** In these images, the CMMS System ID field has been added to the datasheet so that you can see the value that is stored in this field.

In these images, you can see that both records will be used to extract Equipment characteristics. One record will be used to extract them from the SAP system *D02-000*, and the other record will be used to extract them from the SAP system *MDM-800*.

Suppose that the CMMS Classification Type record for *D02-000* is associated with the following CMMS Characteristic records:

...and the CMMS Classification Type record for *MDM-800* is associated with the following CMMS Characteristic records:

If you were to run the Equipment Characteristic Extraction Interface from the SAP system *D02-000*, only the following characteristics would be extracted:

- THREAD TYPE
- Length
- Diameter

Likewise, if you were to run the Equipment Characteristic Extraction Interface from SAP system *MDM-800*, only the following characteristics would be extracted:

- Number of Threads
- THREAD TYPE

Identifying Classifications Whose Characteristics You Want to Extract

> **Note:** You can complete the following instructions successfully only if the SAP Interfaces - Technical Characteristics license is active.

To identify a classification whose characteristics you want to extract:

1. Open the CMMS Classification Type record representing the item whose characteristics you want to extract (i.e., Equipment or Functional Location).

2. On the **Associated Pages** menu, click the **Synchronize Classifications** link.

   CMMS Classification records are created automatically and linked to the CMMS Classification Type record. Each CMMS Classification record is created from a current classification that exists in the specified SAP system (using the CMMS System field in the CMMS Classification Type record). The CMMS Classification records are displayed as detail records on the Classification Type Classifications datasheet, as shown in the following image.

3. In the **CMMS Classification** detail grid, in the rows representing the classifications whose characteristics you want to extract, select the **Extract From CMMS System** check box.

4. On the **Common Tasks** menu, click the **Save** link.

    The CMMS Classification records are saved. At this point in the configuration process, you will need to [select the specific characteristics that you want to extract](#).

Identifying Characteristics You Want to Extract

Note: You can complete the following instructions successfully only if the SAP Interfaces - Technical Characteristics license is active.

To identify a characteristic that you want to extract:

1. Open the CMMS Classification record representing the classification whose characteristics you want to extract.

2. On the **Associated Pages** menu, click the **Synchronize Characteristics** link.

   CMMS Characteristic records are created automatically and linked to the CMMS Classification record. Each CMMS Characteristic record is created from a current characteristic that exists in the specified SAP system (using the CMMS System field in the CMMS Classification record). The CMMS Characteristic records are displayed as detail records on the Classification Characteristics datasheet, as shown in the following image.

3. In the **CMMS Characteristic** detail grid, in the rows representing the characteristics that you want to extract, select the **Extract From CMMS System** check box.

4. On the **Common Tasks** menu, click the **Save** link.

    The CMMS Characteristic records are saved.

I Want to Stop Extracting ALL Characteristics for a Classification

> **Note:** You can complete the following instructions successfully only if the SAP Interfaces - Technical Characteristics license is active.

To identify a classification whose characteristics you no longer want to extract:

1. Access the CMMS Classification record representing a classification whose characteristics you want to stop extracting from SAP. To access the record, you have two options:

   - Open the record by itself in the Record Manager.

   -or-

   - Open the master CMMS Classification Type record to which it is linked and view the CMMS Classification record as a detail record in the master/detail datasheet.

2. Clear the **Extract From CMMS System** check box.

3. On the **Common Tasks** menu, click the **Save** link.

   The CMMS Classification record is saved, and the **Extract From CMMS System** check box is cleared automatically in all CMMS Characteristic records that are linked to the CMMS Classification record. When you run the corresponding characteristic extraction interface, the characteristics whose **Extract From CMMS System** check box was cleared automatically will not be extracted.

I Want to Stop Extracting a Specific Characteristic

> **Note:** You can complete the following instructions successfully only if the SAP Interfaces - Technical Characteristics license is active.

To identify a specific characteristic that you no longer want to extract:

1. Access the CMMS Characteristic record representing the characteristic that you want to stop extracting from SAP. To access the record, you have two options:

   - Open the record by itself in the Record Manager.

   -or-

   - Open the master CMMS Classification record to which it is linked and view the CMMS Characteristic record as a detail record in the master/detail datasheet.

2. Clear the **Extract From CMMS System** check box.

3. On the **Common Tasks** menu, click the **Save** link.

   The CMMS Characteristic record is saved. When you run the corresponding characteristic extraction interface, the characteristic will not be extracted.

Refreshing Meridium APM to Reflect Current SAP Classifications and Characteristics

In some cases, after CMMS Classification and CMMS Characteristic records have been created in the Meridium APM system, classifications and characteristics may get added or deleted in SAP. If this happens, you can refresh your Meridium APM system so that it accurately reflects the most current data in SAP.

> **Note:** You can complete the following instructions successfully only if the SAP Interfaces - Technical Characteristics license is active.

To update the Meridium APM system to reflect current SAP classifications:

1. Open in the Record Manager the CMMS Classification Type record whose CMMS Classification records you want to update.

2. On the **Associated Pages** menu, click the **Synchronize Classifications** link.

   The Meridium APM system checks the SAP system for any new or deleted classifications that are associated with the specified classification type (i.e., *Equipment* or *Functional Location*). If any classifications have been deleted in SAP, the corresponding CMMS Classification record is deleted. Likewise, if any classifications have been added, a new CMMS Classification record is created. Finally, if any classification descriptions have changed in SAP, the corresponding CMMS Classification record is updated with the new description.

To update the Meridium APM system to reflect current SAP characteristics:

1. Open in the Record Manager the CMMS Classification record whose CMMS Characteristic records you want to update.

2. On the **Associated Pages** menu, click the **Synchronize Characteristics** link.

   The Meridium APM system checks the SAP system for any new or deleted characteristics that are associated with the classification. If any characteristics have been deleted in SAP, the corresponding CMMS Characteristic record is deleted. Likewise, if any characteristics have been added, a new CMMS Characteristic record is created. Finally, if any characteristic descriptions have changed in SAP, the corresponding CMMS Characteristic record is updated with the new description.

About Classification Hierarchies

In SAP, for any given class, one or more if its characteristics can be inherited from another class. For example, consider the following SAP classes:

- EQ_CLASS_0001
- Fasteners
- Bolts
- Hexagonal Bolt

As shown in the following image, *EQ_CLASS_0001* has four unique characteristics.

As shown in the following image, *Fasteners* also has its own unique set of four characteristics.

Bolts, however, inherits all of the characteristics from EQ_CLASS_0001 and FASTENERS. In addition, *Bolts* has its own two unique characteristics: HEAD_SHAPE and BOLT_TYPE.

Class	BOLTS						
Class type	002	Equipment Class					
Change Number							
Valid from	30.07.2012	Validity					

Basic data / **Keywords** / **Char.** / **Texts**

Characteristic	Description	Data...	N...	D...	Unit	R..
SAP_EHS_1017_003_TEST	st type	CHAR	30	0		☐
OPH	Operating Hours	NUM	10	0	h	☐
LOCAL_REG_NUM	Local Registration Numb...	CHAR	30	0		☐
COLOR	Color	CHAR	25	0		☐
NUMBEROFTHREADS	Number of Threads	NUM	10	0		☐
THREAD_TYPE	THREAD TYPE	CHAR	5	0		☐
LENGTH	Length	NUM	3	2	cm	☐
FASTENER_DIAMETER	Diameter	NUM	2	1	cm	☐
HEAD_SHAPE	HEAD SHAPE	CHAR	10	0		☐
BOLT_TYPE	tYPE OF bOLT	CHAR	10	0		☐

Finally, *Hexagonal Bolt* also inherits all of the characteristics from EQ_CLASS_0001, FASTENERS, and BOLTS. It also has its own unique characteristic: TOLERANCE.

Class	HEXAGONALBOLT	
Class type	002	Equipment Class
Change Number		
Valid from	30.07.2012	Validity

Basic data | **Keywords** | **Char.** | **Texts**

Characteristic	Description	Data...	N...	D...	Unit	R..
HEAD_SHAPE	AD SHAPE	CHAR	10	0		
BOLT_TYPE	tYPE OF bOLT	CHAR	10	0		
SAP_EHS_1017_003_TE…	Test type	CHAR	30	0		
OPH	Operating Hours	NUM	10	0	h	
LOCAL_REG_NUM	Local Registration Numb…	CHAR	30	0		
COLOR	Color	CHAR	25	0		
NUMBEROFTHREADS	Number of Threads	NUM	10	0		
THREAD_TYPE	THREAD TYPE	CHAR	5	0		
LENGTH	Length	NUM	3	2	cm	
FASTENER_DIAMETER	Diameter	NUM	2	1	cm	
TOLERANCE	tolerance	NUM	3	0	%	

Using these SAP classes, in the Meridium APM system, if you were to select the **Extract From CMMS System** check box for the HEXAGONALBOLT class:

Classification for Class Type

	Class Group	Classification	Classification Description	Extract From CMMS System
	MI_EQUIP00	BOLTS	BOLTS	☐
		CITY_BICYCLES	City bikes	☐
	FKL_ALM	EQ_CLASS_0002	Class for Equipment Type 2	☐
	FKL_ALM	INSPECTION_CLASS_1	Class for Inspection Type Equipments	☐
		EQCLASS1	class for testing	☐
		EQ_TEST	Equipment class for testing	☐
		EQCLASS	Equipment Test Classifictaion	☐
	MI_EQUIP00	FASTENERS	FASTENERS	☐
	MI_EQUIP00	HANGERSCREW	Hanger Screw	☐
	MI_EQUIP00	HEADBOLTS	HEAD BOLTS	☐
		HEATEXCHANGERS	Heat Exchangers	☐
	MI_EQUIP00	HEXCAPSCREWS	Hex cap screws	☐
▶	MI_EQUIP00	HEXAGONALBOLT	Hexagonal Bolt	☑

...when you clicked the **Synchronize Characteristics** link while viewing the *HEXAGONALBOLT* CMMS Classification record, the following CMMS Characteristic records would be created automatically:

As highlighted in the following image, you can see from the **Classification** column that some of the characteristics are inherited from other classes.

Specifically, using the highlighting in the image, you can see that:

- The following characteristics are inherited from the class *EQ_CLASS_0001* (yellow highlighting):
    - COLOR
    - LOCAL_REG_NUM
    - OPH
    - SAP_EHS_1017_003_TEST_TYPE
- The following characteristics are inherited from the class *FASTENERS* (pink high-lighting):
    - FASTENER_DIAMETER
    - LENGTH

- - NUMBEROFTHREADS
  - THREAD_TYPE
- The following characteristics are inherited from the class *BOLTS* (blue highlighting):
  - HEAD_SHAPE
  - BOLT_TYPE
- The characteristic TOLERANCE is assigned directly to the class *HEXAGONALBOLT* (no highlighting).

If you selected the **Extract From CMMS System** check box for ALL of these characteristics, if you were to run the Equipment Characteristics Extraction Interface *without* filters, ALL of these characteristics would be extracted. The following image shows a subset of these Technical Characteristic records in query results.

Name	△	Value
BOLT_TYPE		HEX
BOLT_TYPE		SHOULDER
COLOR		RED
COLOR		BLACK
COLOR		BLUE
COLOR		RED
FASTENER_DIAMETER		7
FASTENER_DIAMETER		2
FASTENER_DIAMETER		3
FASTENER_DIAMETER		9.9
HEAD_SHAPE		ROUND
HEAD_SHAPE		ROUND
LENGTH		2
LENGTH		6
LENGTH		4
LENGTH		5.25
LOCAL_REG_NUM		123
LOCAL_REG_NUM		4521
NUMBEROFTHREADS		15
NUMBEROFTHREADS		3
NUMBEROFTHREADS		6
NUMBEROFTHREADS		1
OPH		8
OPH		20
OPH		1000
THREAD_TYPE		12
THREAD_TYPE		8
THREAD_TYPE		2

If, however, you were to filter the report to extract only characteristics belonging to the *HEXAGONALBOLT* class:

...only characteristics that are assigned *directly* at the HEXAGONALBOLT level would be extracted. In other words, because only TOLERANCE is assigned directly to HEXAGONALBOLT, only the TOLERANCE characteristic would be extracted. The following image shows these Technical Characteristic records in query results.

Name	Value
TOLERANCE	21
TOLERANCE	12

Requirements for Creating SAP Notifications

In order to create an SAP Notification from a Meridium APM Recommendation record, at a minimum, your database must contain an SAP System record that defines the connection information to your SAP system. If the SAP Interfaces and the Oracle EBS eAM Interfaces licenses are both active, in addition to this requirement, certain additional conditions must be met regarding the SAP System and CMMS System records that exist in the database. The exact conditions that must be met depends on the following main factors:

- Whether or not the Recommendation record is linked to an Equipment or Functional Location record.
- Whether or not that Equipment or Functional Location record is linked to a Site Reference record.

The following scenarios describe the conditions that must exist in each of these cases.

Scenario A: Recommendation Record Is not Linked to an Equipment or Functional Location Record

In this scenario, you can create a Notification successfully only if *both* of the following conditions are true:

- Either NO CMMS System records exist or none of the existing CMMS System records contain the value *True* in the Enabled field nor the value *True* in the Is Default field.

  -and-

- At least one of the existing SAP System records contains the value *True* in the Default SAP System field. The Notification will be created in the SAP System represented by this SAP System record.

Scenario B: Recommendation Record IS Linked to an Equipment or Functional Location Record

Option 1: The Equipment or Functional Location record IS linked to a Site Reference record

In this scenario, you can create a Notification successfully only if NO CMMS System records exist in the database. In addition, if the Site Reference record is linked to an SAP System record, the Notification will be created automatically in the SAP system represented by that SAP System, regardless of whether or not the Default SAP System field in that record contains the value *True*. If, however, the Site Reference record is not linked to an SAP System record, the requirements in option 2 must be met.

Option 2: The Equipment or Functional Location record is not linked to a Site Reference record

In this scenario, you can create a Notification successfully only if *both* of the following conditions are true:

- Either NO CMMS System records exist or none of the existing CMMS System records contain the value *True* in the Enabled field nor the value *True* in the Is Default field.

  -and-

- At least one of the existing SAP System records contains the value *True* in the Default SAP System field. The Notification will be created in the SAP System represented by this SAP System record.

Configuring Meridium APM to Create Notifications from Recommendation Records

The SAP Interfaces feature allows you to create Recommendation records in Meridium APM that will be used to create SAP Notifications automatically. For a Recommendation record to generate an SAP Notification automatically, the Create Work Request field must exist on the Recommendation datasheet. This field is available on the baseline datasheets for the baseline Recommendation families from which you are allowed to create SAP Notifications.

If you want to generate SAP Notifications from Recommendation records that belong to *customer-defined* subfamilies of the root Recommendation family, in addition to implementing the correct rules (for an example of the rules that you will need to implement, you can look at any active baseline Recommendation family), you will need to add the Create Work Request field to the desired datasheets for that family.

Note that you can create multiple types of SAP Notifications (e.g., M1) from Recommendation records. By default, Meridium APM creates M1 Notifications. If you want to create different Notification types, you will need to:

- Add the Notification Type field to the datasheet.
- Configure the Notification Type field to accept values other than M1. Note, however, that in the baseline SAP Interfaces product, this field is *disabled*. If desired, you could configure it to be enabled so that users can type a value directly in the **Notification Type** cell on the datasheet. You might also consider creating a Valid Values rule that provides a list of acceptable values so that users can select the desired value from the list.

About the Query Get SAP ID for Equipment

When you create an SAP Notification from a Meridium APM Recommendation record, the Meridium APM system locates the Equipment and Functional Location records to which the Recommendation record is linked. After it locates these records, it determines which value in each record should be used to populate the Equipment or Functional Location field in the Notification.

To find the Equipment and Functional Location records to which the Recommendation record is linked, the Meridium APM system looks for any predecessor record that is linked to the Recommendation record through the Has Recommendations relationship family. Then, the Meridium APM system passes the Entity Key of any records it finds in this relationship into the prompts in the following queries, which are stored in the Catalog folder //Public/Meridium/Modules/SAP Integration Interfaces/Queries:

- **Get SAP ID for Equipment:** Returns the value in the Equipment ID field in the record with the provided Entity Key. In the baseline Meridium APM database, this query returns records in the Equipment family.
- **Get SAP ID for Functional Location:** Returns the value in the Functional Location field in the record with the provided Entity Key. In the baseline Meridium APM database, this query returns records in the Functional Location family.

When the Meridium APM system runs the queries, it provides the prompts with the Entity Keys of the predecessor records that are linked to the Recommendation record through the Has Recommendations relationship:

- If any of the predecessor Entity Keys identify a record that belongs to the Equipment family, the Equipment ID field in the Equipment record will be used to populate the Equipment field in the Notification.
- If any of the predecessor Entity Keys identify a record that belongs to the Functional Location family, the Functional Location field in the Functional Location record will be used to populate the Functional Location field in the Notification.

For example, suppose a Recommendation record is linked to the following records:

- Equipment record with the value *HX-112* in the Equipment ID field.
- Functional Location record the value *FL-101* in the Functional Location field.

If you create a Notification record from this Recommendation record, Meridium APM will:

- Identify the Entity Key of the Equipment record HX-112.
- Identify the Entity Key of the Functional Location record FL-101.
- Supply the Entity Keys to the prompt in the *Get SAP ID for Equipment* and *Get SAP ID for Functional Location* queries.
- Identify the value in the Equipment ID field in the Equipment record that is returned by the Get SAP ID for Equipment query: *HX-112*.

- Identify the value in the Functional Location field in the Functional Location record that is returned by the Get SAP ID for Functional Location query: *FL-101*.
- Populate the Equipment field in the Notification with *HX-112*.
- Populate the Functional Location field in the Notification with *FL-101*.

About Identifying Your SAP Systems

In order for the Meridium APM system to send and receive data to and from your SAP systems, the Meridium APM system must be able to identify which SAP systems you are using. The following table lists the items that are used to identify your SAP systems, the workflows in which those items are used, and notes about which items you must configure manually.

Item	Purpose	Requires Configuration?
SAP System records	Identifies the SAP systems *to which* you want to send data when you complete any of the following tasks: • Create or update SAP Notifications from Meridium APM Recommendation records (if you are not using an SAP PI Server). • Create or update SAP Confirmations from Meridium APM Confirmation records. • Create SAP Orders from Meridium APM Task records. SAP System records are also used when you extract Equipment or Functional Location characteristics from SAP.	✅ You must create SAP System records manually.

Item	Purpose	Requires Configuration?
Meridium APM Core SAP Connector Service -and- The file CSCS.exe.config	Identifies the SAP systems *from which* you want to receive data when you complete any of the following tasks: • Create Meridium APM Task records from SAP Maintenance Plans (and their associated Orders). • Execute the report /MIAPM/WH_HARMONIZATIO-N.	✔ You must modify the file CSCS.exe.config and then start the Meridium APM Core SAP Connector Service.
The file Meridium.SAP.CertifiedInterface.Config.xml	Identifies the SAP PI Server *to which* you want to send data when you create or update SAP Notifications from Meridium APM Recommendation records if you ARE using an SAP PI Server.	✔ You must modify the XML file.

How are SAP System Records Used?

When you transfer data from Meridium APM to SAP during any of the following work-flows, the Meridium APM system uses SAP System records to determine which SAP sys-tem to use:

- Creating or updating SAP Notifications from Meridium APM Recommendation records (if you are not using an SAP PI Server).
- Creating or updating SAP Confirmations from Meridium APM Confirmation records.
- Creating SAP Orders from Meridium APM Task records.

In addition, SAP System records are used by the Equipment Characteristics Extraction Interface and the Functional Location Characteristics Extraction Interface in both of the following workflows:

- When you create CMMS Classification Type records, SAP System records are used to determine which SAP system information to use to populate the CMMS System ID field.
- When you refresh the Meridium APM system to reflect the current SAP clas-sifications and characteristics, SAP System records are used to determine the SAP system in which to look for the current classifications and characteristics.

SAP System records can be linked to Site Reference records, or you can specify a default SAP system. Consider the following scenarios.

Scenario A: Site Reference Record Used (Standard Practice)

In this scenario, the Equipment or Functional Location record is linked to a Site Refer-ence record that is linked to an SAP System record.

In this scenario, the Meridium APM system will use the SAP System record to which the Site Reference record is linked.

> **Note:** This scenario reflects the standard SAP Interfaces practice.

Scenario B: Default SAP System Field Used (Non-Standard Practice)

In this scenario, the Equipment or Functional Location record is *not* linked to a Site Reference record.

In this case, the Meridium APM system will use the SAP System record whose Default SAP System field contains the value *True*.

> **Note:** This scenario does *not* reflect the standard SAP Interfaces practice, but because it is an option and will work as described in this topic, it is explained in the documentation.

If *no* SAP System records contain the value *True* in the Default SAP System field, an error message will appear, and you will be unable to transfer the data to SAP.

If your SAP landscape includes multiple SAP systems, you can create multiple SAP System records, but only one of these records can be designated as the default record. If you want some users to be able to transfer data to a separate SAP system, you will need to make sure that your SAP System records are linked to Site Reference records, which are also linked to the appropriate Equipment and Functional Location records.

Creating SAP System Records

To create an SAP System record:

1. On the Meridium APM Framework toolbar, click the **New** button.

   The **Select Family** dialog box appears.

2. In the list, select **SAP System**.

   A new SAP System record appears in the Record Manager.

3. In the **Name** text box, type the name of the SAP system.

   We recommend that you use the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <CLIENT> is the Client number. By doing so, the value in the **Name** field will match the value that will be populated automatically in the **System ID** field when you test the connection to the SAP system.

4. If this SAP system is the system to and from which you want to send data by default, select the **Default SAP System?** check box.

5. In the **User ID** text box, type a valid User ID that you can use to log in to the SAP system.

6. In the **Password** text box, click the ⋯ button.

   The **Enter SAP System Password** dialog box appears.

7. In the **Enter Password** text box, type the password that is associated with the specified user ID.

8. In the **Confirm Password** text box, retype the password that you typed in the **Enter Password** text box.

9. Click **OK**.

   The password is saved. If needed, you can change the password later.

10. In the **Connection String** text box:

    a. Replace the text **SAP_SERVER_IP** with the IP address of the SAP Server.

    b. Replace the text **SAP_SYSTEM_NUMBER** with the SAP System number.

    c. Replace the text **SAP_CLIENT_NUMBER** with the SAP Client number.

    d. Delete all angle brackets.

11. In the **ITS URL** text box:

    a. Replace the text **its_or_integrated_its_server_url** with the ITS Server information. To locate the ITS Server information:

       i. In SAP, run the following transaction: **SE80**

          > **Note:** If you do not have access to this transaction, contact your SAP BASIS team for assistance.

       ii. On the toolbar, click **Utilities**, and then click **Settings**.

       iii. On the upper-right corner of the screen, click ▶ several times until the **Internet Transaction Server** tab appears.

       iv. Click the **Internet Transaction Server** tab.

          The ITS Server information that you must type in the **ITS URL** text box in Meridium APM is <Log><Path>, where <Log> is the text in the **Log** section and <Path> is the text in the **Path** section.

b. Delete the angle brackets.

c. At the end of the URL, type: `webgui/!`

For example, the ITS URL that corresponds with the values in the image above is *http:// DOCROAECC6.meridium.com:8000/sap/bc/gui/sap/its/webgui/!*

12. On the **Common Tasks** menu, click the **Save** link.

The SAP System record is saved.

Testing the Connection Defined in an SAP System Record

After you have created and saved an SAP System record, you can test the connection information that you provided in the Connection String field.

To test the connection to an SAP system:

1. In the Meridium APM Framework application, open the SAP System record whose connection information you want to test.

2. On the **Associated Pages** menu, click the **Test Connection** link.

   The connection information that you provided is tested, and a message appears indicating whether or not the test was successful. In addition, the System ID field is populated automatically with the name of the SAP system, using the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <CLIENT> is the Client number.

Associating an SAP System with a Site

To associate an SAP system with the site that uses it:

1. In the Meridium APM Framework, perform a search for the Site Reference record representing the site with which you want to associate an SAP system.

2. Open the desired Site Reference record.

   The Site Reference record appears in the Record Manager.

3. Using the shortcut menu in the **Record Explorer** pane, link the Site Reference record to the desired SAP System record.

   The SAP System record is linked to the Site Reference record.

About the File CSCS.exe.config

When you install the Meridium APM Application Server, the file CSCS.exe.conf is created automatically and stored in the folder <root>\ApplicationServer\Services, where <root> is the root drive and folder into which the Meridium APM Application Server has been installed.

The file CSCS.exe.config stores information that allows the Meridium APM system to communicate with your SAP System when you complete either of the following work-flows:

- **Run the report /MIAPM/WH_HARMONIZATION.** When the report is run, it will validate Meridium APM Work History and Work History Detail records against SAP Notifications and Orders to determine which Meridium APM Work History and Work History Detail records need to be deleted so that the Meridium APM database will not contain duplicate records.

- **Execute the Work Management Interface to create and update Inspection Task and Calibration Task records automatically.** Certain actions that are performed in SAP will trigger Meridium APM to create or update Inspection Task and Calibration Task records. The SAP code checks periodically to see if any of these actions have been taken in SAP. If they have, the Meridium Core SAP Connector Service will be used to trigger the appropriate actions in the Meridium APM system.

Before you run the report /MIAPM/WH_HARMONIZATION or execute the Work Management Interface, you *must* modify this file to define the SAP systems that you are using.

The file also contains settings that are used to determine how often the Meridium Core SAP Connector Service will try to reconnect to your SAP Servers if a connection cannot be established upon the first attempt. Typically, SAP users perform SAP system maintenance on a regular schedule (e.g., every Saturday night). This maintenance can take a significant amount of time, depending upon various factors (e.g., the amount of data in your SAP database). The baseline file is configured to account for this SAP system downtime, and it contains settings that specify that:

- When the service cannot connect to the SAP system, it should try to reconnect a maximum of six times.

- Ten minutes should pass between each of those six reconnection attempts.

> **Note:** If the Meridium Core SAP Connector Service loses its connection to an SAP Server, when it successfully reconnects to that server, an informational message will be logged in the Windows Event Log.

You can modify the file at any time if you want to change the default setting for the number of reconnect attempts or the number of seconds between reconnection attempts.

> **IMPORTANT:** Whenever you modify this file, you must restart the Meridium Core SAP Connector Service for your changes to be applied.

Because this file is stored on the Meridium APM Application Server, it will be deleted whenever you uninstall or upgrade the Meridium APM Application Server.

Because you cannot modify the original file that is installed by the Meridium APM Server and Add-ons installer, we recommend that you make a copy of it, modify the copy, and then replace the originally installed version with the copied version.

Defining Your SAP Systems

To modify the file CSCS.exe.config to define the SAP systems that you are using:

1. On the Meridium APM Application Server, navigate to the folder **C:\Program Files\Meridium\Services**.

2. Open the file **CSCS.exe.config** in an application that you can use to modify XML script (e.g., Notepad).

3. In the file, within the **</appSettings>** tags, locate the following text:

   <!--add key="SAP_SYSTEM_NAME" value="TraceLevel=1;ProgramID=MERIDIUM_ PROGRAM_ID;GWHost=IP_ADDRESS;GWServer=sapgw00" /-->

4. Replace **SAP_SYSTEM_NAME** with the name of your SAP Server.

5. Replace **MERIDIUM_PROGRAM_ID** with the value that you typed in the **Program ID** text box when you created the RFC destination. If you followed the instructions in this documentation, this value will be *Meridium APM*, as shown in the following image.

   > **Note:** This value is *case-sensitive*, meaning that you must type it using the exact case that is specified for the Program ID of the RFC destination.

6. Replace **IP_ADDRESS** with the IP address of the specified SAP Server.

7. Replace **00** (in the value *sapgw00*) with the system number of the specified SAP Server.

8. At the beginning of the line, delete the following characters: **!--**

9. At the end of the line, delete the following characters: **--**

10. Save the file.

    Your settings are applied.

Changing the Number of Times the Service Will Try to Connect Before Stopping Automatically

To change the number of times the service will try to connect before stopping automatically:

1. On the Meridium APM Application Server, navigate to the folder **C:\Program Files\Meridium\Services**.

2. Open the file **CSCS.exe.config** in an application that you can use to modify XML script (e.g., Notepad).

3. In the file, within the **</appSettings>** tags, locate the following text:

   <add key="reconnectAttempts" value="6" />

4. Replace **6** with a number indicating the number of times the Meridium Core SAP Connector should try to reconnect to each of the SAP Servers (identified by the third *add key* setting) before the Meridium Core SAP Connector Service is stopped automatically.

   Regardless of how many SAP Servers you define in the file, the **reconnectAttempts** key needs to exist only once. The value that is specified for this key will apply to ALL SAP Servers within the file. The **reconnectAttempts** key and the **reconnectDelay** key work together, which is best understood through an example.

   > Œ**Hint:** To specify that you want the service to attempt to reconnect an infinite number of times, you can change the value to any negative number.

   The following image shows the **reconnectAttempts** key set to **10**.

   ```
   CSCS.exe - Notepad
   File   Edit   Format   View   Help
   <configuration>
     <configSections>
       <section name="queueConfiguration" type="Meridium.Core.Queueing.QueueConfiguration, Meridium.Core" restartOnExter
     </configSections>
     <queueConfiguration>
       <queueSettings>
         <add key="PolicyDataChangeFilter" type="ENTITY" filter="Meridium.Policies.Triggering.EntitySubscriptionFilter,
         <add key="AHMDataChangeFilter" type="ENTITY" filter="Meridium.AHI.Client.EntitySubscriptionFilter, Meridium.AH
       </queueSettings>
     </queueConfiguration>
         <appSettings>
       <add key="reconnectAttempts" value="10"/>
       <add key="reconnectDelay" value="600"/>
       <!--add key="SAP_SYSTEM_NAME" value="TraceLevel=1;ProgramID=MERIDIUM_PROGRAM_ID;GWHost=IP_ADDRESS;GWServer=sapgw
     </appSettings>
   </configuration>
   ```

5. Save the file.

   Your settings are applied.

Changing the Number of Seconds That Will Pass Between Connection Attempts

To change the number of seconds that will pass between connection attempts:

1. On the Meridium APM Application Server, navigate to the folder **C:\Program Files\Meridium\Services**.

2. Open the file **CSCS.exe.config** in an application that you can use to modify XML script (e.g., Notepad).

3. In the file, within the **</appSettings>** tags, locate the following text:

   <add key="reconnectDelay" value="600" />

4. Replace **600** with a number indicating the number of seconds that will pass between connection attempts.

   Regardless of how many SAP Servers you define in the file, the reconnectDelay key needs to exist only once. The value that is specified for this key will apply to ALL SAP Servers within the file. The reconnectDelay key and the reconnectAttempts key work together, which is best understood through an example.

   > Œ**Hint:** To specify that you want the service to attempt to reconnect an infinite number of times, you can change the value to any negative number.

   The following image shows the **reconnectAttempts** key set to **10**.

5. Save the file.

   Your settings are applied.

An Example of the File CSCS.exe.config

The following image illustrates an excerpt of the file CSCS.exe.config, where it has been configured to:

- Connect to multiple SAP Servers: *Server A* and *Server B*.

- Increase the number of reconnection attempts to ten (10).

- Increase the amount of time between reconnection attempts to 900 seconds (fifteen minutes).

```
<add key="reconnectAttempts" value="10"/>
<add key="reconnectDelay" value="900"/>
<add key="Server A" value="TraceLevel=1;ProgramID=MERIDIUMAPM;GWHost=11.22.33.444;GWServer=sapgw00" />
<add key="Server B" value="TraceLevel=1;ProgramID=MERIDIUMAPM;GWHost=11.22.33.555;GWServer=sapgw00" />
```

Using the settings of ten reconnect attempts and 900 seconds (fifteen minutes) between those attempts, if the connection to Server A is lost, the Meridium Core SAP Connector Service will try to reconnect six times, where each connection attempt occurs fifteen minutes after the last connection attempt. If a connection cannot be established to Server A after six attempts, the Meridium Core SAP Connector Service will stop trying to connect to Server A. It will, however, continue to connect to Server B until Server B becomes unavailable. If for any reason Server B also becomes unavailable, the Meridium Core SAP Connector Service will try to reconnect to it six times, where each attempt occurs fifteen minutes after the last attempt. If a connection cannot be established to Server B after six attempts, the Meridium Core SAP Connector Service will be stopped automatically and will need to be restarted manually. Whenever the Meridium Core SAP Connector Service is stopped automatically, a corresponding message will be recorded in the Windows Event Log.

About the Meridium Core SAP Connector Service

The Meridium Core SAP Connector Service is used when you complete either of the following steps:

- **Run the report /MIAPM/WH_HARMONIZATION.** When the [report is run](), it will validate Meridium APM Work History and Work History Detail records against SAP Notifications and Orders to determine which Meridium APM Work History and Work History Detail records need to be deleted so that the Meridium APM database will not contain duplicate records.

- **Execute the Work Management Interface to create and update Inspection Task and Calibration Task records automatically.** Certain actions that are performed in SAP will trigger Meridium APM to create or update Inspection Task and Calibration Task records. The SAP code checks periodically to see if any of these actions have been taken in SAP. If they have, the Meridium Core SAP Connector Service will be used to trigger the appropriate actions in the Meridium APM system.

The Meridium Core SAP Connector Service is installed with the Meridium APM Application Server as a *manual* service; it must be started manually. Before you run the report /MIAPM/WH_HARMONIZATION or begin using the Work Management Interface within the SAP Interfaces, you may want to verify that the service is running. And if you encounter any problems with the communication between Meridium APM and the SAP system, you should check to make sure that the service has not been stopped.

> **IMPORTANT:** The Meridium Core SAP Connector Service must be restarted whenever you [modify the file CSCS.exe.config]().

Verifying that the Meridium Core SAP Connector Service is Connected to SAP

After you have modified the file CSCS.exe.config and confirmed that the Meridium Core SAP Connector Service is running, you can verify that the service is correctly connected to SAP.

To verify that the Meridium Core SAP Connector Service is connected to SAP:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain RFC Destination** row, click the ⊕ button.

   The **Display and maintain RFC destinations** screen appears.

4. In the list, expand **TCP/IP connections**, and then double-click **MeridiumAPM**.

The **RFC Destination** screen appears, displaying the contents of the *Meridium APM* RFC destination.

5. Click the **Test connection** button.

The **RFC - Connection Test** screen appears, displaying the results of the connection test. If the test was successful, you will see a screen similar to the one in the following image.

If test was not successful, you will see a screen similar to the one in the following image, where the specific text that you see will be different depending upon the cause of the issue.

If the connection test failed, an information message will be logged in the Windows Event Log *Application*, which is located under the folder **\Windows Logs**. For example, in the following image, you can see that the information message *CSCS: Stopping loop at user request* was logged at 9:09:42 AM on 7/30/2012.

> Œ**Hint:** This particular message appears when the Meridium Core SAP Connector Service is not started.

Modifying the Windows Services File

If you are using the Work Management Interface and the SAP GUI is not installed on the Meridium APM Application Server, before users begin using the Work Management Interface, you will need to modify the Windows Services file by adding entries that specify the port numbers and connection types that should be used when connecting to the SAP System.

To modify the Windows Services file:

1. On the Meridium APM Application Server, navigate to the folder **C:\Windows\System32\drivers\etc**.

2. Open the file **Services**.

3. Copy the following text:

    ```
    sapdp00  3200/tcp
    sapdp01  3201/tcp
    sapdp02  3202/tcp
    sapdp03  3203/tcp
    sapdp04  3204/tcp
    sapdp05  3205/tcp
    sapdp06  3206/tcp
    sapdp07  3207/tcp
    sapdp08  3208/tcp
    sapdp09  3209/tcp
    sapdp10  3210/tcp
    sapdp11  3211/tcp
    sapdp12  3212/tcp
    sapdp13  3213/tcp
    sapdp14  3214/tcp
    sapdp15  3215/tcp
    sapdp16  3216/tcp
    sapdp17  3217/tcp
    sapdp18  3218/tcp
    sapdp19  3219/tcp
    sapdp20  3220/tcp
    sapdp21  3221/tcp
    sapdp22  3222/tcp
    sapdp23  3223/tcp
    sapdp24  3224/tcp
    sapdp25  3225/tcp
    sapdp26  3226/tcp
    sapdp27  3227/tcp
    sapdp28  3228/tcp
    sapdp29  3229/tcp
    sapdp30  3230/tcp
    sapdp31  3231/tcp
    sapdp32  3232/tcp
    sapdp33  3233/tcp
    sapdp34  3234/tcp
    ```

```
sapdp35  3235/tcp
sapdp36  3236/tcp
sapdp37  3237/tcp
sapdp38  3238/tcp
sapdp39  3239/tcp
sapdp40  3240/tcp
sapdp41  3241/tcp
sapdp42  3242/tcp
sapdp43  3243/tcp
sapdp44  3244/tcp
sapdp45  3245/tcp
sapdp46  3246/tcp
sapdp47  3247/tcp
sapdp48  3248/tcp
sapdp49  3249/tcp
sapdp50  3250/tcp
sapdp51  3251/tcp
sapdp52  3252/tcp
sapdp53  3253/tcp
sapdp54  3254/tcp
sapdp55  3255/tcp
sapdp56  3256/tcp
sapdp57  3257/tcp
sapdp58  3258/tcp
sapdp59  3259/tcp
sapdp60  3260/tcp
sapdp61  3261/tcp
sapdp62  3262/tcp
sapdp63  3263/tcp
sapdp64  3264/tcp
sapdp65  3265/tcp
sapdp66  3266/tcp
sapdp67  3267/tcp
sapdp68  3268/tcp
sapdp69  3269/tcp
sapdp70  3270/tcp
sapdp71  3271/tcp
sapdp72  3272/tcp
sapdp73  3273/tcp
sapdp74  3274/tcp
sapdp75  3275/tcp
sapdp76  3276/tcp
sapdp77  3277/tcp
sapdp78  3278/tcp
sapdp79  3279/tcp
sapdp80  3280/tcp
sapdp81  3281/tcp
sapdp82  3282/tcp
sapdp83  3283/tcp
sapdp84  3284/tcp
sapdp85  3285/tcp
sapdp86  3286/tcp
```

```
sapdp87  3287/tcp
sapdp88  3288/tcp
sapdp89  3289/tcp
sapdp90  3290/tcp
sapdp91  3291/tcp
sapdp92  3292/tcp
sapdp93  3293/tcp
sapdp94  3294/tcp
sapdp95  3295/tcp
sapdp96  3296/tcp
sapdp97  3297/tcp
sapdp98  3298/tcp
sapdp99  3299/tcp
sapgw00  3300/tcp
sapgw01  3301/tcp
sapgw02  3302/tcp
sapgw03  3303/tcp
sapgw04  3304/tcp
sapgw05  3305/tcp
sapgw06  3306/tcp
sapgw07  3307/tcp
sapgw08  3308/tcp
sapgw09  3309/tcp
sapgw10  3310/tcp
sapgw11  3311/tcp
sapgw12  3312/tcp
sapgw13  3313/tcp
sapgw14  3314/tcp
sapgw15  3315/tcp
sapgw16  3316/tcp
sapgw17  3317/tcp
sapgw18  3318/tcp
sapgw19  3319/tcp
sapgw20  3320/tcp
sapgw21  3321/tcp
sapgw22  3322/tcp
sapgw23  3323/tcp
sapgw24  3324/tcp
sapgw25  3325/tcp
sapgw26  3326/tcp
sapgw27  3327/tcp
sapgw28  3328/tcp
sapgw29  3329/tcp
sapgw30  3330/tcp
sapgw31  3331/tcp
sapgw32  3332/tcp
sapgw33  3333/tcp
sapgw34  3334/tcp
sapgw35  3335/tcp
sapgw36  3336/tcp
sapgw37  3337/tcp
sapgw38  3338/tcp
```

```
sapgw39  3339/tcp
sapgw40  3340/tcp
sapgw41  3341/tcp
sapgw42  3342/tcp
sapgw43  3343/tcp
sapgw44  3344/tcp
sapgw45  3345/tcp
sapgw46  3346/tcp
sapgw47  3347/tcp
sapgw48  3348/tcp
sapgw49  3349/tcp
sapgw50  3350/tcp
sapgw51  3351/tcp
sapgw52  3352/tcp
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sapgw67  3367/tcp
sapgw68  3368/tcp
sapgw69  3369/tcp
sapgw70  3370/tcp
sapgw71  3371/tcp
sapgw72  3372/tcp
sapgw73  3373/tcp
sapgw74  3374/tcp
sapgw75  3375/tcp
sapgw76  3376/tcp
sapgw77  3377/tcp
sapgw78  3378/tcp
sapgw79  3379/tcp
sapgw80  3380/tcp
sapgw81  3381/tcp
sapgw82  3382/tcp
sapgw83  3383/tcp
sapgw84  3384/tcp
sapgw85  3385/tcp
sapgw86  3386/tcp
sapgw87  3387/tcp
sapgw88  3388/tcp
sapgw89  3389/tcp
sapgw90  3390/tcp
```

```
sapgw91  3391/tcp
sapgw92  3392/tcp
sapgw93  3393/tcp
sapgw94  3394/tcp
sapgw95  3395/tcp
sapgw96  3396/tcp
sapgw97  3397/tcp
sapgw98  3398/tcp
sapgw99  3399/tcp
```

4. Paste the copied text into the file after the last existing entry.

5. Save the file.

Creating an RFC Destination

To create an RFC destination:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

   Display IMG

   | ☒ 🗒 🖼 | Existing BC Sets | ☞ BC Sets for Activity | ☞ Activated BC Sets for Activity | ℹ️ Release Notes | ≫ |

   Structure
   ▾   Meridium APM Integration
       ▸   Configurations In SAP
       ▸   Execute Reports for Data Extraction
       ▸   System Monitoring and Error Handling

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain RFC Destination** row, click the 🔧 button.

   The **Display and maintain RFC destinations** screen appears.

   Display and maintain RFC destinations

   Create   Change   Delete   Find

   RFC Destinations
         ⊞ R/3 connections
         ⊞ HTTP Connections to Ext. Server
         ⊞ HTTP Connections to R/3 System
         ⊞ Internal connections
         ⊞ TCP/IP connections
         ⊞ Connections via ABAP/4 driver

4. Click the **Create** button.

   The **RFC Destination** screen appears.

5. In the **RFC Destination** text box, type a name for the RFC destination.

6. In the **Description** text box, type a description of the RFC destination.

7. In the **Connection type** text box, type: **T**

8. Click the 💾 button.

9. On the **Technical settings** tab, select the **Registered Server Program** option.

10. On the **Technical settings** tab, in the **Program ID** text box, type: `MeridiumAPM`

When you are finished, the **Technical settings** tab should look like this:

11. Click the 🔲 button.

The RFC destination is saved.

About Identifying Operation Values that Will Trigger the Creation of Task Records

The Work Management Interface allows you to create Inspection Task and Calibration Task records from SAP Maintenance Plans containing Task Lists with Operations. Each Operation on the Task List is used to create a separate Meridium APM Task record. Before you can use the Work Management Interface to create Task records, you must identify which values in an Operation will trigger the creation of which Task records.

The baseline product is configured such that:

- Operations with the control key *ZMI2* will be used to create Calibration Task records.
- Operations with the control key *ZMI1* will be used to create Inspection Task records.

If you want to accept the baseline configuration, before you begin running the Work Management Interface, you will need to complete the following configuration steps manually:

- Create the control keys ZMI1 and ZMI2.
- If you are using an SAP Client *other than* 000, add the appropriate entries to the /MIAPM/TASK_CNF table.

> **Note:** If you are using SAP Client 000, the control keys ZMI1 and ZMI2 are already available in the baseline /MIAPM/TASK_CNF table. In other words, customers using SAP Client 000 will only need to create the control keys before they begin running the Work Management Interface.

You are not required to use the default configuration. If you want to use values in different Operation fields (not control keys) to trigger the creation of Meridium APM Task records, you can do so by adding the appropriate entries to the /MIAPM/TASK_CNF table.

Creating Control Keys

The following instructions assume that you want to create the control keys ZMI1 and ZMI2.

To create the control keys ZMI1 and ZMI2:

1. On the SAP System, run the following transaction: **/nspro**

   The **Customizing: Execute Project** screen appears.

2. Click the **SAP Reference IMG** button.

   The **Display IMG** screen appears.

3. Expand the tree so that it looks like this, where **Plant Maintenance and Customer Service** is on the root level of the tree:

4. In the **Maintain Control Keys** row, click the button.

    The **Change View "Control Keys for Operations": Overview** screen appears.

Change View "Control Keys for Operations": Overvi...

New Entries

Ctrl	Control key description
PD01	PD resource plng "internal processing"
PI01	Process manufacturing
PI02	Process manufacturing with inspection
PI03	Process manuf. with autom. goods receipt
PM01	Plant maintenance - internal
PM02	Plant maintenance - external
PM03	Plant maintenance-External(services)
PM05	Plant maintenance - internal (service)
PP01	Routing/Ref. op. set - internal proc.
PP02	Routing/Ref. op. set - external proc.
PP03	Routing - in-house prod. auto. goods rct
PP04	Routing - in-house prod. with check
PS01	Network - internal processing
PS02	Network - external processing
PS03	Network - general costs activity
PS04	Network - internal processing or costing
PS05	Network - replaced by subnetwork
QM01	Insp. operation: Characteristics
QM02	Insp. operation: Print characteristics
QM03	Insp. operation: Calc. characteristics
QM04	Insp. operation: Calc., conf. characts

5. Click the **New Entries** button. New Entries

The **New Entries: Details of Added Entries** screen appears.

6. In the **Control Key** text box, type: `ZMI1`

7. In the empty text box next to the **Control Key** text box, type: `Meridium APM Inspection Task`

8. Click the ⬙ button.

   The **New Entries: Details of Added Entries** screen appears.

9. In the **Control Key** text box, type: `ZMI2`

10. In the empty text box next to the **Control Key** text box, type: `Meridium APM Calibration Task`

11. Click the 🖫 button.

   The control keys are saved. If you are not using SAP Client 000, you will need to add the corresponding entries to the /MIAPM/TASK_CNF table.

About the /MIAPM/TASK_CNF Table

The /MIAPM/TASK_CNF table allows you to define criteria that will be used to create Inspection Task and Calibration Task records from SAP Operations. The following image illustrates the baseline table in an SAP system whose Client number is *000*. Notice that there are two rows: one for Calibration Task records and one for Inspection Task records. This image illustrates the baseline configuration where Operations with the control key ZMI2 are used to create Calibration Task records and Operations with the control key ZMI1 are used to create Inspection Task records.

When you access the table, you will see a grid, where you can add or remove rows to define the desired criteria. The grid contains the following columns:

- **Family ID:** The Meridium APM Task family whose records will be created using the criteria defined in that row. Each row should contain the value *MI_TASKCALB* (for Calibration Task records), *MI_TASKINSP* (for Inspection Task records), or the ID of another Meridium APM Task family.

- **Group ID:** The ID that you can use to create groups of criteria within the condition that this table creates. When you assign the same Group ID to multiple rows in the /MIAPM/TASK_CNF table, the corresponding values are placed within parentheses in the resulting condition.

- **Pos:** Specifies the placement of the row's criteria within the corresponding group.

- **Table Name:** The name of the SAP table whose field value will be used to trigger the creation of records in the corresponding Meridium APM Task family. You can select *PLAS*, *PLKO*, or *PLPO*.

- **Field Name:** The name of the SAP field whose value will be used to create records in the corresponding Meridium APM Task family. In the baseline table for SAP Client 000 customers, both rows contain the value *STEUS*, which identifies the Control Key field.

- **Logical Operator:** An operator that combines criteria in multiple rows. You can select *AND* or *OR*.

- **Relational Operator:** An operator that defines the condition to apply to the SAP field value identified by that row. You can select any of the following options:

- Equal

- Not Equal

- Greater than Equals To

- Lesser than Equals To

- Greater Than

- Lesser Than

- IN

- Not IN

In the baseline table for SAP Client 000 customers, both rows contain the value *Equals*, which indicates that the value in the Control Key field must *equal* a certain value in order to trigger the creation of Inspection Task or Calibration Task records.

- **Value:** The value used to determine which records will be created in the corresponding Meridium APM Task family. In the baseline table for SAP Client 000 customers:

  - The first row contains the value *ZMI2*, which indicates that the value in the Control Key field must equal *ZMI2*.

  - The second row contains the value *ZMI1*, which indicates that the value in the Control Key field must equal *ZMI1*.

> ŒHint: With a field in this column selected, you can press F4 to see the condition that is created by the criteria that is specified for the corresponding Meridium APM family.

- **UOME ID:** The unit of measure that will used to populate the Desired Interval UOM, Max Interval UOM, and Min Interval UOM fields in the Meridium APM Task record. You can select *DAYS*, *WEEKS*, *MON* (i.e., months), *YEARS*, or anotherunit of measure that you have configured in Meridium APM. In the baseline table for SAP Client 000 customers:

  - The first row contains the value *DAYS*, which indicates that the Meridium APM UOM fields will be populated with the value *DAYS* in Calibration Task records.

  - The second row contains the value *MON*, which indicates that the Meridium APM UOM fields will be populated with the value *MON* in Inspection Task records.

> Note: You can specify only one unit of measure per Task family. If you configure multiple rows for same family, then you can specify the UOM ID in any row of that family.

Adding Entries to the /MIAPM/TASK_CNF Table

To add entries to the /MIAPM/TASK_CNF table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Task Configuration Parameters** row, click the ⊕ button.

   The **Task Configuration** screen appears.

4. In the **APM Data Source** list, select the Meridium APM data source for which you want to identify which Operation values will create which Task records.

5. Click the ⊕ button.

   The **Display View "Meridium Task Configuration Table": Overview** screen appears. The following image illustrates the baseline table in an SAP system whose Client number is *000*. Notice that there are two rows: one for Calibration Task records and one for Inspection Task records. This image illustrates a configuration where Operations with the control key ZMI2 are used to create Calibration Task records and Operations with the control key ZMI1 are used to create Inspection Task records.

6. To specify criteria that will be used to trigger the creation of Calibration Task and Inspection Task records, modify the values in the existing rows, or build on top of the current functionality by adding new rows. This documentation assumes that you are familiar with your SAP data structure and that you know how to define the criteria to achieve the desired result. It may be helpful to refer to an example of the /MIAPM/TASK_CNF Table.

7. Click the 💾 button.

The criteria is saved.

Example of the /MIAPM/TASK_CNF Table

Suppose that the following Task List exists in your SAP System.

Although the list contains three Operations, only the second Operation, *INSPECTION,* is an inspection task. Therefore, you would want to configure the /MIAPM/TASK_CNF table such that when you run the Work Management Interface, a Meridium APM Inspection Task record is created for only that Operation.

The following image illustrates how you might configure the /MIAPM/TASK_CNF table in this scenario.

The first row in this table specifies that the value in the control key field (i.e., the *STEUS* field) of the Operation must equal *ZMI1*. In addition, the second row specifies that the description of the Operation (i.e., value in the *LTXA1* field) must be *INSPECTION.*

The criteria specified for the *MI_TASKINSP* family in this example creates the condition shown in the following image.

The values that you specify in the **Group ID** column and the **Pos** column determine how the criteria in each row is arranged within the condition. In this example, each row is assigned to a different group, so the corresponding criteria is placed within different sets of parentheses. Although it is not shown in this example, if multiple rows were assigned to the *same* group, the value in the **Pos** column would determine the placement of the corresponding row's criteria within the parentheses.

When you run the Work Management Interface, Meridium records are created for only the Operations that meet the specified criteria. Continuing with this example, an Inspection Task record is created for only the *INSPECTION* Operation, as shown in the following image.

Example of the /MIAPM/TASK_CNF Table

Configuring Meridium APM to Transfer Data Between SAP Items and Task Records

If you want to use the SAP Interfaces module to transfer data between SAP items and Meridium APM Task records (Inspection Task records or Calibration Task records), you will need to set the following baseline datasheets as the default datasheets on the Inspection Task and Calibration Task families:

- **Inspection Task for SAP Integration Interfaces:** Defined on the Inspection Task family.
- **Calibration Task for SAP Integration:** Defined on the Calibration Task family.

Configuring Meridium APM to Create Confirmations from Calibration Event Records

To configure Meridium APM to create SAP Confirmations from Calibration Event records:

1. In the Configuration Manager, on the **Entity Family** tab, select the **Calibration, Analog** family (located under Root\Event\Calibration).

2. In the **Tasks** section, click the **Manage Datasheets** link.

   The **Datasheet Builder** window appears.

3. In the row containing the ID **MI_EVCAANLG_SAP_INTEGRATION**, copy the ID.

4. In the row containing the ID **Calibration, Analog MDF**, in the **Custom Form** cell, click the ▤ button.

   The **Custom Form Parameters** dialog box appears.

   In the first row, in the **Value** cell, delete the value, and paste the value that you copied in step 3.

5. Click **OK**.

6. Click the **Close** button to close the **Datasheet Builder** window.

7. Repeat steps 1 through 6 for all other Calibration Event families. Note the following:

   - For the Calibration, Analyzer Multi-Component family, copy the datasheet ID **MI_EVCAANMC_SAP_INTEGRATION**, and then access the **Custom Form Parameters** dialog box for the datasheet with the ID **Calibration, Analyzer Multi-Component MDF**.

   - For the Calibration, Analyzer Single Component family, copy the datasheet ID **MI_EVCAANSC_SAP_INTEGRATION**, and then access the **Custom Form Parameters** dialog box for the datasheet with the ID **Calibration, Analyzer Single Component MDF**.

   - For the Calibration, Discrete family, copy the datasheet ID **MI_EVCADSCT_SAP_INTEGRATION**, and then access the **Custom Form Parameters** window for the datasheet with the ID **Calibration, Discrete MDF**.

   - For the Calibration, Weight Scale family, copy the datasheet ID **MI_EVCAWTSC_SAP_INTEGRATION**, and then access the **Custom Form Parameters** dialog box for the datasheet with the ID **Calibration, Weight Scale MDF**.

Configuring Meridium APM to Create Confirmations from Inspection Event Records

If you want to use the SAP Interfaces module to create SAP Confirmations from Inspection Event records, you will need to set the following baseline datasheets as the default datasheets on the Inspection Event families:

- **Bundle Inspection SAP Integration:** Defined on the Bundle Inspection family.
- **Bundle Sub-Inspection SAP Integration:** Defined on the Bundle Sub-Inspection family.
- **Visual Inspection SAP Integration:** Defined on the Full Inspection family.
- **General Inspection SAP Integration:** Defined on the General Inspection family.
- **Pressure Test Inspection SAP Integration:** Defined on the Pressure Test Inspection family.
- **Pressure Test Sub-Inspection SAP Integration:** Defined on the Pressure Test Sub-Inspection family.

Configuring the Query Get Tasks for Work Order Generation

The query Get Tasks for Work Order Generation, which is stored in the Catalog in the folder \\Public\Meridium\Modules\SAP Integration Interfaces\Queries, is used to determine which Task records to use to create Orders in SAP.

The query contains the *Task* query source. For each record that is returned by the query, Meridium APM will create an Order in SAP. The baseline query is configured to transfer Task records that meet specific criteria. If desired, you can modify the query to further limit the Task records that you want to transfer.

Note that the query must at least:

- Contain the following column:

Field	([Task].[Next Date] - [Task].[Call Horizon])
Alias	Expr
Table	
Sort	
Sort Index	
Include	☐
Display	☐
Hyperlink	
Criteria	(>= (? :d :caption='Last Successful Execution Date' :id=LAST_DATE) AND < Now())
Or	

- Include one field from the source family.

Creating a Scheduled Item to Create SAP Maintenance Orders

Using the SAP Interfaces, you can create SAP Maintenance Orders using the information in Task records. To enable this functionality, an administrative user must create a scheduled item in the Schedule Managerthat will cause Meridium APM to perform a calculation on the value in the Next Date field in the scheduled item and the Call Horizon value in the Task records. The result of the calculation is then compared to the dates in the Task record to determine whether or not to create Maintenance Orders in SAP.

Use the following guidelines for creating a scheduled item that will create SAP Maintenance Orders for SAP Interfaces:

- On the **Choose a Meridium APM Assembly** dialog box, select the file **Meridium.Integration.dll**.

- On the **Choose an Object Type** dialog box, select the file **Meridium.Integration.SAP.WorkOrderGeneration.WorkOrderGeneration**.

- On the **Task** tab, define a schedule that will execute the scheduled item on a recurring basis. The frequency by which you want to execute the scheduled item is up to you.

Running the Report /MIAPM/WH_HARMONIZATION

> **Note:** Before you run the report /MIAPM/WH_HARMONIZATION, your Meridium APM database must contain SAP System records identifying the SAP systems that you are currently using.

To run the report /MIAPM/WH_HARMONIZATION:

1. In SAP, run the following transaction: **SE38**

    The **ABAP Editor: Initial Screen** appears.

2. In the **Program** text box, type the following text: **/MIAPM/WH_HARMONIZATION**

3. Click the **Display** button.

    The **ABAP Editor: Display Report /MIAPM/WH_HARMONIZATION** screen appears.

4. Click the ⊞ button.

    The **Program /MIAPM/WH_HARMONIZATION** screen appears.

5. In the **Work History Creation Date** text boxes, type or select the range of creation dates of the Notifications and Orders that you want to reconcile. For example, if you want to reconcile Notifications and Orders that were created on or after January 1, 1900 through June 1, 2012, you would specify the dates as shown in the following image.

> **Note:** We recommend that you specify a date range that captures all Work History data you had extracted in your previous version of Meridium APM. For example, if you previously extracted Notifications and Orders that were created on or after 01/01/1900, you should specify 01/01/1900 here. To indicate today's date, you can leave the text box blank.

6. Work History Change Date text boxes, type or select the range of modification dates of the Notifications and Orders that you want to reconcile. For example, if

you want to reconcile Notifications and Orders that were modified on or after January 1, 1900 through June 1, 2012, you would specify the dates as shown in the following image.

| Work History Change Date | 01/01/1990 | to | 06/01/2012 | ➡ |

> **Note:** We recommend that you specify a date range that captures all Work History data you had extracted in your previous version of Meridium APM. For example, if you previously extracted Notifications and Orders that were updated on or after 01/01/1900, you should specify 01/01/1900 here. To indicate today's date, you can leave the text box blank.

7. In the **Maintenance Plant** text box, type the ID of ALL Maintenance Plants whose associated Notifications and Orders you have extracted and want to reconcile. To specify multiple Maintenance Plants, you can use the ➡ button to access the **Multiple Selection for Maintenance Plant** window.

Running an Upgrade Report to Populate the Object Number and Sub Object Number Fields

If you are upgrading from V3.4.5, as part of the SAP Interfaces upgrade, you will need to run the report /MIAPM/350_UPGRADE_WH in SAP. This report will populate the Object Number and Sub Object Number fields in Meridium APM Work History records that were created from SAP in a previous release.

> **Note:** This report must be run *after* the /MIAPM/WH_HARMONIZATION report and *before* you begin running nightly extraction reports. If you do not run this upgrade report before you begin running nightly extraction reports, the nightly extraction reports will create duplicate records in the Meridium APM database.

To run the upgrade report /MIAPM/350_UPGRADE_WH:

1. In SAP, run the following transaction: **SE38**

    The **ABAP Editor: Initial Screen** appears.

2. In the **Program** text box, type: **`/MIAPM/350_UPGRADE_WH`**

3. Click the ⊕ button.

    The **Meridium interface to upgrade Work History information to 3.5.0** screen appears.

4. In the **Work Order** text boxes, type or select IDs that define the range of Orders that were used to create the Work History records that you want to update. For example, if you want to update Work History records that were created from Orders with the IDs *1001273* through *1001293*, you would specify the Order IDs as shown in the following image.

5. In the **Notification** text boxes, type or select IDs that define the range of Noti-fications that were used to create the Work History records that you want to update. For example, if you want to update Work History records that were cre-

ated from Notifications with the IDs *1001500* through *1001800*, you would specify the Order IDs as shown in the following image.

| Notificaiton | 1001500 | to | 1001800 | ➡ |

6. In the **Work History Create Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates for the Orders and Notifications that were used to create the Work History records that you want to update. For example, if you want to update Work History records that were created from Orders or Notifications that were created on or after January 1, 1990 and on or before January 1, 2008, you would specify the dates as shown in the following image.

| Work History Create Date | 01.01.1900 | to | 01/01/2008 | ➡ |

7. In the **Work History Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates for the Orders and Notifications that were used to create the Work History records that you want to update. For example, if you want to update Work History records that were created from Orders or Notifications that were modified on or after January 1, 1990 and on or before January 1, 2008, you would specify the dates as shown in the following image.

| Work Histroy Change Date | 01.01.1900 | to | 01/01/2008 | ➡ |

8. In the **Maintenance Plant** text box, type the ID of the Maintenance Plant whose Orders and Notifications were used to create Work History records that you want to update.

9. Click the ⊕ button.

    The report runs, and the Object Number and Sub Object Number field is updated in the appropriate Meridium APM Work History records.

Running an Upgrade Report to Modify the /MIAPM/EXCEPTIONS Table to Use the Internal ID

In some previous versions of Meridium APM, when running reports or when simulating running reports, records that existed in the /MIAPM/EXCEPTIONS table as a result of previous runs of those same reports were not processed. This issue existed because entries that existed in the /MIAPM/EXCEPTIONS table used the *external* ID of the failed SAP items, but the reports were trying to find the *internal* IDs in the table. In other words, the reports never detected that any items existed in the /MIAPM/EXCEPTIONS table because they was looking for one value but found another value, which was not considered a match.

This issue existed when running the following reports:

- /MIAPM/WORK_MANAGEMENT_INF
- /MIAPM/EQUIPMENT_INF
- /MIAPM/FUNCTIONAL_LOCATION_INF
- /MIAPM/EQUIPMENT_CHARACT_INF
- /MIAPM/FUNC_LOC_CHARACT_INF
- /MIAPM/WH_WORK_ORDER
- /MIAPM/WH_NOTIF_WITH_WO
- /MIAPM/WH_NOTIFICATION
- /MIAPM/WORK_HISTORY_DETAILS

This issue is now resolved, and the /MIAPM/EXCEPTIONS table has been updated to use the *internal* ID of the SAP item that failed (which matches the report behavior). As a result of this fix, if you are upgrading from an earlier version of Meridium APM, you will need to run the upgrade report /MIAPM/350P3_UPGRADE_EXCEPTION to modify all existing entries in the /MIAPM/EXCEPTIONS table to use the internal ID instead of the external ID.

> **Note:** If you are upgrading from a version *earlier* than V3.5.0 (e.g., V3.4.5), this issue does not exist because the /MIAPM/EXCEPTIONS table does not exist in those versions. In other words, if you are upgrading from a version earlier than V3.5.0, you do not need to run the report /MIAPM/350P3_UPGRADE_EXCEPTION.

To run the upgrade report /MIAPM/350P3_UPGRADE_EXCEPTION:

1. In SAP, run the following transaction: **SE38**

   The **ABAP Editor: Initial Screen** appears.

2. In the **Program** text box, type: `/MIAPM/350P3_UPGRADE_EXCEPTION`

3. Click the ⊕ button.

   The **350P3 Upgrade Exception Table Report** screen appears.

4. Leave the **APM Data Source** and **Interface ID** lists empty so that the upgrade report will update items in the /MIAPM/EXCEPTIONS table for *all* reports and *all* active Meridium APM data sources that exist in the /MIAPM/PARAMS table.

5. Click the ⊕ button.

   A message appears, indicating that the external IDs will be converted to internal IDs for the reports for which you have selected to run the upgrade report.

6. Click the **Yes** button.

   The upgrade report runs and converts the external IDs to internal IDs. After the report has finished running, a confirmation message appears.

Running an Upgrade Report to Populate the /MIAPM/PLANT_CNF Table

In some previous releases, in the /MIAPM/PARAMS table, the **Plants** text box allowed only 255 characters, which was insufficient for customers with a large number of Maintenance Plants (more than 42). This issue is now resolved, and to support more Maintenance Plants, the **Plants** text box has been removed, and a new table, /MIAPM/PLANT_CNF, has been created to store the Maintenance Plants whose data you want to send to and from the specified Meridium APM data source and Application Server.

As a result of removing the **Plants** text box, if you are upgrading from an earlier version of Meridium APM, you will need to run an upgrade report (/MIAPM/342P2_UPGRADE_PARAMS) in SAP to transfer the previous values in the **Plants** text box to the new table, /MIAPM/PLANT_CNF.

> **Note:** If you are upgrading from V3.5.1 or later, you should have already run this report as a result of upgrading to that previous version. In other words, if you are upgrading from V3.5.1 or later, you do not need to run the report /MIAPM/342_UPGRADE_PARAMS.

To run the upgrade report /MIAPM/342P2_UPGRADE_PARAMS:

1. In SAP, run the following transaction: **SE38**

    The **ABAP Editor: Initial Screen** appears.

2. In the **Program** text box, type: `/MIAPM/342P2_UPGRADE_PARAMS`

3. Click the ⊕ button.

    The **Meridium program to upgrade Params table to 3.4.2 PI Int. Pack ABAP P2** screen appears.

4. Select the **Update Plant Config Table** check box.

5. Click the ⊕ button.

    The Maintenance Plant IDs are moved from the /MIAPM/PARAMS table to the /MIAPM/PLANT_CNF table. When the process is complete, a message appears, indicating that the upgrade report ran successfully.

About the /MIAPM/PI_PARAMS Table

The /MIAPM/PI_PARAMS table contains information that is used when you run an extraction interface through an SAP PI Server. The table is created automatically when you deploy the ABAP package that is provided with your Meridium APM distribution package. It will be empty by default, though, so you will need to populate the table manually.

You should populate the table *after* you have created all entries in the /MIAPM/PARAMS table. The way in which you should access the table depends upon how many data sources you have specified in the /MIAPM/PARAMS table.

- If you have specified only *one* data source in the /MIAPM/PARAMS table, you should access the /MIAPM/PI_PARAMS table from that entry in the /MIAPM/PARAMS table.

  -or-

- If you have specified *multiple* data sources in the /MIAPM/PARAMS table, you should access the /MIAPM/PI_PARAMS table directly.

The following image shows an example of what the table will look like after it is populated:

Each row in the table represents a separate interface that will run through the SAP PI Server. For each row in the table, the following columns of information appear:

- **APM Data Source:** The name of the Meridium APM data source that will be used when the interface is executed.
- **Interface Name:** The name of the interface that will run through the SAP PI Server.
- **Web Service Link:** The URL to the SAP PI Server that will be called to pass data from the SAP PI Server to the Meridium APM system.

The following buttons appear below the table:

- **Insert:** Adds a new row to the table. This button is meant to support a custom implementation and therefore exceeds the scope of this documentation.
- **Delete:** Deletes the currently selected row from the table. This button is meant to support a custom implementation and therefore exceeds the scope of this documentation.
- **Save:** Saves the values in the table.
- **Modify Single Entry:** Displays the **Manage PI Configuration for Meridium Interfaces** dialog box, where you can change the value in the **Web Service Link** text box. This button is meant to support a custom implementation and therefore exceeds the scope of this documentation.
- **Reset Default:** After prompting you for the PI Server name, port number, and Meridium APM data source name, removes all existing values from the table and repopulates the table based upon the values you provided in the prompts.

Accessing the /MIAPM/PI_PARAMS Table from an Entry in the /MIAPM/PARAMS Table

The following instructions explain how to access the /MIAPM/PI_PARAMS table from an entry in the /MIAPM/PARAMS table. You should use these instructions only if the /MIAPM/PARAMS table contains entries for only *one* Meridium APM data source. If the /MIAPM/PARAMS table contains entries for *multiple* Meridium APM data sources, you should access the /MIAPM/PI_PARAMS table directly.

Because you will need to access the /MIAPM/PI_PARAMS table for the purpose of populating it with data, these instructions explain how to access the table *and* populate it with the appropriate data.

To access and populate the /MIAPM/PI_PARAMS table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain Meridium APM Parameters** row, click the [icon] button.

   The **Manage Meridium APM Parameters** screen appears.

4. Select any row that is populated with data.

5. Click the **Assign PI Parameters** button.

   The **Manage PI Configuration for Meridium Interfaces** screen appears.

6. Below the grid, click the **Reset Default** button.

   A message appears, asking if you want to delete all current configurations.

7. Click the **Yes** button.

   The **Manage PI Configuration for Meridium Interfaces** dialog box appears. The **APM Data Source** cell is disabled and populated automatically with the name of the data source from which you accessed the /MIAPM/PI_PARAMS table.

8. In the **SAP PI Server** text box, type the name of the SAP PI Server.

9. In the **Port Number** text box, type the port number of the SAP PI Server.

10. Click **OK**.

   The table is populated automatically.

   In each row, the **Web Service Link** column contains a URL that begins with the following text:

   http://<PI Server>:<Port>

   Where **<PI server>** is the value that you typed in the **SAP PI Server** text box, and **<Port>** is the value that you typed in the **Port Number** text box.

11. Click the **Save** button.

   A message appears, asking if you want to save your changes.

12. Click the **Yes** button.

   The changes are saved.

Accessing the /MIAPM/PI_PARAMS Table Directly

The following instructions explain how to access the /MIAPM/PI_PARAMS directly. You should use these instructions only if the /MIAPM/PARAMS table contains entries for *multiple* Meridium APM data sources. If the /MIAPM/PARAMS table contains entries for *only one* Meridium APM data source, you should access the /MIAPM/PI_PARAMS table from the /MIAPM/PARAMS table.

Because you will need to access the /MIAPM/PI_PARAMS table for the purpose of populating it with data, these instructions explain how to access the table *and* populate it with the appropriate data.

To access and populate the /MIAPM/PI_PARAMS table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain SAP PI/XI Parameters (optional)** row, click the ⊕ button.

   The **Manage PI Configuration for Meridium Interfaces** screen appears.

4. Click the **Reset Default** button.

   A message appears, asking if you want to delete all current configurations.

5. Click the **Yes** button.

   The **Manage PI Configuration for Meridium Interfaces** dialog box appears.

6. In the **SAP PI Server** text box, type the name of the SAP PI Server.

7. In the **Port Number** text box, type the port number of the SAP PI Server.

8. In the APM Data Source, type the name of the Meridium APM data source to and from which you want to transfer data. The data source name should match the name of the data source that you specified in the /MIAPM/PARAMS table.

9. Click **OK**.

   The first five rows in the table are populated automatically.

10. Repeat steps 4 through 9 for each additional data source that is defined in the /MIAPM/PARAMS table.

11. For each subsequent data source that you specify after the first one, in each of the five corresponding rows in the table, in the **Web Service Link** cell, change **DSO1** to **DSO<n>**, where **<n>** is a number indicating the order in which you added rows for that data source to the table.

    For example, suppose that you have created entries for one data source, *TEST_DB*. In each of the five rows representing *TEST_DB*, the **Web ServiceLink** cell will contain a URL with the text *DS01*, as illustrated in the following image.

    If you were to create entries in the table for a second data source, *DEMO_DB*, five additional rows would be added to the table for that data source. The URL in the **Web Service Link** cell would also contain the default value *DS01*, as illustrated in the following image, where the new rows are selected (highlighted in yellow), and the value *DS01* is outlined in red.

In this case, in the rows representing *DEMO_DB*, you would need to change *DS01* to *DS02*, like this:

Note: The number that you specify in each URL will be used later during the process of creating receiver determinations, interface determinations, and receiver agreements for each additional data source.

Populating the /MIAPM/PI_PARAMS Table

The /MIAPM/PI_PARAMS table is created when you deploy the ABAP package that is provided with your Meridium APM distribution package. It will be empty by default, so you will need to populate the table manually using the following instructions.

To populate the /MIAPM/PI_PARAMS table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Configurations In SAP**.

3. In the **Maintain SAP PI/XI Parameters (optional)** row, click the 🔁 button.

   The **Manage PI Configuration for Meridium Interfaces** screen appears.

4. Click the **Reset Default** button.

   A message appears, indicating that resetting the default values will delete any current values.

5. Click the **Yes** button.

   The **Manage PI Configuration for Meridium Interfaces** dialog box appears.

6. In the **SAP PI Server** text box, type the name of the SAP PI Server.

7. In the **Port Number** text box, type the port number of the SAP PI Server.

8. In the **APM Data Source** text box, type the name of the Meridium APM data source that will be used by this entry.

9. Click **OK**.

   The table is populated automatically. In each row, the **Web Service Link** column contains a URL that begins with the following text:

   http://<PI Server>:<Port>

   Where **<PI server>** is the value that you typed in the **SAP PI Server** text box, and **<Port>** is the value that you typed in the **Port Number** text box.

10. Click the **Save** button.

    The changes are saved.

Deleting Previous Versions of Software Component Versions

To delete a previous version of a Software Component Version:

1. In a web browser, navigate to one of the following URLs depending on the SAP PI Server version you are using:

   - Version prior to SAP PI 7.3: **http://<SAP PI Server>:<port number>/rep/start/index.jsp**.

   - SAP PI 7.3: **http://<SAP PI Server>:<port number>/dir/start/index.jsp**.

   Where **<SAP PI Server>** is the name of the SAP PI Server and **<port number>** is the port number of the specified SAP PI Server.

   Depending on the SAP PI Server version you are using, the **SAP Exchange Infrastructure** window or the **Process Integration 7.3** window appears.

2. If you are using a version prior to SAP PI 7.3, click the **Integration Repository** link.

   -or-

   If you are using SAP PI 7.3, click the **Enterprise Services Builder** link.

   A Logon screen appears.

3. Log on as an administrator.

   Depending on the SAP PI Server version you are using, the **Design: Integration Builder** window or the **Enterprise Services Builder** window appears.

4. On the **Objects** tab, expand **MERIDIUM_INTERFACES of meridium.com**.

5. Double-click the Software Component Version that you want to delete (e.g., *MERIDIUM_INTERFACES, 3.4.0 of meridium.com*).

6. In the workspace that appears to the right of the **Objects** tab, on the **Software Component Version** menu, click **Delete**.

A message appears, asking if you are sure you want to delete the object.

7. Click the **Delete** button to confirm the deletion.

   Another message appears, asking you to confirm the deletion.

   ![Delete object warning dialog: Warning: It is not possible to undo the deletion of software component versions. Deletion is immediate and no entry is made in the change list. MERIDIUM_INTERFACES, 3.4.0 of meridium.com still contains 202 objects. These will be deleted irrevocably. Buttons: Delete, Cancel]

8. Click the **Delete** button.

   The Software Component Version is deleted.

   > **Note:** After you import the new version of the Software Component Version, you will need to associate all pre-existing scenarios with the new version of the Software Component Version.

About Configuring the System Landscape Directory

If you are using the PI-based approach for the SAP Interfaces, you will need to configure the System Landscape Directory (SLD) using the SAP NetWeaver™ SAP Exchange Infrastructure by:

- Creating a new product version and a third-party Technical System and Business System. This step creates the Software Component Version.
- Creating a *Web AS ABAP* Technical System and Business System.

Creating a New Product Version and Third-Party Technical System and Business System

The following instructions explain how to create a new product version and *third-party* Technical System and Business System.

To configure the System Landscape Directory if you are using the Meridium APM SAP Certified Powered By NetWeaver Interface:

1. On the PI Server, open an Internet Explorer window, and navigate to the SAP NetWeaver™ SAP Exchange Infrastructure.

    The **SAP NetWeaver™ SAP Exchange Infrastructure** window appears.

2. Click the **System Landscape Directory** link.

    A login screen like the one in the following image appears.

3. Log in as an administrator.

   The **SAP NetWeaver™ System Landscape Directory** page appears.

4. In the **Software Catalog** section, click the **Products** link, which is highlighted in red in the following image.

   The **Software Catalog** screen appears.

5. Click the **New Product Version** button.

   A new screen appears, where you can specify the name, vendor, and version of the new product.

6. Type the following values in the **Name**, **Vendor**, and **Version** text boxes:

   - **Name: `Meridium Asset Performance Management`**
   - **Vendor: `meridium.com`**
   - **Version: `v3`**

7. Click the **Create** button.

   You are prompted to add a new non-SAP software unit.

8. Type the following name: **`MERIDIUM_APM`**

9. Click the **Create** button.

   You are prompted to add a new software component to the non-SAP product.

10. Type the following values in the **Name**, **Version**, and **Product State** text boxes:

    - **Name: `MERIDIUM_APM`**
    - **Version: `3`**
    - **Product State: `released`**

11. Click the **Create** button.

    The **Software Catalog** screen returns to focus, and the grid is updated to contain the Meridium Asset Performance Management product that you just created.

12. In the upper left corner, click the **Home** link, which is highlighted in red in the following image.

The **SAP NetWeaver™ System Landscape Directory** page appears.

13. In the **Landscape** section, click the **Technical Systems** link, which is highlighted in red in the following image.

The **Technical Systems** screen appears.

14. Click the **New Technical System** button.

Step 1 of the **Technical System Wizard** appears.

15. Select the **Third-Party** option, and click the **Next** button.

Step 2 of the **Technical System Wizard** appears.

16. In the **System Name** text box, type: `MeridiumAPMSystem`

17. In the **Host Name** text box, type: `xi_host`

18. Click the **Next** button.

Step 3 of the **Technical System Wizard** appears.

19. In the row containing the product **Meridium Asset Performance Management**, select the **Installed Product** check box.

20. In the row containing the software component **MERIDIUM_APM**, select the **Installed Software Component** check box.

21. Click the **Finish** button.

    The **Technical Systems** screen appears, displaying the new Technical System.

22. In the upper left corner, click the **Home** link.

    The **SAP NetWeaver™ System Landscape Directory** page appears.

23. In the **Landscape** section, click the **Business Systems** link.

    The **Business Systems** screen appears.

24. Click the **New Business System** button.

    Step 1 of the **Business System Wizard** appears.

25. Select the **Third-Party** option, and click the **Next** button.

    Step 2 of the **Business System Wizard** appears.

26. In the **System** list, select **MeridiumAPMSystem**.

27. In the **Client** list, select the corresponding Client.

28. Click the **Next** button.

    Step 3 of the **Business System Wizard** appears.

29. In the **Name** text box, type: `MeridiumAPM_D`

30. Click the **Next** button.

   Step 4 of the **Business System Wizard** appears.

31. Click the **Next** button.

   Step 5 of the **Business System Wizard** appears.

32. In the **Business System Role** list, accept the default selection, **Application System**.

33. In the **Related Integration Server** list, select **XI_INTEGRATION_SERVER**.

34. Click the **Finish** button.

   You are now finished configuring the System Landscape Directory.

Creating a Web AS ABAP Technical System and Business System

The following instructions explain how to create a *Web AS ABAP* Technical System and Business System. ALL customers using the PI-based SAP Interfaces will need to complete these steps, regardless of whether or not you are using the Notification Creation Interface.

To configure the System Landscape Directory to create a *Web AS ABAP* Technical System and Business System:

1. On the PI Server, open an Internet Explorer window, and navigate to the SAP NetWeaver™ SAP Exchange Infrastructure.

   The **SAP NetWeaver™ SAP Exchange Infrastructure** window appears.

2. Click the **System Landscape Directory** link.

   A login screen like the one in the following image appears.

3. Log in as an administrator.

   The **SAP NetWeaver™ System Landscape Directory** page appears.

4. In the upper left corner, click the **Home** link.

   The **SAP NetWeaver™ System Landscape Directory** page appears.

5. In the **Landscape** section, click the **Technical Systems** link, which is highlighted in red in the following image.

The **Technical Systems** screen appears.

6. Click the **New Technical System** button.

Step 1 of the **Technical System Wizard** appears.

7. Select the **Web AS ABAP** option, and click the **Next** button.

   Step 2 of the **Technical System Wizard** appears.

8. In the **Web AS ABAP Name (SID)** text box, type the system ID for the SAP backend system (e.g. *ECC*).

9. In the **Installation Number** text box, type the installation number for the SAP backend system (e.g., *0020175581*).

10. In the **Database Host Name** text box, type the database host name for the SAP

backend system (e.g., *ps4909*).

11. Click the **Next** button.

Step 3 of the **Technical System Wizard** appears.

12. In the **Message Server** section, in the **Host Name** text box, type the host name of the SAP backend system (e.g., *ps4909*).

13. In the **Message Server** section, in the **Message Server Port (sapmsTST)** text box, type the port number of the SAP backend system (e.g., *3600*).

14. In the **Central Application Server** section, in the **Instance Number** text box, type the instance number for the SAP backend system.

15. Click the **Next** button.

Step 4 of the **Technical System Wizard** appears.

16. Click the **Add Application Server** button.

    A new row appears in the grid, and the **Instance Number** column is populated automatically with the value that you typed in the **Instance Number** text box on step 3 of the **Technical System Wizard**.

17. In the **Host Name** column, in the same row in which the instance number appears, type the host name for the SAP backend system (e.g., *ps4909*).

18. Click the **Next** button.

    Step 5 of the **Technical System Wizard** appears.

19. In the first empty row, in the **Client Number** cell, type the client number for the SAP backend system (e.g., *800*).

20. In the first empty row, in the **Logical Client Name** cell, type the logical system name for your SAP backend system (e.g., *ECCCLNT800*).

21. Click the **Next** button.

    Step 6 of the **Technical System Wizard** appears.

22. In the rows containing the products that you want to install, select the **Installed Products** link, and click the **Finish** button.

23. In the upper left corner of the screen, click the **Home** link.

24. In the **Landscape** section, click the **Business Systems** link.

    The **Business Systems** screen appears.

25. Click the **New Business System** button.

    Step 1 of the **Business System Wizard** appears.

26. Select the **Web AS ABAP** option, and click the **Next** button.

    Step 2 of the **Business System Wizard** appears.

27. In the **System** list, select the Technical System that you created in the previous steps.

28. In the **Client** list, select the corresponding Client.

29. Click the **Next** button.

    Step 3 of the **Business System Wizard** appears.

30. In the **Name** text box, type: **SAP_ECC**

31. Click the **Next** button.

    Step 4 of the **Business System Wizard** appears.

32. Click the **Next** button.

    Step 5 of the **Business System Wizard** appears.

33. In the **Business System Role** list, accept the default selection, **Application System**.

34. In the **Related Integration Server** list, select the appropriate value.

35. Click the **Finish** button.

    You are now finished configuring the System Landscape Directory.

About Importing the Configuration Object

The steps for importing the configuration object are different depending on which SAP PI Server version you are using. To access the appropriate instructions, click the SAP PI Server version that you are using:

- [Version prior to SAP PI 7.3](#)
- [SAP PI 7.3](#)

Importing the Configuration Object using an SAP PI Version Prior to 7.3

To import the configuration object:

1. Insert the V3.6.0 SAP Interfaces installation DVD.

2. Navigate to the folder **SAP PI Transport Files\Integration Directory**.

3. Copy the file **XI3_0_Meridium_V360.tpz**.

4. On the SAP PI Server, paste the copied file to the folder **\usr\sap\<SID>\SYS\global\xi\directory_server\import**, where **<SID>** is the system ID of the SAP PI Server.

5. In a web browser, navigate to **http://<SAP PI Server>:<port number>/rep/start/index.jsp**, where **<SAP PI Server>** is the name of the SAP PI Server and **<port number>** is the port number of the specified SAP PI Server.

   The **SAP Exchange Infrastructure** window appears.

6. Click the **Integration Directory** link.

   A Logon screen appears, prompting you to log on to the Configuration: Integration Builder.

7. Log on as an administrator.

   The **Configuration: Integration Builder** window appears.

8. On the **Tools** menu, click **Import configuration objects**.

   The **Choose Import Source** window appears.

9. Select the file **XI3_0_Meridium_V360.tpz**, and click **OK**.

   A confirmation dialog box appears.

10. Click the **Import** button.

The file is imported, and a confirmation message appears.

11. Click the **Close** button.

You will now need to modify the baseline communication channels. To do so, you will need to remain logged on to the Configuration: Integration Builder.

Importing the Configuration Object using SAP PI 7.3

To import the configuration object:

1. Insert the V3.6.0 SAP Interfaces installation DVD.

2. Navigate to the folder **SAP PI Transport Files\Integration Directory**.

3. Copy the file **XI3_0_Meridium_V360.tpz**.

4. On the SAP PI Server, paste the copied file to the folder **\usr\sap\<SID>\SYS\global\xi\directory_server\import**, where **<SID>** is the system ID of the SAP PI Server.

5. In a web browser, navigate to **http://<SAP PI Server>:<port number>/dir/start/index.jsp**, where **<SAP PI Server>** is the name of the SAP PI Server and **<port number>** is the port number of the specified SAP PI Server.

   The **Process Integration 7.3** window appears.

6. Click the **Integration Builder** link.

   A Logon screen appears, prompting you to log on to the Configuration: Integration Builder.

7. Log on as an administrator.

   The **Configuration: Integration Builder** window appears.

8. On the **Tools** menu, click **Import configuration objects**.

   The **Select import source** window appears.

9. Click the **Server** button.

   The **Choose Import Source** window appears.

10. Select the file **XI3_0_Meridium_V360.tpz**, and click **OK**.

    A confirmation dialog box appears.

11. Click the **Import** button.

The file is imported, and a confirmation message appears.

12. Click the **Close** button.

You will now need to modify the baseline communication channels. To do so, you will need to remain logged on to the Configuration: Integration Builder.

About Modifying the Baseline Communication Channels

The steps for modifying the baseline communication channels are different depending on which SAP PI Server version you are using. To access the appropriate instructions, click the SAP PI Server version that you are using:

- [Version prior to SAP PI 7.3](#)
- [SAP PI 7.3](#)

Modifying the Baseline Communication Channels using an SAP PI Version Prior to 7.3

To modify the baseline communication channels:

1. In the Configuration: Integration Builder, click the **Change Lists** tab.

2. On the **Change Lists** tab, expand **XI 3.0 Import**, and then double-click **MI_ EQUIP00_SOAP_RCV_DS01**.

    The communication channel details appear on the right side of the screen.

3. On the right side of the screen, click the ▨ button.

4. On the **General** tab:

    a. In the **Target URL** text box, type: `http://<Web Server->/MeridiumIntegrationServices/MI_EQUIP000.as-mx?datasource=<Data Source>`

    Where **<Web Server>** is the name of your Meridium APM Web Server and **<Data Source>** is the name of the Meridium APM data source to and from which you want to transfer data (this is the same data source that you will later specify in the /MIAPM/PARAMS table).

    b. Select the **Configure User Authentication** check box.

    c. In the **User** text box, type the user ID of a Meridium APM Security User that can access the specified data source (this is the same user ID that you will later specify in the /MIAPM/PARAMS table).

d. In the **Password** text box that appears to the left of the ![button] button, type the password that is associated with the specified user ID.

e. In the **Password** text box that appears to the right of the ![button] button, retype the password.

The ![button] button changes to the ![button] button.

5. At the top of the screen, click the ![button] button.

6. Repeat steps 2 through 4 for each of the following configuration scenarios in the tree on the left:

- **MI_FNCLOC00_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_FNCLOC00*)

- **MI_EVWKHIST_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_EVWKHIST*)

- **MI_CHARDEF_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_CHARDEF*)

- **MI_MODULES_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_MODULES*)

You will now need to activate the changes. To do so, you will need to remain logged on to the Configuration: Integration Builder.

Modifying the Baseline Communication Channels using SAP PI 7.3

To modify the baseline communication channels:

1. In the Configuration: Integration Builder, click the **Change Lists** tab.

2. On the **Change Lists** tab, expand **XI 3.0 Import**, and then double-click **MeridiumAPM_D|MI_EQUIP00_SOAP_RCV_DS01**.

   The **Error Loading Adapter Metadata** dialog box appears.

3. Click the **Close** button.

   The communication channel details appear on the right side of the screen.

4. On the right side of the screen, click the ![icon] button.

5. On the **Parameters** tab, in the **Adapter Type** row, select the ![icon] button.

   The **Choose Adapter Metadata** window appears.

6. Select the latest SOAP Adapter from the list, and click the **Apply** button.

   The communication channel details return to focus.

7. On the **General** tab:

   a. In the **Target URL** text box, type: `http://<Web Server->/MeridiumIntegrationServices/MI_EQUIP000.as-mx?datasource=<Data Source>`

   Where **<Web Server>** is the name of your Meridium APM Web Server and **<Data Source>** is the name of the Meridium APM data source to and from which you want to transfer data (this is the same data source that you will later specify in the /MIAPM/PARAMS table).

   b. Select the **Configure User Authentication** check box.

   c. In the **User** text box, type the user ID of a Meridium APM Security User that can access the specified data source (this is the same user ID that you will later specify in the /MIAPM/PARAMS table).

   d. In the **Password** text box that appears to the left of the ≠ button, type the password that is associated with the specified user ID.

   e. In the **Password** text box that appears to the right of the ≠ button, retype the password.

   The ≠ button changes to the = button.

8. At the top of the screen, click the button.

9. Repeat steps 2 through 7 for each of the following configuration scenarios in the tree on the left:

   - **MI_FNCLOC00_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_FNCLOC00*)

   - **MI_EVWKHIST_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_EVWKHIST*)

   - **MI_CHARDEF_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_CHARDEF*)

   - **MI_MODULES_SOAP_RCV_DS01** (in the *Target URL* instructions, replace *MI_EQUIP000* with *MI_MODULES*)

   You will now need to activate the changes. To do so, you will need to remain logged on to the Configuration: Integration Builder.

Activating the Scenarios

To activate the scenarios:

1. In the Configuration: Integration Builder, on the **Change Lists** tab, right-click **XI 3.0 Import**, and click **Activate**.

    A confirmation window appears.

2. Click the **Activate** button.

    A series of confirmation messages appear, and when the scenarios are activated, a final confirmation message appears.

3. Click the **Close** button.

Creating Receiver Determinations

If you plan to transfer data to and from multiple Meridium APM data sources, for *each* data source that is not already specified in the baseline communication channels, you will need to create *new* receiver determinations (one for each baseline configuration scenario). For example, if you plan to transfer data to and from two Meridium APM data sources (*TEST_DB* and *DEMO_DB*), you will have specified one of those data sources (*TEST_DB*) in the baseline configuration scenarios, and for the other data source (*DEMO_DB*), you will need to create *five* new receiver determinations, or one for each of the following baseline configuration scenarios:

- MI_CHARDEF_SOAP_RCV_DS01
- MI_EQUIP00_SOAP_RCV_DS01
- MI_EVWKHIST_SOAP_RCV_DS01
- MI_FNCLOC00_SOAP_RCV_DS01
- MI_MODULES_SOAP_RCV_DS01

The following instructions explain how to create a new receiver determination for the configuration scenario *MI_CHARDEF_SOAP_RCV_DS01*. You can use these instructions to create a receiver determination for the other baseline configuration scenarios, too.

To create a new receiver determination:

1. In the Configuration: Integration Builder, click the **Scenarios** tab.

2. In the tree, expand **Receiver Determination**.

3. Double-click **| SAP_ECC | MI_CHARDEF_DS01**.

    The receiver determination details appear on the right side of the screen.

4. At the top of the screen, click the [icon] button.

   The **Copy Receiver Determination** window appears.

5. In the **Interface** text box, change *01* to *02*. When you are finished, it should look like this:

> **Note:** If you have already created at least one receiver determination and are using these instructions to create subsequent receiver determinations, instead of seeing *01*, you will see a number indicating the number of receiver determinations that already exist. You will need to increment the number by one. For example, if you see *MI_CHARDEF_DS03*, you will need to change it to *MI_CHARDEF_DS04*. Note that the numbers that you specify for the interface for any given data source must match the numbers that you specified in the URLs when populating the /MIAPM/PI_PARAMS table for that data source.

6. In the **Add to Scenario** list, click the 📄 icon, and then select **Meridium_V360** from the list.

7. Click the **Copy** button.

The new receiver determination is saved.

Creating Interface Determinations

If you plan to transfer data to and from multiple Meridium APM data sources, for *each* data source that is not already specified in the baseline communication channels, you will need to create *new* interface determinations (one for each baseline configuration scenario). For example, if you plan to transfer data to and from two Meridium APM data sources (*TEST_DB* and *DEMO_DB*), you will have specified one of those data sources (*TEST_DB*) in the baseline configuration scenarios, and for the other data source (*DEMO_DB*), you will need to create *five* new interface determinations, or one for each of the following baseline configuration scenarios:

- MI_CHARDEF_SOAP_RCV_DS01
- MI_EQUIP00_SOAP_RCV_DS01
- MI_EVWKHIST_SOAP_RCV_DS01
- MI_FNCLOC00_SOAP_RCV_DS01
- MI_MODULES_SOAP_RCV_DS01

The following instructions explain how to create a new interface determination for the configuration scenario *MI_CHARDEF_SOAP_RCV_DS01*. You can use these instructions to create an interface determination for the other baseline configuration scenarios, too.

To create a new interface determination:

1. In the Configuration: Integration Builder, click the **Scenarios** tab.

2. In the tree, expand **Interface Determination**.

3. Double-click **| SAP_ECC | MI_CHARDEF_DS01 | | MeridiumAPM_D**.

   The interface determination details appear on the right side of the screen.

4. At the top of the screen, click the button.

    The **Copy Interface Determination** window appears.

5. In the **Interface** text box, change *01* to *02*. When you are finished, it should look like this:

> **Note:** If you have already created at least one interface determination and are using these instructions to create subsequent interface determinations, instead of seeing *01*, you will see a number indicating the number of interface determinations that already exist. You will need to increment the number by one. For example, if you see *MI_CHARDEF_DS03*, you will need to change it to *MI_CHARDEF_DS04*. Note that the numbers that you specify for the interface for any given data source must match the numbers that you specified in the URLs when populating the /MIAPM/PI_PARAMS table for that data source.

6. In the **Add to Scenario** list, click the icon, and then select **Meridium_V360** from the list.

7. Click the **Copy** button.

    The new interface determination is saved.

8. At the top of the screen, click the button.

    The details become modifiable.

In the **Configured Inbound Interfaces** section, in the grid, change the name to reflect the interface value that you specified in step 5. For example, if you changed *01* to *02* in step 5, the name should look like this:

9. At the top of the screen, click the ![save] button.

The new interface determination is saved.

Creating Receiver Agreements

If you plan to transfer data to and from multiple Meridium APM data sources, for *each* data source that is not already specified in the baseline communication channels, you will need to create *new* receiver agreements (one for each baseline configuration scenario). For example, if you plan to transfer data to and from two Meridium APM data sources (*TEST_DB* and *DEMO_DB*), you will have specified one of those data sources (*TEST_DB*) in the baseline configuration scenarios, and for the other data source (*DEMO_DB*), you will need to create *five* new receiver agreements, or one for each of the following baseline configuration scenarios:

- MI_CHARDEF_SOAP_RCV_DS01
- MI_EQUIP00_SOAP_RCV_DS01
- MI_EVWKHIST_SOAP_RCV_DS01
- MI_FNCLOC00_SOAP_RCV_DS01
- MI_MODULES_SOAP_RCV_DS01

The following instructions explain how to create a new receiver agreement for the configuration scenario *MI_CHARDEF_SOAP_RCV_DS01*. You can use these instructions to create a receiver agreement for the other baseline configuration scenarios, too.

To create a new receiver agreement:

1. In the Configuration: Integration Builder, click the **Scenarios** tab.

2. In the tree, expand **Receiver Agreement**.

3. Double-click **| SAP_ECC | | MeridiumAPM_D | MI_CHARDEF_DS01**.

   The receiver agreement details appear on the right side of the screen.

4. At the top of the screen, click the 🗐 button.

The **Copy Receiver Agreement** window appears.

5. In the **Interface** text box, change *01* to *02*. When you are finished, it should look like this:

> **Note:** If you have already created at least one receiver agreement and are using these instructions to create subsequent receiver agreements, instead of seeing *01*, you will see a number indicating the number of receiver agreement that already exist. You will need to increment the number by one. For example, if you see *MI_CHARDEF_DS03*, you will need to change it to *MI_CHARDEF_DS04*. Note that the numbers that you specify for the interface for any given data source must match the numbers that you specified in the URLs when populating the /MIAPM/PI_PARAMS table for that data source.

6. In the **Add to Scenario** list, click the icon, and then select **Meridium_V360** from the list.

7. Click the **Copy** button.

   The new receiver agreement is saved.

8. At the top of the screen, click the button.

   The details become modifiable.

9. In the **Receiver Communication Channel** text box, double-click the value.

    The communication channel details appear on a new tab.

10. At the top of the screen, click the 🗗 button.

    The **Copy Communication Channel** window appears.

11. In the **Communication Channel** text box, change *01* to *02*. When you are finished, it should look like this:

> **Note:** If you have already created at least one receiver agreement and are using these instructions to create subsequent receiver agreements, instead of seeing *01*, you will see a number indicating the number of receiver agreement that already exist. You will need to increment the number by one. For example, if you see *MI_CHARDEF_SOAP_RCV_DS03*, you will need to change it to *MI_CHARDEF_ SOAP_RCV_DS04*. Note that the numbers that you specify for the communication channel for any given data source must match the numbers that you specified in the URLs when populating the /MIAPM/PI_PARAMS table for that data source.

12. In the **Add to Scenario** list, click the 📄 icon, and then select **Meridium_V360** from the list.

13. Click the **Copy** button.

    The new communication channel is saved.

14. At the top of the screen, click the 📝 button.

    The details become modifiable.

15. In the **Target URL** text box, change the data source name to the name of data source to and from which you want to transfer data.

16. In the **User** text box, type the user ID of a Meridium APM Security User that can access the specified data source (this is the same user ID that you will later specify in the /MIAPM/PARAMS table).

17. In the **Password** text box that appears to the left of the

button, type the password that is associated with the specified user ID.

18. In the **Password** text box that appears to the right of the button, retype the password.

    The button changes to the button.

19. At the top of the screen, click the button.

    The new interface determination is saved.

20. Double-click the new receiver agreement in the tree on the left.

    The receiver agreement details appear on the right side of the screen.

21. At the top of the screen, click the button.

    The details become modifiable.

22. In the **Receiver CommunicationChannel** text box, click the button.

    The **Choose Communication Channel** window appears.

23. Double-click the name of the communication channel that you created in step 10.

    The name of the selected communication channel appears in the **Receiver Communication Channel** text box.

24. At the top of the screen, click the button.

    The new receiver agreement is saved.

Activating the Changes

To activate the changes:

1. In the Configuration: Integration Builder, on the **Change Lists** tab, right-click **Standard Change List**, and click **Activate**.

   A confirmation window appears.

2. Click the **Activate** button.

   A series of confirmation messages appear, and when the changes are activated, a final confirmation message appears.

3. Click the **Close** button.

Associating Scenarios with the Newest Version of the Software Component Version

To associate a scenario with the newest version of the Software Component Version:

1. In a web browser, navigate to one of the following URLs depending on the SAP PI Server version you are using:

   - Version prior to SAP PI 7.3: **http://<SAP PI Server>:<port number>/rep/start/index.jsp**.

   - SAP PI 7.3: **http://<SAP PI Server>:<port number>/dir/start/index.jsp**.

   Where **<SAP PI Server>** is the name of the SAP PI Server and **<port number>** is the port number of the specified SAP PI Server.

   Depending on the SAP PI Server version you are using, the **SAP Exchange Infrastructure** window or the **Process Integration 7.3** window appears.

2. If you are using a version prior to SAP PI 7.3, click the **Integration Directory** link.

   -or-

   If you are using SAP PI 7.3, click the **Integration Builder** link.

   A Logon screen appears.

3. Log on as an administrator.

   The **Configuration: Integration Builder** window appears.

4. On the **Scenarios** tab, expand **Equipment Extraction**, expand **Interface Determination**, and select the item directly below **Interface Determination**.

5. In the workspace that appears to the right of the **Scenarios** tab, click the [icon] button.

6. In the grid in the **Configured Inbound Interfaces** section, to the right of the Software Component Version, click the [icon] button.

   The **Select Mapping** window appears.

7. In the grid, select the row containing the Software Component Version **MERIDIUM_APM, 3 of meridium.com**, and click **OK**.

8. At the top of the workspace, click the **Save** button.

Modifying the File Meridium.SAP.CertifiedInterface.Config.xml

If you plan to use the PI-based approach for creating or updating SAP Notifications from Meridium APM Recommendation records, Meridium APM must be able to connect to and communicate with the SAP PI Server. To make this communication possible, you must define the connection information for the SAP PI Server using the file Meridium.SAP.CertifiedInterface.Config.xml, which is stored on the Meridium APM Application Server machine in the folder <root>\ApplicationServer\Bin, where <root> is the root drive and folder into which the Meridium APM Application Server has been installed.

To modify the file Meridium.SAP.CertifiedInterface.Config.xml:

1. On the Meridium APM Application Server, navigate to the folder **C:\Program Files\Meridium\ApplicationServer\Bin**.

2. Open the file **Meridium.SAP.CertifiedInterface.Config.xml** in an application that you can use to modify XML script (e.g., Notepad).

3. In the file, within the **<XIServerUserName>** tags, type the user name associated with the account that will be used for connecting to the SAP PI Server.

4. Using the Meridium.SAP.BAPI.EncryptPassword utility, encrypt the password associated with the user account you specified in step 3.

5. Within the **<XIServerPwd>** tags, type the encrypted password.

6. Within the **<XIServerDomainName>** tags, type the domain name of the SAP PI Server.

7. Within the **<XIServer>** tags, type the name of the SAP PI Server.

8. Within the **<XiPort>** tags, type the port number of the SAP PI Server.

9. Save the file.

   Your settings are applied.

Importing the Notification Design Object

To import the notification design object:

1. Insert the SAP Interfaces DVD.

2. Navigate to the folder **SAP PI Transport Files\Integration Repository**.

3. Copy the file **XI3_0_Repository-Notification-Management_V360.tpz**.

4. On the SAP PI Server, paste the copied file to the folder **\us-r\sap\<SID>\SYS\global\xi\repository_server\import**, where **<SID>** is the system ID of the SAP PI Server.

5. In a web browser, navigate to one of the following URLs depending on the SAP PI Server version you are using:

   - Version prior to SAP PI 7.3: **http://<SAP PI Server>:<port number>/rep/start/index.jsp**.
   - SAP PI 7.3: **http://<SAP PI Server>:<port number>/dir/start/index.jsp**.

   Where **<SAP PI Server>** is the name of the SAP PI Server and **<port number>** is the port number of the specified SAP PI Server.

   Depending on the SAP PI Server version you are using, the **SAP Exchange Infrastructure** window or the **Process Integration 7.3** window appears.

6. If you are using a version prior to SAP PI 7.3, click the **Integration Repository** link.

   -or-

   If you are using SAP PI 7.3, click the **Enterprise Services Builder** link.

   A Logon screen appears.

7. Log on as an administrator.

   Depending on the SAP PI Server version you are using, the **Design: Integration Builder** window or the **Enterprise Services Builder** window appears.

8. On the **Tools** menu, click **Import design objects**.

The **Choose Import Source** dialog box appears.

9. Select the file **XI3_0_Repository-Notification-Management_V360.tpz**, and click **OK**.

   A confirmation dialog box appears.

10. Click the **Import** button.

    The file is imported.

11. Click the **Close** button.

About Importing the Notification Configuration Object

The steps for importing the notification configuration object are different depending on which SAP PI Server version you are using. To access the appropriate instructions, click the SAP PI Server version that you are using:

- [Version prior to SAP PI 7.3](#)
- [SAP PI 7.3](#)

Importing the Notification Configuration Object using an SAP PI Version Prior to 7.3

To import the notification configuration object:

1. Insert the SAP Interfaces DVD.

2. Navigate to the folder **SAP PI Transport Files\Integration Directory**.

3. Copy the file **XI3_0_MeridiumNotificationManagemnet_V360.tpz**.

4. On the SAP PI Server, paste the copied file to the folder **\us-r\sap\<SID>\SYS\global\xi\directory_server\import**, where**<SID>** is the system ID of the SAP PI Server.

5. In a web browser, navigate to **http://<SAP PI Server>:<port number>/rep/start/index.jsp**, where **<SAP PI Server>** is the name of the SAP PI Server and <**port number>** is the port number of the specified SAP PI Server.

    The **SAP Exchange Infrastructure** window appears.

6. Click the **Integration Directory** link.

    A Logon screen appears, prompting you to log on to the Configuration: Integration Builder.

7. Log on as an administrator.

    The **Configuration: Integration Builder** window appears.

8. On the **Tools** menu, click **Import configuration objects**.

    The **Choose Import Source** window appears.

9. Select the file **XI3_0_MeridiumNotificationManagemnet_V360.tpz**, and click **OK**.

    A confirmation dialog box appears.

10. Click the **Import** button.

    The file is imported.

11. Click the **Close** button.

> You will now need to [activate the RFCReceiverToECC object](#). To do so, you will need to remain logged on to the Configuration: Integration Builder.

Importing the Notification Configuration Object using SAP PI 7.3

To import the notification configuration object:

1. Insert the SAP Interfaces DVD.

2. Navigate to the folder **SAP PI Transport Files\Integration Directory**.

3. Copy the file **XI3_0_MeridiumNotificationManagemnet_V360.tpz**.

4. On the SAP PI Server, paste the copied file to the folder **\us-r\sap\<SID>\SYS\global\xi\directory_server\import**, where **<SID>** is the system ID of the SAP PI Server.

5. In a web browser, navigate to **http://<SAP PI Server>:<port number>/dir/start/index.jsp**, where **<SAP PI Server>** is the name of the SAP PI Server and **<port number>** is the port number of the specified SAP PI Server.

   The **Process Integration 7.3** window appears.

6. Click the **Integration Builder** link.

   A Logon screen appears, prompting you to log on to the Configuration: Integration Builder.

7. Log on as an administrator.

   The **Configuration: Integration Builder** window appears.

8. On the **Tools** menu, click **Import configuration objects**.

   The **Select import source** window appears.

9. Click the **Server** button.

   The **Choose Import Source** window appears.

10. Select the file **XI3_0_MeridiumNotificationManagemnet_V360.tpz**, and click **OK**.

    A confirmation dialog box appears.

11. Click the **Import** button.

    The file is imported.

12. Click the **Close** button.

    You will now need to activate the RFCReceiverToECC object. To do so, you will need to remain logged on to the Configuration: Integration Builder.

About Activating the RFCReceiverToECC Object

The steps for activating the RFCReceiverToECC object are different depending on which SAP PI Server version you are using. To access the appropriate instructions, click the SAP PI Server version that you are using:

- [Version prior to SAP PI 7.3](#)
- [SAP PI 7.3](#)

Activating the RFCReceiverToECC Object using an SAP PI Version Prior to 7.3

To activate the RFCReceiverToECC object:

1. In the Configuration: Integration Builder, click the **Change Lists** tab.

2. On the **Change Lists** tab, select **XI 3.0 Import**, and then select **RFCReceiverToECC**.

3. On the right side of the screen, click the button.

4. On the **Properties** tab, confirm or type values for the following parameters:

    - RFC Server Type

    > **Note:** This parameter must be set to **SAP System**.

- Application Server
- System Number
- Authentication Mode

    > **Note:** This parameter must be set to **Use Logon Data for SAP System**.

- Logon User
- Logon Password
- Logon Language
- Logon Client

5. On the **Change Lists** tab, right-click **XI 3.0 Import**, and click **Activate**.

    A confirmation message appears.

6. Click the **Activate** button.

    The object is activated.

Activating the RFCReceiverToECC Object using SAP PI 7.3

To activate the RFCReceiverToECC object:

1. In the Configuration: Integration Builder, click the **Change Lists** tab.

2. On the **Change Lists** tab, select **XI 3.0 Import**, and then select **| SAP_ECC|RFCReceiverToECC**.

3. The **Error Loading Adapter Metadata** dialog box appears.

4. Click the **Close** button.

    The communication channel details appear on the right side of the screen.

5. On the right side of the screen, click the 🖉 button.

6. On the **Parameters** tab, in the **Adapter Type** row, select the 🗗▾ button.

    The **Choose Adapter Metadata** window appears.

7. Select the latest RFC Adapter from the list, and click the **Apply** button.

   The communication channel details return to focus.

8. On the **Properties** tab, confirm or type values for the following parameters:

   - RFC Server Type

   Note: This parameter must be set to **SAP System**.

- Application Server
- System Number
- Authentication Mode

   Note: This parameter must be set to **Use Logon Data for SAP System**.

- Logon User
- Logon Password
- Logon Language

- Logon Client

9. On the **Change Lists** tab, right-click **XI 3.0 Import**, and click **Activate**.

   A confirmation message appears.

10. Click the **Activate** button.

    The object is activated.

Activating the SOAP Communication Channels

> **Note**: You must complete the following steps *only* if you are using SAP PI version 7.3.

To activate the SOAP Communication Channels:

1. In the Configuration: Integration Builder, click the **Change Lists** tab.

2. On the **Change Lists** tab, select **XI 3.0 Import**, and then select **| MeridiumAPM_ D|SOAPSNDCRTNOTIF**.

3. The **Error Loading Adapter Metadata** dialog box appears.

4. Click the **Close** button.

   The communication channel details appear on the right side of the screen.

5. On the right side of the screen, click the ✎ button.

6. On the **Parameters** tab, in the **Adapter Type** row, select the ⬓▾ button.

   The **Choose Adapter Metadata** window appears.

7. Select the latest SOAP Adapter from the list, and click the **Apply** button.

    The communication channel details return to focus.

8. At the top of the screen, click the 🖫 button.

9. Repeats steps 2 through 8 for each of the following SOAP Channels:

    - | MeridiumAPM_D | SOAPSNDUPDNOTIF
    - | MeridiumAPM_D | SOAPSNDUPDNOTIFSYSSTAT
    - | MeridiumAPM_D | SOAPSNDUPDNOTIFUSERSTAT

10. On the **Change Lists** tab, right-click **XI 3.0 Import**, and click **Activate**.

    A confirmation message appears.

11. Click the **Activate** button.

    The changes are activated.

Importing the .EPA File

To import the .EPA file:

1. On the SAP Web Application Server, insert the SAP Interfaces DVD.

2. Log on to the SAP Portal as an administrator.

3. Click the **System Administration** tab.

4. Click the **Transport** tab.

5. In the **Detailed Navigation** section, expand the **Transport Packages** folder, and click the **Import** link.

   The Import information appears.

6. For the **Source for Package Files** option, click **Client**.

7. Click the **Browse** button.

   The **Choose File** dialog box appears.

8. Navigate to the appropriate folder on the SAP Interfaces DVD.

   - If you are using the SAP Enterprise Portal *2004 or earlier*, navigate to **Meridium SAP Certified Powered By NetWeaver Interface\SAP EP EPA export files\All (SAP EP 2004 and earlier)**.

     -or-

   - If you are using the SAP Enterprise Portal *2004s*, navigate to **Meridium SAP Certified Powered By NetWeaver Interface\SAP EP EPA export files\Data and ACL (SAP EP 2004s)**.

9. Select the **.EPA** file, and click the **Open** button.

   The **File** text box is populated with the path to the .EPA file.

10. Click the **Upload** button.

    The contents of the Business Package appear in the **Import Preview** section.

11. Click the **Import** button.

    The contents of the Business Package and the details of the import process are displayed.

    After the import process is complete, the following structure should exist under **Content Provided by Other Vendors** on the **Content Administration** tab.

Importing the .PAR File

To import the .PAR file:

1. On the SAP Web Application Server, insert the SAP Interfaces DVD.

2. Log on to the SAP Portal as an administrator.

3. Click the **System Administration** tab.

4. Click the **Support** tab.

5. In the table on the right side of the screen, in the **Area** column, click the **Portal Runtime** link.

   The **Portal Support Desk: Portal Runtime** screen appears.

6. In the table in the **Portal Anywhere Admin Tools** section, in the **Tools** column, click the **Administration Console** link.

   A new screen appears.

7. To the right of the first text box, click the **Browse** button.

8. Navigate to the following folder on the SAP Interfaces DVD: **Meridium SAP Certified Powered By NetWeaver Interface\SAP EP PAR file**.

9. Select the **.PAR** file, and click the **Open** button.

   The text box is populated with the path to the .PAR file.

8. Click the **Upload** button.

   The .PAR file is imported. You can confirm the success by searching the Messages section for the text **INFO: Meridium APM_APM has been successfully updated.**

Configuring the APMConfiguration Object

To configure the APMConfiguration object:

1. Log on to the SAP Portal as an administrator.

2. Click the **System Administration** tab.

3. Click the **System Configuration** tab.

4. Use the **Search** tab to search for the APMConfiguration object.

5. Open the APMConfiguration object.

   The **APMConfiguration** tab appears.

6. In the **Property Category** list, select **Application Settings**.

   The following text boxes are displayed:

   - **MissingParameteriViewURL**
   - **QueryWSURL**

7. In the **MissingParameteriViewURL** text box:

   a. Replace **<Host Name>** with the name of the SAP Web Application Server.

   b. Replace **<Port Number>** with the port number of the specified SAP Web Application Server.

8. In the **QueryWSURL** text box, delete the existing text, and type `http://<Meridium APM Web Server>/Meridium APMSer-vices/ETLQuery.asmx`, where **<Meridium APM Web Server>** is the name of the machine on which the Meridium APM Web Services is installed.

9. Click the **Save** button.

10. In the **Property Category** list, select **User Mapping**.

11. In the **User Mapping Type** list, select **User**.

12. Click the **Save** button.

13. In the **Display** list, select **System Aliases**.

14. In the **Alias Name** text box, type: `APMPBNWConfiguration`

15. Click the **Add** button.

16. Click the **Save** button.

17. In the **Display** list, select **Permissions**.

18. In the **Search for** text box, type: `*APM*`

   Note: Make sure that you are searching in Roles, not Users.

19. Click the **Add** button.

    The permissions associated with the returned roles appear in the **Assigned Permissions** section.

20. In the first row of the **Assigned Permissions** section:

    a. In the **Administrator** column, select **Read**.

    b. In the **End User** column, select the check box.

21. Click the **Save** button.

    The changes are saved. A message appears, indicating that the permissions are being changed and asking if you are sure that you want to continue.

22. Confirm the operation.

Configuring the R3Systems Object

To configure the R3Systems object:

1. Log on to the SAP Portal as an administrator.

2. Click the **System Administration** tab.

3. Click the **System Configuration** tab.

4. On the **Browse** tab, navigate to **Content Provided by Other Vendors\Content for Specialists\Meridium Business Package for APM PBNW\Systems\R3Systems**.

5. Open the **R3Systems** object.

6. Confirm or type values for the following fields:

   - Application Host
   - Gateway Host
   - Gateway Service
   - Logon Method

     Note: The logon method must be set to **UIDPW**.

   - SAP Client
   - SAP System ID
   - SAP System Number
   - User Mapping

     Note: The user mapping must be set to **admin, user**.

7. Click the **Save** button.

8. In the **Display** list, select **System Aliases**.

9. In the **Alias** text box, type: `SAP_R3`

10. Click the **Add** button.

11. Click the **Save** button.

12. In the **Display** list, select **Permissions**.

13. In the **Search for** text box, type: `*APM*`

    Note: Make sure that you are searching in Roles, not Users.

14. Click the **Add** button.

The permissions associated with the returned roles appear in the **Assigned Permissions** section.

15. In the first row of the **Assigned Permissions** section:

    a. In the **Administrator** column, select **Read**.

    b. In the **End User** column, select the check box.

16. Click the **Save** button.

    The changes are saved. A message appears, indicating that the permissions are being changed and asking if you are sure that you want to continue.

17. Confirm the operation.

Granting the Everyone Group Permissions to the PM Notification iView

Note: The following instructions apply only if you are using SAP NetWeaver 6.40.

To grant the Everyone group permissions to the PM Notification iView:

1. Log on to the SAP Portal as an administrator.

2. Click the **Content Administration** tab.

3. Click the **Portal Content** tab.

4. On the **Browse** tab, select **Show PM Notification**.

   The **Show PM Notification** tab appears.

5. On the **Show PM Notification** tab, in the **Display** list, select **Permissions**.

6. In the **Assign New Permissions** section, search for the **Everyone** group.

7. Click the **Add** button.

8. In the first row of the **Assigned Permissions** section:

   a. In the **Administrator** column, select **Read**.

   b. In the **End User** column, select the check box.

9. Click the **Save** button.

   The changes are saved.

Determining Which Users Can See the APM PBNW Certification Tab

To determine which users can see the **APM PBNW Certification** tab in the SAP Portal, you will need to assign the Meridium APM PBNW User Showcase Role to the desired users.

To determine which users can see the APM PBNW Certification tab:

1. Log on to the SAP Portal as an administrator.

2. Click the **User Administration** tab.

3. Assign the **Meridium APM PBNW User Showcase Role** to the users that you mapped to the SAP_R3 system.

   > ŒHint: For more information about assigning roles to users, see the SAP Help on the SAP Help site.

   The roles are associated with the selected users. These users will now see the APM PBNW Certification tab in the SAP Portal.

Mapping Users to the SAP_R3 System

After you have [determined which users should be allowed to see the APM PBNW Certification tab in the SAP Portal](#), you will need to map those users to the SAP_R3 system object.

For details on how to map users to a system, see the SAP documentation located on the SAP Help site.

Configuring the Query iView

The following instructions assume that you know the Catalog path to the Meridium APM query that will be referenced by the Query iView.

While the query does not need to exist in the Meridium APM Catalog before you can perform these steps, if it does not exist, when it is eventually created, the query must be saved with the name that you specify using the following steps and to the Catalog folder path that you specify using the following steps.

To configure the Query iView:

1. Log on to the SAP Portal as an administrator.

2. Click the **Content Administration** tab.

3. Click the **Portal Content** tab.

4. On the **Browse** tab, navigate to **Portal Content\Content Provided by Other Vendors\Content for Specialists\Meridium Business Package for APM PBNW\iViews**.

5. Open the **Query** object.

   The **Query** tab appears.

6. On the **Query** tab, in the **Parameters to Pass from Page Request (for URL Isolation)** text box, delete the existing text, and type:

   ```
   <Meridium APM Web Server>,<Meridium APM Database Name>,<Merdium User ID>,<Meridium APM Password>,<Meridium APM Catalog Path>,[Query Parameters]
   ```

   ...where:

   - **<Meridium APM Web Server>** is the name of the Meridium APM Web Server.
   - **<Meridium APM Database Name>** is the name of the database in which the query exists (as it appears in the Data Source Manager in the **Database Name** cell).
   - **<Merdium User ID>** is the user ID of a Meridium APM Security User that can log into the specified database.
   - **<Meridium APM Password>** is the password for the specified Meridium APM Security User.
   - **<Meridium APM Catalog Path>** is the Catalog path of the query whose results should be displayed in SAP.
   - **[Query Parameters]** is a value that you want to supply for a prompt in the query. If you want to pass in multiple prompt values, separate each value with a | (pipe). To type a pipe, you can press the Shift + \ (backspace) keys.

     This parameter is optional. If the query contains prompts and you do not pass in prompt values, when a user runs the query from the SAP Portal, the prompts will be displayed, and the user will need to select values manually.

7. Click the **Save** button.

    The changes are saved.

Configuring Meridium APM to Create SAP Notifications Using PI

By default, Meridium APM will create SAP Notifications from Recommendation records using the non-PI-based approach, which requires only an SAP Backend System in the SAP landscape. If desired, you can configure Meridium APM to create SAP Notifications from Recommendation records using the SAP Backend System and an SAP PI Server in the SAP landscape.

> **Note:** After you complete the following steps, you will also need to change the default datasheet setting for the desired families.

To configure Meridium APM to use the PI-based approach for creating SAP Notifications:

1. On the **Entity Family** tab, select the Recommendation family whose Recommendation records you want to use to generate SAP Notifications.

2. In the **Tasks** section, click the **Manage Family Business Rules** link.

   The **Meridium APM Rules Editor** (VSTA) appears, displaying the family rule project for the selected family.

3. Add the reference **Library.Meridium.IntegrationInterfaces**.

4. In the **Project Explorer** pane, double-click the family file. For example, if you opened the family rule project for the Meridium General Recommendation family, you would double-click the file MI_GENRECOMM.vb.

   The associated code appears.

5. Below the last **Imports** statement, type **Imports Library.Meridium.IntegrationInterfaces**.

6. Between the text **End Sub** and **End Class**, type the following text:

```
Public Overrides Sub BeforeInsert()
      CreateSAPNotification()
End Sub
Public Overrides Sub BeforeUpdate()
      CreateSAPNotification()
End Sub
Private Sub CreateSAPNotification()
      RecommendationInterfaces.CreateSAPNotification(CurrentEntity, Recom-
      mendationInterfaces.Notification_Type, RecommendationInterfaces._URL)
End Sub
```

   The final code should look like this, where the additional code is outlined in red:

```
Option Strict On
Option Explicit On

Imports Meridium.Core.DataManager
Imports Meridium.Core.DataManager.Customization
Imports Meridium.Core.Internals
Imports Meridium.Core.Metadata
Imports Meridium.Core.Security.ApplicationUser
Imports Meridium.Core.Uom
Imports System
Imports System.Xml
Imports Library.Meridium.IntegrationInterfaces

<MetadataFamily()> _
Public Class MI_GENRECOM
    Inherits Baseline.MI_GENRECOM.MI_GENRECOM

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)
    End Sub

    Public Overrides Sub BeforeInsert()
        CreateSAPNotification()
    End Sub

    Public Overrides Sub BeforeUpdate()
        CreateSAPNotification()
    End Sub

    Private Sub CreateSAPNotification()
        RecommendationInterfaces.CreateSAPNotification(CurrentEntity, RecommendationInterfaces.Notification_Type, RecommendationInterfaces._URL)
    End Sub
End Class
```

7. Build the project.

8. Save the project.

9. Compile the family.

SAP Interfaces Security Groups

Meridium APM provides the following baseline Security Groups for use with the SAP Interfaces:

- MI SAP Interface Administrator
- MI SAP Interface User

The following table lists the family-level privileges that exist for these Security Groups.

Entity Families		
Family	MI SAP Interface Administrator	MI SAP Interface User
Confirmation	View, Update, Insert, Delete	View, Update, Insert
Equipment	View, Update, Insert, Delete	View, Update, Insert
Functional Location	View, Update, Insert, Delete	View, Update, Insert
SAP System	View, Update, Insert, Delete	View
Site Reference	View	View
Work History	View, Update, Insert, Delete	View, Update, Insert
Work History Detail	View, Update, Insert, Delete	View, Update, Insert
Relationship Families		
Family	MI SAP Interface Administrator	MI SAP Interface User
Equipment Has Equipment	View, Update, Insert, Delete	View, Update, Insert, Delete
Functional Location Has Equipment	View, Update, Insert, Delete	View, Update, Insert, Delete
Functional Location Has Functional Location(s)	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Confirmation	View, Update, Insert, Delete	View, Update, Insert, Delete

Entity Families		
Has Event Detail	View, Update, Insert, Delete	View, Update, Insert, Delete
Has SAP System	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Work History	View, Update, Insert, Delete	View, Update, Insert, Delete
User Assignment	View, Update, Insert, Delete	View, Update, Insert, Delete

Options for Running the Extraction Interfaces

To run an extraction interface, you can use any of the following options:

- Schedule the interface to be run automatically.
- Run the interface manually in the foreground. This documentation provides individual instructions for running each of the following extraction interfaces manually in the foreground:
  - Functional Location Extraction
  - Functional Location Characteristics Extraction
  - Equipment Extraction
  - Equipment Characteristics Extraction
  - Notification and Order Extraction
- Run the interface manually in the background.

  > **Note:** You might want to run an interface in the background to avoid SAP time-out errors, which can occur if you are extracting a large amount of data.

Note that if an SAP field that Meridium APM references during the extraction process contains a special character (e.g., an ellipsis), during the extraction process, the character is ignored. For example, consider a scenario where a field contains the following value:

Test ...

In this case, when you run the extraction interface, the ellipsis is ignored, and the Meridium APM field will display only the value *Test*.

> **Note:** In rare cases, the special characters cannot be removed. In this case, the whole line containing that text is removed and replaced with a message indicating that some lines have been truncated because of unacceptable characters.

About Scheduling the Interfaces to Run Automatically

Using the SAP Interfaces module, you can extract items from SAP to create and update records in the Meridium APM system. While we provide reports that you can run manually each time that you want to extract new or updated items in SAP, you will probably want to schedule the items to be extracted on an automatic, recurring basis. This method ensures synchronization between your SAP database and your Meridium APM database.

To schedule SAP items to be extracted automatically, you will need to run the /MIAPM/MASTER_INTERFACE report manually one time to provide information that tells SAP how often to rerun the report automatically. For example, when you run the report the first time, you might specify that you want the report to be rerun every night.

Each time the /MIAPM/MASTER_INTERFACE report is run, it will run the following reports automatically:

- /MIAPM/EQUIPMENT_INF
- /MIAPM/EQUIPMENT_CHARACT_INF
- /MIAPM/FUNCTIONAL_LOCATION_INF
- /MIAPM/FUNC_LOC_CHARACT_INF
- /MIAPM/WH_NOTIF_WITH_WO
- /MIAPM/WH_WORK_ORDER
- /MIAPM/WH_NOTIFICATION
- /MIAPM/WORK_HISTORY_DETAILS

The /MIAPM/MASTER_INTERFACE report runs the individual reports using the values that are specified in the baseline variants that are associated with each individual report. For example, when the /MIAPM/MASTER_INTERFACE report runs the /MIAPM/EQUIPMENT_INF, it uses the values that are specified in the baseline variant /MIAPM/EQ_INF. By default, the baseline variants are configured to extract all items for all plants. If you want the /MIAPM/MASTER_INTERFACE report to extract only specific items, you will need to modify the baseline variants to provide the necessary values.

> **Note:** The /MIAPM/MASTER_INTERFACE report will run successfully only if the SAP Interfaces - Foundation license is active.

Baseline Variants

The following table lists the baseline reports and their associated variants that are provided by default for the SAP Interfaces. These variants will be run automatically by the report /MIAPM/MASTER_INTERFACE.

Report	Variant
/MIAPM/EQUIPMENT_INF	/MIAPM/EQ_INF
/MIAPM/EQUIPMENT_CHARACT_INF	/MIAPM/ETC_INF
/MIAPM/FUNCTIONAL_LOCATION_INF	/MIAPM/FL_INF
/MIAPM/FUNC_LOC_CHARACT_INF	/MIAPM/FTC_INF
/MIAPM/WH_NOTIF_WITH_WO	/MIAPM/NTF_WO
/MIAPM/WH_WORK_ORDER	/MIAPM/WO_INF
/MIAPM/WH_NOTIFICATION	/MIAPM/NTF_INF
/MIAPM/WORK_HISTORY_DETAILS	/MIAPM/WHD_INF

Modifying Baseline Variants

To modify a baseline variant:

1. In SAP, run the following transaction: **SE38**

   The **ABAP Editor: Initial Screen** appears.

2. In the **Program** text box, type the name of the report whose variant you want to modify. For example, to modify the variant for the /MIAPM/EQUIPMENT_INF report, you would type */MIAPM/EQUIPMENT_INF*.

3. Click the ⬇ button.

   A screen appears displaying the parameters for the specified report. For example, the screen for the /MIAPM/EQUIPMENT_INF report looks like this:

4. On the **Go To** menu, point to **Variants**, and then click **Get**.

   The **Find Variant** window appears.

5. In the **Created by** text box, delete the value.

6. Click the ⊕ button.

   The **ABAP: Variant Directory of Program <Report Name>** window appears, displaying a list of variants, where <Report Name> is the name of the currently displayed report (e.g., /MIAPM/EQUIPMENT_INF).

7. Double-click the row containing the baseline variant that is associated with the currently displayed report. For example, for the report /MIAPM/EQUIPMENT_INF, you would double-click the row containing the variant */MIAPM/EQ_INF*.

   The screen displaying the report parameters returns to focus, and the values that are defined in the selected variant are displayed. For example, the values that are defined in the baseline variant /MIAPM/EQ_INF look like this:

Meridium interface to extract Equipment from SAP

Selection Parameters

Equipment			
Equipment Creation Date		to	
Equipment Change Date		to	
Maintenance Plant	[*] *		
Equipment Category			
Equipment Type			
Equipment Classification			

Advanced Options

Advanced Options

Logging Options

Trace Level — Summary, Errors, and Success

Execution Mode

☐ Parallel Run (Exe. Background)

Simulation

☐ Simulation Mode — 0   Maximum No. of Objects

APM Data Source

8. Modify the values as desired.

> **Note:** We recommend that you leave the date text boxes empty. Doing so causes the report /MIAPM/MASTER_INTERFACE to use the values in the /MIAPM/CTRL_ LOG table to determine the range of data to include when it runs.

9. When you are finished modifying the values, click the 🖫 button.

The values are saved with the variant.

Scheduling the Interfaces to Run Automatically

> **Note:** The following instructions will work correctly only if the SAP Interfaces - Foundation license is active.

To schedule the interfaces to run automatically:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

    The **Display IMG** screen appears.

2. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Scheduling Background Jobs for Interfaces**.

3. In the **Schedule background job to run periodically** row, click the ⊕ button.

    The **Define Background Job** screen appears.

4. In the **Job name** text box, type a name for the job.

5. In the **Job class** text box, specify the desired job class.

6. In the **Exec. Target** text box, select the SAP instance on which the background job needs to run.

7. Click the **Step** button.

    The **Create Step 1** screen appears.

8. In the **Name** text box, type **/MIAPM/MASTER_INTERFACE**.

9. Click the **Check** button.

10. Click the 💾 button.

    The **Step List Overview** screen appears.

11. Click the 🔙 button.

12. Click the **Start Condition** button.

    The **Start Time** screen appears.

13. Specify the schedule on which you want the report to be run.

Select the **Periodic job** check box.

14. When you are finished specifying the schedule, save the job.

    The job is saved and set to a Released state. When the schedule that you specified causes the job to be run, the job will be transitioned to the Completed state, and a new Released job will be created.

    In addition, each time the job is run without error, a log entry is made in the /MIAPM/CTRL_LOG table (regardless of whether any new or updated data was available in SAP when the job was run).

    > ŒHint: To see a log indicating the success or failure of the process, you can run transaction SLG1 and search for the object /MIAPM/INF.

About the /MIAPM/CTRL_LOG Table

When an extraction interface is executed, an entry is made in the /MIAPM/CTRL_LOG table indicating the number of records that were extracted with errors, warnings, informational messages, and success for a given extraction creation and change date.

The /MIAPM/CTRL_LOG table is used if you have scheduled an extraction interface to be run on a recurring, automatic basis. Each time that the interface is run, the creation and change dates in the previous log entry are used to determine the creation and change dates that should be used for the next execution process.

For example, suppose the Equipment Extraction Interface is run on a nightly basis, and the current day is December 21, 2011. In this case, for the *first* extraction process that is run, assuming that no dates were specified in the baseline variants, it will extract all Equipment items that were created or changed through December 21, 2011.

For example, consider the following row in the /MIAPM/CTRL_LOG table.

Display Control Logs										
Appl. Log Number	Interface Program Name	Program Variant	Start Creation Date	End Creation Date	Start Change Date	End Change Date	Error Cnt	Sucess Cnt	Infor. Cnt	Warn. Cnt	Operation
00000000000000061196	/MIAPM/EQUIPMENT_INF	EQUIP-350	01.01.1900	21.12.2011	01.01.1900	21.12.2011	000000	003853	002536	000000	B

Because the *End Creation Date* and *End Change Date* is December 21, 2011, the next time it is run, it will attempt to extract Equipment items that were created or updated starting on December 21, 2011.

Consider the following image, which shows that all Equipment created or updated between January 1, 1900 and December 21, 2011 is initially extracted, and the process completes on December 23, 2011 (indicated by the diamond).

In this case, the start dates in the /MIAPM/CTRL_LOG table will be *01/01/1900*, and the end dates in the /MIAPM/CTRL_LOG table will be *12/21/2011*.

If the interface is scheduled to run nightly, because it finished running on 12/23/2011, it will run again on 12/24/2011. At that time, it will extract all Equipment that was created or updated between 12/21/2011 and 12/24/2011, as indicated in the following image.

All Equipment Created or
Updated
12/21/2011 - 12/24/2011

01/01/1900

12/21/2011

12/24/2011

Accessing the /MIAPM/CTRL_LOG Table

To access the /MIAPM/CTRL_LOG table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **System Monitoring and Error Handling**.

3. In the **View Control Log History** row, click the 🕒 button.

   The **View Control Log History** screen appears.

4. In any of the following filters, provide values to limit the results that are returned in the log:

   - **Log Number:** The log number that was created automatically when the master interface was last run.

> ŒHint: This is the same log number that is used to track entries in the SLG1 log.

- **Program Name:** The name of the interface that was run. Because these instructions assume that you want to view the log for the master interface, which runs multiple individual interfaces automatically, you should leave this text box empty.
- **Program Variant:** The name of the variant that was used during the execution process.
- **Processing Mode:** The mode that was used to run the interface. You can select one of the following options:
  - **Batch Processing:** The interface was run as a background job. If you followed the [documented instructions for running the master interface](#), you should select this value.
  - **Dialog Processing:** The interface was run in the foreground.

> Note: The *Batch Input Processing* value does not apply to the master interface and should not be selected.

- **Creation Date:**
  - **Start Date:** The start date of the Creation Date range that used when the master interface was run.
  - **End Date:** The end date of the Creation Date range that was used when the master interface was run.
- **Change Date:**
  - **Start Date:** The start date of the Change Date range that was used when the master interface was run.
  - **End Date:** The end date of the Change Date range that was used when the master interface was run.

5. When you are finished providing values in the available filters, click the ⊕ icon.

   The **Display Control Logs** screen appears, displaying a row for each log that was created.

View Control Log History

Refresh

Total Records   86

Display Control Logs

Appl. Log Number	Interface Program Name	Program Variant ...	Start Creation Date	End Creation Date	Start Change Date	End Change Date
00000000000001581468	/MIAPM/WH_NOTIFICATION	&0000000000040	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001559741	/MIAPM/FUNCTIONAL_LOCATION_I...	SK_VAR_PERF_...	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001577228	/MIAPM/FUNCTIONAL_LOCATION_I...	SK_VAR_PERF_...	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001581579	/MIAPM/WH_NOTIFICATION	&0000000000041	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001585691	/MIAPM/WH_NOTIFICATION	&0000000000042	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001227107	/MIAPM/EQUIPMENT_CHARACT_INF	&0000000000001	01.01.1900	26.07.2012	01.01.1900	26.07.2012
00000000000001589908	/MIAPM/WH_NOTIFICATION	&0000000000043	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001591749	/MIAPM/WH_NOTIF_WITH_WO	&0000000000025	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001591823	/MIAPM/WH_NOTIF_WITH_WO	&0000000000026	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001593606	/MIAPM/WH_NOTIF_WITH_WO	&0000000000027	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001595418	/MIAPM/WH_NOTIF_WITH_WO	&0000000000028	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001599580	/MIAPM/WH_NOTIFICATION	&0000000000044	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001621813	/MIAPM/WH_WORK_ORDER	&0000000000032	01.01.1900	10.08.2012	01.01.1900	10.08.2012
00000000000001644282	/MIAPM/WH_WORK_ORDER	&0000000000034	01.01.1900	10.08.2012	01.01.1900	10.08.2012

Running the Functional Location Extraction Interface

Using the SAP Interfaces module, you can extract Functional Locations manually, or you can schedule them to be extracted automatically on a recurring basis. The following instructions explain how to extract them manually.

> **Note:** You can run the Functional Location Extraction Interface successfully only if the SAP Interfaces - Foundation license is active.

To extract Functional Locations from SAP:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Execute Reports for Data Extraction**.

3. In the **Functional Location Report** row, click the 🕒 button.

   The **Meridium interface to extract Functional Locations from SAP** screen appears.

4. In the **Functional Location** text boxes, type or select Functional Location IDs that define the range of Functional Location IDs for the Functional Locations that you want to extract. For example, if you want to extract Functional Locations with the IDs *1001273* through *1001293*, you would specify the Functional Locations IDs as shown in the following image.

Functional Location	1001273	to	1001293	⇨

5. In the **Func. Loc. Creation Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates of the Functional Locations that you want to extract. For example, if you want to extract Functional Locations that were created on or after January 1, 1990 and on or before January 1, 2008, you would specify the dates as shown in the following image.

Func. Loc. Creation Date	01/01/1990	to	01/01/2008	⇨

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

6. In the **Func. Loc. Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates of the Functional Locations that you want to extract. For example, if you want to extract Functional Locations that were updated on or after January 1, 2008 and on or before December 1, 2008, you would specify the dates as shown in the following image.

Func. Loc. Change Date	01/01/1990	to	01/01/2008	⇨

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

7. In the **Maintenance Plant** text box, type the ID of the Maintenance Plant whose Functional Location data you want to extract. To specify multiple Maintenance Plants, you can use the ⇨ button to access the **Multiple Selection for Main-tenance Plant** window.

   When you run the extraction report, the ABAP code will look at the /MIAPM/PARAMS table to determine the Meridium APM system to and from which to send data for this Maintenance Plants. To see an example, click here.

   <u>Example</u>

   Suppose that two active rows exist in the /MIAPM/PARAMS table, and they contain the entries that are shown in the following tables:

   Row 1

APM Data Source	Data Source A
APM App Server	App Server A
Plant	Plant 1000

Row 2

APM Data Source	Data Source B
APM App Server	App Server B
Plant	Plant 2000

If you run the Functional Location Extraction Interface and select Plant 1000 and Plant 2000, when the Functional Locations are extracted...

- The Functional Locations for Plant *1000* will be extracted to Data Source A, which is connected to Application Server A.

- The Functional Locations for Plant *2000* will be extracted to Data Source B, which is connected to Application Server B.

> **Note:** The **Maintenance Plant** text box is required. To specify *all* Maintenance Plants, type: *

8. In the **Func. Loc. Category** text box, type the ID of the Functional Location Category that identifies the Functional Locations that you want to extract. To specify multiple categories, you can use the [icon] button to access the **Multiple Selection for Func. Loc. Category** window.

9. In the **Func. Loc. Type** text box, type the ID of the Functional Location Type that identifies the Functional Locations that you want to extract. To specify multiple types, you can use the [icon] button to access the **Multiple Selection for Func. Loc Type** window.

10. In the **Func. Loc. Classification** text box, type the ID of the Functional Location Classification that identifies the Functional Locations that you want to extract. To specify multiple classifications, you can use the [icon] button to access the **Multiple Selection for Func. Loc. Classifications** window.

11. If you want to define advanced extraction criteria, click the **Advanced Options** button. Advanced Options

The **Advanced Options** section appears below the **Advanced Options** button.

12. Click here for details on defining advanced extraction criteria.

    a. To change the level of detail that the SLG1 log will contain, in the **Trace Level** list, select one of the following values:

- **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error* messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

- **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

Note that the default value in the **Trace Level** list is *Summary, Errors, and Success*, which causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully.

    b. To configure the system to process extractions in parallel, select the **Parallel Run (Exe. Background)** check box.

The following additional text boxes appear:

- **Batch Size:** Identifies the number of records that will be extracted during each parallel process. The default value is *5*.

- **Max. No. of Batches:** Identifies the maximum number of batches that will be created before the system stops to check the status of each batch's progress. The default value is *10*.

- **Wait Time Between Batches (s):** Identifies the amount of time (in seconds) that the system will wait before creating a new batch to check the status of each previous batch's progress. The default value is *2*.

c.   If you selected the **Parallel Run (Exe. Background)** check box and you want to modify any of the values in the related text boxes, in the related text boxes, delete the existing values, and type the desired values.

d.   To simulate an extraction process without actually extracting the records to Meridium APM, select the **Simulation Mode** check box.

The following additional items become enabled:

- **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Functional Location items that were created within the specified date range.

- **APM Data Source list:** Identifies the Meridium APM data source to which you want to simulate the extraction process.

> **Note:** You should modify the advanced option settings only if you have significant experience with SAP. Novice and occasional users should not modify the advanced option settings.

13. Click the ⊕ button.

The report runs, and the Functional Locations that meet the specified criteria are extracted and used to create Functional Location records in Meridium APM. Note that all fields on the Functional Location records are disabled.

> Œ**Hint:** To see a detailed log indicating the success or failure of the process, you can run transaction SLG1 and search for the object /MIAPM/INF.

Running the Functional Location Characteristics Extraction Interface

Using the SAP Interfaces module, you can extract Functional Location characteristics manually, or you can schedule them to be extract automatically on a recurring basis. The following instructions explain how to extract them manually.

> **Note:** You can run the Functional Location Characteristics Extraction Interface successfully only if the SAP Interfaces - Technical Characteristics license is active.

To extract Functional Location characteristics from SAP:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Execute Reports for Data Extraction**.

3. In the **Functional Location Technical Characteristics Report** row, click the ⊕ button.

   The **Meridium interface to extract Func. Loc. characteristics from SAP** screen appears.

4. In the **Functional Location** text boxes, type or select Functional Location IDs that define the range of Functional Location IDs for the Functional Locations whose characteristics you want to extract. For example, if you want to extract characteristics for Functional Locations with the IDs *1001273* through *1001293*, you would specify the Functional Locations IDs as shown in the following image.

| Functional Location | 1001273 | to | 1001293 | |

5. In the **Func. Loc. Creation Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates of the Functional Locations whose characteristics you want to extract. For example, if you want to extract characteristics for Functional Locations that were created on or after *January 1, 1990* and on or before *January 1, 2008*, you would specify the dates as shown in the following image.

| Func. Loc. Creation Date | 01.01.1900 | to | 01.01.2008 | |

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

6. In the **Func. Loc. Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates of the Functional Locations whose characteristics you want to extract. For example, if you want to extract characteristics for Functional Locations that were updated on or after *January 1, 2008* and on or before *December 1, 2008*, you would specify the dates as shown in the following image.

| Func. Loc. Change Date | 01.01.1900 | to | 01.01.2008 | |

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

7. In the **Maintenance Plant** text box, type the ID of the Maintenance Plant that is associated with the Functional Locations whose characteristics you want to extract. To specify multiple Maintenance Plants, you can use the ⇨ button to access the **Multiple Selection for Maintenance Plant** window.

When you run the extraction report, the ABAP code will look at the /MIAPM/PARAMS table to determine the Meridium APM system to and from which to send data for this Maintenance Plants. To see an example, click here.

Example

Suppose that two active rows exist in the /MIAPM/PARAMS table, and they contain the entries that are shown in the following tables:

Row 1

APM Data Source	Data Source A
APM App Server	App Server A
Plant	Plant 1000

Row 2

APM Data Source	Data Source B
APM App Server	App Server B
Plant	Plant 2000

If you run the interface and selects Plant 1000 and Plant 2000, when the Functional Location characteristics are extracted...

- The characteristics for Functional Locations in Plant *1000* will be extracted to Data Source A, which is connected to Application Server A.

- The characteristics for Functional Locations in Plant *2000* will be extracted to Data Source B, which is connected to Application Server B.

> **Note:** The **Maintenance Plant** text box is required. To specify *all* Maintenance Plants, type: *

8. In the **Func. Loc. Category** text box, type the ID of the Functional Location Category that identifies the Functional Locations whose characteristics you want to extract. To specify multiple categories, you can use the ⇨ button to access the **Multiple Selection for Func. Loc. Category** window.

9. In the **Func. Loc. Type** text box, type the ID of the Functional Location Type that identifies the Functional Locations whose characteristics you want to extract. To specify multiple types, you can use the ⇨ button to access the **Multiple Selection for Func. Loc. Type** window.

10. In the **Func. Loc. Classification** text box, type the ID of the Functional Location Classification that identifies the Functional Locations whose characteristics you want to extract. To specify multiple classifications, you can use the ⇨ button to access the **Multiple Selection for Func. Loc. Classifications** window. If a Functional Location has multiple classifications, the Functional Location characteristics will be extracted as long as you specify *one* of those classifications.

11. If you want to define advanced extraction criteria, click the **Advanced Options** button. Advanced Options

The **Advanced Options** section appears below the **Advanced Options** button.

12. Click here for details on defining advanced extraction criteria.

a. To change the level of detail that the SLG1 log will contain, in the **Trace Level** list, select one of the following values:

- **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error* messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

- **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

Note that the default value in the Trace Level list is Summary, Errors, and Success, which causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully.

b. To configure the system to process extractions in parallel, select the **Parallel Run (Exe. Background)** check box.

The following additional text boxes appear:

- **Batch Size:** Identifies the number of records that will be extracted during each parallel process. The default value is *5*.

- **Max. No. of Batches:** Identifies the maximum number of batches that will be created before the system stops to check the status of each batch's progress. The default value is *10*.

- **Wait Time Between Batches (s):** Identifies the amount of time (in seconds) that the system will wait before creating a new batch to check the status of each previous batch's progress. The default value is *2*.

c. If you selected the **Parallel Run (Exe. Background)** check box and you want to modify any of the values in the related text boxes, in the related text boxes, delete the existing values, and type the desired values.

d. To simulate an extraction process without actually extracting the records to Meridium APM, select the **Simulation Mode** check box.

   The following additional items become enabled:

   - **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Equipment characteristics that were created within the specified date range.

   - **APM Data Source list:** Identifies the Meridium APM data source to which you want to simulate the extraction process.

   > **Note:** You should modify the advanced option settings only if you have significant experience with SAP. Novice and occasional users should not modify the advanced option settings.

13. Click the ⊕ button.

    The report runs, and the characteristics for the Functional Locations that meets the specified criteria are extracted and used to create Technical Characteristic records in Meridium APM. Each Technical Characteristic record is linked automatically to the appropriate Functional Location record. If the appropriate Functional Location record does not already exist in the Meridium APM system, one is created automatically. Its fields will not contain any values, however, until you run the Functional Location Extraction Interface to update them. Note that all fields on the Technical Characteristic records are disabled.

    > Œ**Hint:** To see a detailed log indicating the success or failure of the process, you can run transaction SLG1 and search for the object /MIAPM/INF.

Running the Equipment Extraction Interface

Using the SAP Interfaces module, you can extract Equipment manually, or you can schedule them to be extract automatically on a recurring basis. The following instructions explain how to extract them manually.

> **Note:** You can run the Equipment Extraction Interface successfully only if the SAP Interfaces - Foundation license is active.

To extract Equipment from SAP:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Execute Reports for Data Extraction**.

3. In the **Equipment Report** row, click the ⊕ button.

   The **Meridium interface to extract Equipment from SAP** screen appears.

4. In the **Equipment** text boxes, type or select Equipment IDs that define the range of Equipment IDs for the Equipment that you want to extract. For example, if you want to extract Equipment with the IDs *1001273* through *1001293*, you would specify the Equipment IDs as shown in the following image.

5. In the **Equipment Creation Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates of the Equipment that you want to extract. For example, if you want to extract Equipment that was created on or after *January 1, 1990* and on or before *January 1, 2008*, you would specify the dates as shown in the following image.

| Equipment Creation Date | 01/01/1900 | to | 01/1/2008 | ⬆ |

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

6. In the **Equipment Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates of the Equipment that you want to extract. For example, if you want to extract Equipment that was updated on or after *January 1, 2008* and on or before *December 1, 2008*, you would specify the dates as shown in the following image.

| Equipment Change Date | 01/01/2008 | to | 12/01/2008 | ⬆ |

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

7. In the **Maintenance Plant** text box, type the ID of the Maintenance Plant whose Equipment data you want to extract. To specify multiple Maintenance Plants, you can use the ⬆ button to access the **Multiple Selection for Maintenance Plant** window.

When you run the extraction report, the ABAP code will look at the /MIAPM/PARAMS table to determine the Meridium APM system to and from which to send data for this Maintenance Plants. To see an example, click here.

<u>Example</u>

Suppose that two active rows exist in the /MIAPM/PARAMS table, and they contain the entries that are shown in the following tables:

Row 1

APM Data Source	Data Source A
APM App Server	App Server A
Plant	Plant 1000

Row 2

APM Data Source	Data Source B
APM App Server	App Server B
Plant	Plant 2000

If you run the Equipment Extraction Interface and selects Plant 1000 and Plant 2000, when the Equipment is extracted...

- The Equipment for Plant *1000* will be extracted to Data Source A, which is connected to Application Server A.
- The Equipment for Plant *2000* will be extracted to Data Source B, which is connected to Application Server B.

> **Note:** The **Maintenance Plant** text box is required. To specify *all* Maintenance Plants, type: ∗

8. In the **Equipment Category** text box, type the ID of the Equipment Category that identifies the Equipment that you want to extract. To specify multiple categories, you can use the 🠒 button to access the **Multiple Selection for Equipment Category** window.

9. In the **Equipment Type** text box, type the ID of the Equipment Type that identifies the Equipment that you want to extract. To specify multiple types, you can use the 🠒 button to access the **Multiple Selection for Equipment Type** window.

10. In the **Equipment Classification** text box, type the ID of the Equipment Classification that identifies the Equipment that you want to extract. To specify multiple classifications, you can use the 🠒 button to access the **Multiple Selection for Equipment Classifications** window. If an Equipment has multiple classification, the Equipment record will be extracted as long as you specify *one* of those classifications.

11. If you want to define advanced extraction criteria, click the **Advanced Options** button.

Advanced Options

   The **Advanced Options** section appears below the **Advanced Options** button.

12. Click here for details on defining advanced extraction criteria.

a. To change the level of detail that the SLG1 log will contain, in the **Trace Level** list, select one of the following values:

- **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error* messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

- **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

Note that the default value in the **Trace Level** list is *Summary, Errors, and Success*, which causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully.

b. To configure the system to process extractions in parallel, select the **Parallel Run (Exe. Background)** check box.

The following additional text boxes appear:

- **Batch Size:** Identifies the number of records that will be extracted during each parallel process. The default value is *5*.

- **Max. No. of Batches:** Identifies the maximum number of batches that will be created before the system stops to check the status of each batch's progress. The default value is *10*.

- **Wait Time Between Batches (s):** Identifies the amount of time (in seconds) that the system will wait before creating a new batch to check the status of each previous batch's progress. The default value is *2*.

c. If you selected the **Parallel Run (Exe. Background)** check box and you want to modify any of the values in the related text boxes, in the related text boxes, delete the existing values, and type the desired values.

d. To simulate an extraction process without actually extracting the records to Meridium APM, select the **Simulation Mode** check box.

The following additional items become enabled:

- **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Equipment items that were created within the specified date range.

- **APM Data Source list:** Identifies the Meridium APM data source to which you want to simulate the extraction process.

> **Note:** You should modify the advanced option settings only if you have significant experience with SAP. Novice and occasional users should not modify the advanced option settings.

13. Click the ⊕ button.

The report runs, and the Equipment that meets the specified criteria are extracted and used to create Equipment records in Meridium APM. Note that all fields on the Equipment records are disabled.

> Œ **Hint:** To see a detailed log indicating the success or failure of the process, you can run transaction SLG1 and search for the object /MIAPM/INF.

Running the Equipment Characteristics Extraction Interface

Using the SAP Interfaces module, you can extract Equipment characteristics manually, or you can schedule them to be extract automatically on a recurring basis. The following instructions explain how to extract them manually.

> **Note:** You can run the Equipment Characteristics Extraction Interface successfully only if the SAP Interfaces - Technical Characteristics license is active.

To extract Equipment characteristics from SAP:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Execute Reports for Data Extraction**.

3. In the **Equipment Technical Characteristics Report** row, click the ⊕ button.

   The **Meridium interface to extract Equipment characteristics from SAP** screen appears.

4. In the **Equipment** text boxes, type or select the Equipment IDs that define the range of Equipment IDs whose characteristic you want to extract. For example, if you want to extract characteristics belonging to Equipment with the IDs *1001273* through *1001293*, you would specify the Equipment IDs as shown in the following image.

Equipment		1001273	to	1001293	

5. In the **Equipment Creation Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates of the Equipment whose characteristics you want to extract. For example, if you want to extract characteristics for Equipment that was created on or after *January 1, 1990* and on or before *January 1, 2008*, you would specify the dates as shown in the following image.

Equipment Creation Date		01/01/1900	to	01/1/2008	

Note: To indicate today's date in either text box, you can leave the text box blank.

6. In the **Equipment Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates of the Equipment whose characteristics you want to extract. For example, if you want to extract characteristics for Equipment that was updated on or after *January 1, 2008* and on or before *December 1, 2008*, you would specify the dates as shown in the following image.

Equipment Change Date		01/01/2008	to	12/01/2008	

Note: To indicate today's date in either text box, you can leave the text box blank.

7. In the **Maintenance Plant** text box, type the ID of the Maintenance Plant that is associated with the Equipment whose characteristics you want to extract. To specify multiple Maintenance Plants, you can use the [icon] button to access the **Multiple Selection for Maintenance Plant** window.

When you run the extraction report, the ABAP code will look at the /MIAPM/PARAMS table to determine the Meridium APM system to and from which to send data for this Maintenance Plants. To see an example, click here.

Example

Suppose that two active rows exist in the /MIAPM/PARAMS table, and they contain the entries that are shown in the following tables:

Row 1

APM Data Source	Data Source A

APM App Server	App Server A
Plant	Plant 1000

Row 2

APM Data Source	Data Source B
APM App Server	App Server B
Plant	Plant 2000

If you run the interface and selects Plant 1000 and Plant 2000, when the Equipment characteristics are extracted...

- The characteristics for Equipment in Plant *1000* will be extracted to Data Source A, which is connected to Application Server A.

- The characteristics for Equipment in Plant *2000* will be extracted to Data Source B, which is connected to Application Server B.

> **Note:** The **Maintenance Plant** text box is required. To specify *all* Maintenance Plants, type: *

8. In the **Equipment Category** text box, type the ID of the Equipment Category that identifies the Equipment whose characteristics you want to extract. To specify multiple categories, you can use the ⬜ button to access the **Multiple Selection for Equipment Category** window.

9. In the **Equipment Type** text box, type the ID of the Equipment Type that identifies the Equipment whose characteristics you want to extract. To specify multiple types, you can use the ⬜ button to access the **Multiple Selection for Equipment Type** window.

10. In the **Equipment Classification** text box, type the ID of the Equipment Classification that identifies the Equipment whose characteristics you want to extract. To specify multiple classifications, you can use the ⬜ button to access the **Multiple Selection for Equipment Classifications** window. If an Equipment has multiple classifications, the Equipment characteristics will be extracted as long as you specify *one* of those classifications.

11. If you want to define advanced extraction criteria, click the **Advanced Options** button. ⬜ Advanced Options

The **Advanced Options** section appears below the **Advanced Options** button.

12. Click here for details on defining advanced extraction criteria.

    a. To change the level of detail that the SLG1 log will contain, in the **Trace Level** list, select one of the following values:

- **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error*messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

- **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

Note that the default value in the **Trace Level** list is *Summary, Errors, and Success*, which causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully.

    b. To configure the system to process extractions in parallel, select the **Parallel Run (Exe. Background)** check box.

The following additional text boxes appear:

- **Batch Size:** Identifies the number of records that will be extracted during each parallel process. The default value is *5*.

- **Max. No. of Batches:** Identifies the maximum number of batches that will be created before the system stops to check the status of each batch's progress. The default value is *10*.

- **Wait Time Between Batches (s):** Identifies the amount of time (in seconds) that the system will wait before creating a new batch to check the status of each previous batch's progress. The default value is *2*.

c. If you selected the **Parallel Run (Exe. Background)** check box and you want to modify any of the values in the related text boxes, in the related text boxes, delete the existing values, and type the desired values.

d. To simulate an extraction process without actually extracting the records to Meridium APM, select the **Simulation Mode** check box.

The following additional items become enabled:

- **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Equipment characteristics that were created within the specified date range.

- **APM Data Source list:** Identifies the Meridium APM data source to which you want to simulate the extraction process.

> **Note:** You should modify the advanced option settings only if you have significant experience with SAP. Novice and occasional users should not modify the advanced option settings.

13. Click the [icon] button.

The report runs, and the characteristics for the Equipment that meets the specified criteria are extracted and used to create Technical Characteristic records in Meridium APM. Each Technical Characteristic record is linked automatically to the appropriate Equipment record. If the appropriate Equipment record does not already exist in the Meridium APM system, one is created automatically. Its fields will not contain any values, however, until you run the Equipment Extraction Interface to update them. Note that all fields on the Technical Characteristic records are disabled.

> Œ**Hint:** To see a detailed log indicating the success or failure of the process, you can run transaction SLG1 and search for the object /MIAPM/INF.

Running the Notification and Order Extraction Interface

Note that you can extract Orders and Notifications manually, or you can schedule them to be extracted automatically on a recurring basis. The following instructions explain how to extract them manually.

> **Note:** You can run the Notification and Order Extraction Interface successfully only if the SAP Interfaces - Foundation license is active.

To run a report to extract Orders and Notifications from SAP:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Execute Reports for Data Extraction**.

3. Click the ⊕ button in one of the following rows, depending upon the type of data that you want to extract from SAP to create Work History or Work History Detail records in Meridium APM:

   - **Work History – Work Order with Notification Report** (to run the report /MIAPM/WH_NOTIF_WITH_WO)

   - **Work History Detail Report** (to run the report /MIAPM/WORK_HISTORY_ DETAILS)

   - **Work History – Notification Report** (to run the report /MIAPM/WH_ NOTIFICATION)

   - **Work History – Work Order Report** (to run the report /MIAPM/WH_WORK_ ORDER)

   The **Meridium interface to extract <Item>** screen appears, where **<Item>** is the type of item that you are retrieving from SAP. For example, if you ran the report /MIAPM/WH_NOTIF_WITH_WO, the **Meridium interface to extract Notification with Work Orders from SAP** screen would appear, as shown in the following image.

4. In the **Work Order** text boxes, type or select Order IDs that define the range of Order IDs for the Orders that you want to extract. For example, if you want to extract Orders with the IDs *1001273* through *1001293*, you would specify the Order IDs as shown in the following image.

To specify multiple IDs, you can use the button to access the **Multiple Selection for Work Order** window.

5. In the **Notification** text boxes, type or select Notification IDs that define the range of Notification IDs for the Notifications that you want to extract. For example, if you want to extract Notifications with the IDs *1001274* through *1001294*, you would specify the Notification IDs as shown in the following image.

To specify multiple IDs, you can use the button to access the **Multiple Selection for Notifications** window.

6. In the **Work History Create Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates of the Orders or Notifications that you want to extract. For example, if you want to extract Notifications that were created on or after January 1, 1990 and on or before January 1, 2008, you would specify the dates as shown in the following image.

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

7. In the **Work History Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates of the Orders or Notifications that you want to extract. For example, if you want to extract Notifications that were updated on or after January 1, 2008 and on or before December 1, 2008, you would specify the dates as shown in the following image.

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

8. In the **Work History Create Time** text box and the **to** text box beside it, type or select times that define a range of creation times of the Orders or Notifications that you want to extract.

9. In the **Work History Change Time** text box and the **to** text box beside it, type or select times that define a range of modification times of the Orders or Notifications that you want to extract.

10. In the **Maintenance Plant** text box, type the ID of the Maintenance Plant whose data you want to extract. To specify multiple Maintenance Plants, you can use the ⬛ button to access the **Multiple Selection for Maintenance Plant** window.

When you run the extraction report, the ABAP code will look at the /MIAPM/PARAMS table to determine the Meridium APM system to and from which to send data for this Maintenance Plants. To see an example, click here.

<u>Example</u>

Suppose that two active rows exist in the /MIAPM/PARAMS table, and they contain the entries that are shown in the following tables:

Row 1

APM Data Source	Data Source A
APM App Server	App Server A
Plant	Plant 1000

Row 2

APM Data Source	Data Source B
APM App Server	App Server B
Plant	Plant 2000

If you run the Order Extraction Interface and selects Plant 1000 and Plant 2000, when the Orders are extracted...

- The Orders for Plant *1000* will be extracted to Data Source A, which is connected to Application Server A.
- The Orders for Plant *2000* will be extracted to Data Source B, which is connected to Application Server B.

> **Note:** The **Maintenance Plant** text box is required. To specify *all* Maintenance Plants, type: *

11. In the **<Item> Type** text box, type the ID of the Notification Type or Order Type that identifies the Notifications or Orders that you want to extract. To specify multiple types, you can use the 🔶 button to access the **Multiple Selection for <Item> Type** window.

12. In the **<Item> User Status** text box, type the ID of the Notification User Status or Order User Status that identifies the Notifications or Orders that you want to extract. To specify multiple statuses, you can use the 🔶 button to access the **Multiple Selection for <Item> User Status** window.

13. In the **<Item> System Status** text box, type the ID of the Notification System Status or Order System Status that identifies the Notifications or Orders that you want to extract. To specify multiple statuses, you can use the 🔶 button to access the **Multiple Selection for <Item> System Status** window.

14. In the **Equipment Category** text box, type the ID of the Equipment Category that identifies the Equipment that is associated with the Notifications and Orders that you want to extract. To specify multiple categories, you can use the 🔶 button to access the **Multiple Selection for Equipment Category** window.

15. In the **Equipment Type** text box, type the ID of the Equipment Type that identifies the Equipment that is associated with the Notifications and Orders that you want to extract. To specify multiple types, you can use the 🔶 button to access the **Multiple Selection for Equipment Type** window.

16. In the **Equipment Classification** text box, type the ID of the Equipment

Classification that identifies the Equipment that is associated with the Notifications and Orders that you want to extract. To specify multiple classifications, you can use the ⮕ button to access the **Multiple Selection for Equipment Classifications** window. If an Equipment has multiple classification, the Equipment record will be extracted as long as you specify *one* of those classifications.

17. In the **Func. Loc. Category** text box, type the ID of the Functional Location Category that identifies the Functional Locations that are associated with the Notifications and Orders that you want to extract. To specify multiple categories, you can use the ⮕ button to access the **Multiple Selection for Func. Loc. Category** window.

18. In the **Func. Loc. Type** text box, type the ID of the Functional Location Type that identifies the Functional Locations that are associated with the Notifications and Orders that you want to extract. To specify multiple types, you can use the ⮕ button to access the **Multiple Selection for Func. Loc. Type** window.

19. In the **Func. Loc. Classification** text box, type the ID of the Functional Location Classification that identifies the Functional Locations that are associated with the Notifications and Orders that you want to extract. To specify multiple classifications, you can use the ⮕ button to access the **Multiple Selection for Func. Loc. Classifications** window.

20. If you want to define advanced extraction criteria, click the **Advanced Options** button. Advanced Options

   The **Advanced Options** section appears below the **Advanced Options** button.

21. Click here for details on defining advanced extraction criteria.

   a. To change the level of detail that the SLG1 log will contain, in the **Trace Level** list, select one of the following values:

      - **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error*messages will be recorded in the log. The log will, however, display the

total number of records that were extracted successfully.

- **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

Note that the default value in the **Trace Level** list is *Summary, Errors, and Success*, which causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully.

b. To configure the system to process extractions in parallel, select the **Parallel Run (Exe. Background)** check box.

The following additional text boxes appear:

- **Batch Size:** Identifies the number of records that will be extracted during each parallel process. The default value is *5*.

- **Max. No. of Batches:** Identifies the maximum number of batches that will be created before the system stops to check the status of each batch's progress. The default value is *10*.

- **Wait Time Between Batches (s):** Identifies the amount of time (in seconds) that the system will wait before creating a new batch to check the status of each previous batch's progress. The default value is *2*.

c. If you selected the **Parallel Run (Exe. Background)** check box and you want to modify any of the values in the related text boxes, in the related text boxes, delete the existing values, and type the desired values.

d. To simulate an extraction process without actually extracting the records to Meridium APM, select the **Simulation Mode** check box.

The following additional items become enabled:

- **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty items that were created within the specified date range.

- **APM Data Source list:** Identifies the Meridium APM data source to which you want to simulate the extraction process.

> **Note:** You should modify the advanced option settings only if you have significant experience with SAP. Novice and occasional users should not modify the advanced option settings.

22. Click the button.

    The report runs, and the Orders and Notifications that meet the date criteria are extracted and used to create Work History and Work History Detail records in Meridium APM. Note that all fields on the Work History and Work History Detail records are disabled.

    > Œ Hint: To see a detailed log indicating the success or failure of the process, you can run transaction SLG1 and search for the object /MIAPM/INF.

Running Interfaces in the Background

To run an interface in the background:

1. In SAP, complete the steps you would complete for running the report in the fore-
   ground (configure the interface parameters, such as creation date, change date,
   and Maintenance Plant), but do not actually execute the report.

2. On the **Program** menu, click **Execute in Background**.

   The **Background Print Parameters** window appears.

3. Select the desired settings, and when you are finished, click the ✓ button.

   The **Start Time** window appears.

At the top of the window, you will see buttons indicating options for starting the execution process. These instructions assume that you want to start the execution process immediately.

4. Click the **Immediate** button.

5. Click the 💾 button.

   The interface begins running in the background. You can check the status of the background process at any time.

Checking the Status of a Background Process

The following instructions explain how to check the status of a background process, assuming that you have run an interface in the background.

To check the status of a background process:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

    The **Display IMG** screen appears.

2. In the tree, expand **System Monitoring and Error Handling**.

3. In the **View Job Status** row, click the ⏲ button.

    The **Simple Job Selection** screen appears.

Simple Job Selection

Execute   **Extended job selection**   **Information**

| Job name | * |
| User name | ADUNCAN |

Job status

☐ Sched.   ☑ Released   ☑ Ready   ☑ Active   ☑ Finished   ☑ Canceled

Job start condition

From 26.07.2012   To 26.07.2012

or after event: ▼

Job step

ABAP program name:

4. In the available fields, specify the criteria that will cause the system to display the results of the report whose status you want to view. For example, if you want to view a job that started yesterday, in the **From** text box, you would need to type yesterday's date.

5. In the **Job Status** section, select the **Sched.** check box.

6. Click the **Execute** button.

   The **Job Overview** screen appears, displaying the background jobs that meet the specified criteria.

In each row, you can see the background jobs that meet the specified criteria. You can use the **Status** column to determine the status of the execution process. For example, processes that have been completed will show the status *Complete*.

About Viewing a Log of Extraction Failures

Each time an extraction interface is run, either manually or automatically as part of a recurring job, an entry is made in the /MIAPM/EXCEPTIONS table for each item that the code attempts to extract. If an item is extracted successfully, the corresponding row is deleted automatically. When the interface is finished running, any remaining rows in the /MIAPM/EXCEPTIONS represent items that were not extracted successfully.

The next time that the same interface is run, if one or more items exist in the /MIAPM/EXCEPTIONS table, meaning that they failed to be extracted during the previous extraction process, the code automatically attempts to extract those items again.

Optionally, when you are viewing the /MIAPM/EXCEPTIONS table, you can [rerun the extraction process](#) for the failed items directly from the table without having to rerun the interface manually or wait for it to be run again as part of a recurring job.

Accessing the /MIAPM/EXCEPTIONS Table

To access the /MIAPM/EXCEPTIONS table:

1. On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

   The **Display IMG** screen appears.

2. In the tree, expand **System Monitoring and Error Handling**.

3. In the **View/Process Exception Records** row, click the 🕒 button.

   The **View Exception Records** screen appears.

4. If desired, provide values in the available filters to limit the items that are displayed in the /MIAPM/EXCEPTIONS table.

   > **Note:** The **APM Data Source** list displays only data sources that are listed as *active* in the /MIAPM/PARAMS table.

5. When you are finished providing values in the available filters, click the 🕒 icon.

   The **View Exception Records** screen appears, displaying a row for each item that was not extracted successfully.

Running an Extraction Interface from the /MIAPM/EXCEPTIONS Table

To run an extraction interface while viewing the /MIAPM/EXCEPTIONS table:

1. While [viewing the /MIAPM/EXCEPTIONS table](#), on the toolbar, click either of the following buttons:

   - ![Process]

   - ![Process in Background]

   The **Process Exception Records** screen appears.

   ![Process Exception Records screen with Logging Options showing Trace Level "Summary, Errors, and Success" and Execution Mode with "Parallel Run (Exe. Background)" checkbox]

2. In the **Trace Level** list, select the level of detail that you want the SLG1 log to contain about this extraction process. You can choose one of the following options:

   - **Summary, Errors, and Success:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully. This is the default selection.

   - **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error* messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

   - **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

3. To configure the system to process initial extractions in parallel, select the **Parallel Run (Exe. Background)** check box.

   The following additional text boxes appear:

   - **Batch Size:** Identifies the number of records that will be extracted during each parallel process. The default value is *5*.

- **Max. No. of Batches:** Identifies the maximum number of batches that will be created before the system stops to check the status of each batch's progress. The default value is *40*.

- **Wait Time Between Batches:** Identifies the amount of time (in seconds) that the system will wait before creating a new batch to check the status of each previous batch's progress. The default value is *2*.

4. If you selected the **Parallel Run (Exe. Background)** check box and you want to modify any of the values in the related text boxes, in the related text boxes, delete the existing values, and type the desired values.

   The selected items are reprocessed, and the **View Exception Records** screen returns to focus.

Creating an SAP Notification from a Recommendation Record

The following instructions assume that the Create Work Request field exists in the family of the desired Recommendation record and that it exists on the datasheet. This field is already available on all baseline Recommendation datasheets for the baseline Recommendation families from which you are allowed to create SAP Notifications.

In addition, the following instructions explain how to specify the type of Notification that you want to create.

> **Note:** If you do not specify the type of Notification that you want to create, the Meridium APM system will create *M1* Notifications by default.

In order to specify the type of Notification that you want to create, you must use the Notification Type field. These instructions assume, therefore, that the Notification Type field exists in the family of the desired Recommendation record and on the datasheet as an enabled field. In the baseline database, the Notification Type field is already available in all baseline Recommendation families that exist for the purpose of using the SAP Interfaces. It is not, however, included on any baseline datasheets or configured as an enabled field. The following instructions assume, therefore, that an administrative user has enabled the field and added it to the datasheet.

> **Note:** You can create an SAP Notification successfully only if the SAP Interfaces - Foundation license is active.

To create an SAP Notification from a Recommendation record:

1. Create a new Recommendation recordor open an existing Recommendation record.

2. Link the Recommendation record to an Equipment or Functional Location record that represents an SAP Equipment or Functional Location.

   > **Note:** If you select an Equipment or Functional Location record that does not exist in SAP, after you save the record, a Notification will be created in SAP, but its Equipment or Functional Loc. field will be empty.

3. Select the **Create Work Request?** check box.

4. In the **Notification Type** cell, specify the type of Notification that you want to create.

5. On the **Common Tasks** menu, click the **Save** link.

   The record is saved. In addition, Meridium APM:

- Creates a Notification in SAP.
- Populates the **Work Request Reference** cell with the ID of the corresponding

Notification. Note that after the **Work Request Reference** cell is populated, the **Create Work Request?** check box becomes disabled.

- Populates the **Work Request Equipment** cell with the value in the Equipment field in the SAP Notification.

- Populates the **Work Request Functional Location** cell with the value in the Functional Loc. field in the SAP Notification.

Note: If a Notification could not be created for any reason, a message appears, indicating the problem. In addition, you will be unable to save the Recommendation record until you clear the **Create Work Request?** check box.

About Using PI to Create Notifications

If you are using the PI-based approach for creating SAP Notifications from Meridium APM Recommendation records, you can also use the Query iView to view the results of a Meridium APM query in the SAP Portal. For example, you can use the Query iView to view Recommendation records from which SAP Notifications were created.

To run a query in SAP that displays a list of Meridium APM records, the query must exist in the Meridium APM Catalog. The full path to the query must also be defined in the Query iView parameters.

Note that while you can use the Query iView to display the results of *any* Meridium APM query, this documentation assumes that you want to use a query that displays the Recommendation records that were used to generate SAP Notifications.

Specifically, this documentation explains:

- How to create a Notification from a Recommendation record.
- How you might want to configure a query for viewing these Recommendations in SAP.
- How to view the query results from the SAP Portal.

Throughout this documentation, we assume that the Query iView is configured appropriately.

> **Note:** You can use PI to create Notifications only if the SAP Interfaces - Process Integration license is active.

Tips for Creating a Query to Display Recommendations that Generated Notifications

If you create SAP Notifications from Meridium APM Recommendation records, you can create a query that displays these Recommendation records and the Work Request References for the associated Notifications.

Assuming that the Query iView has been configured appropriately, a user can log on to the SAP Portal and see the results of the query.

While you can configure the query any way you like, we recommend that the query at least:

- Provide a link that will open the Recommendation record in the Record Manager. The link should look like this:

  meridium://Registry/RecordManager?EntityKey=$ENTY_KEY$&FamilyKey=$FMLY_KEY$

- Provide a link that will open the Notification in SAP. The link should look like this:

  http://**<SAP Web Application Server Name>**:**<Port Number>**/ir-j/servlet/prt/portal/prtroot/pcd!3aportal_content!2fother_vendors!2f-specialist!2fcom.meridium.pct.apm.businesspackagefolder!2fcom.meridium.pct.apm.iViews!2fcom config-mode=true?System=**<SAP R/3 Server Name>**&TCode=IW23&GuiType=WinGui&ApplicationParameter=RIWO00-QMNUM-M=$Work Request Reference$

  ...where:

  <SAP Web Application Server Name> is the name of the SAP Web Application Server.

  <Port Number> is the port number of the specified SAP Web Application Server.

  <SAP R/3 Server Name> is the name of the SAP R/3 Server.

> **Note:** The preceding items are suggestions for how you might want to configure your query. At a minimum, the query *must* contain the ENTY_KEY and FMLY_KEY fields.

Viewing the Query Results in SAP

After you have created SAP Notifications from Recommendation records and configured a query to display the Recommendation records, you can run the query in the SAP Portal.

The following instructions assume that the Query iView has been configured to display the results of the correct query. In addition, it assumes that the query results are configured to be displayed on the **APM PBNW Certification** tab.

To view the query results in SAP:

1. Log on to the SAP Portal as a user with the Meridium APM PBNW User Showcase Role.

2. Click the **APM PBNW Certification** tab.

   The query results appear. Note that if the query contains prompts whose values were not passed in to the Query iView that is displaying the query results, a dialog box will appear, where you can specify the prompt values.

Creating a Task Record to Transfer to SAP

> **Note:** To complete the following steps, you will need to use the Task datasheet that is configured for use with the SAP Interfaces. For Inspection Task records, you will need to use the *Inspection Task for SAP Integration Interfaces* datasheet. For Calibration Task records, you will need to use the *Calibration Task for SAP Integration* datasheet. These datasheets are defined on the corresponding Task family in the baseline database, but they are not set as the default datasheets.

Note that you can create an SAP Order from a Task record only if all of the following conditions are true:

- The Work Order Number field in the Task record is empty.
- The Task record was not created automatically from SAP data.
- The SAP Interfaces - Work Management license is active.
- When completing the instructions, you select an SAP Task List that contains an Operation, which will cause the Operation Number field in the Task record to be populated automatically.

To create a Task record to transfer to SAP as an Order:

1. In Meridium APM, create an Inspection Task or Calibration Task record.

2. In the Task record, in the **Task List** cell, click the ⋯ button.

   The **Locate Task List** dialog box appears.

3. On the **Search Criteria** tab, type the desired search criteria. Note that if you accept the default criteria, the search results will return ALL Task Lists.

4. Click the **Search** button.

   The Task Lists that meet the search criteria appear on the **Search Results** tab.

5. On the **Search Results** tab, select the row containing the desired Task List, and click **OK**.

   The **Task List** field on the Task record is updated with the Task List group number.

6. In the **Last Date** cell, type or select the last date on which the task was executed.

7. In the **Desired Interval** cell, type the desired interval.

   The value in the Next Date field is updated automatically based on the Last Date and the Desired Interval.

8. In the **Call Horizon** text box, type the desired call horizon.

   > Œ**Hint:** For details about call horizons, see the SAP Help, which is located at http://help.sap.com/.

9. Save the Task record.

   After the Task record is saved, in the Meridium APM Schedule Manager, you will need to [create a scheduled item using the .DLL file that Meridium APM delivers for the purpose of creating Orders in SAP](#).

Transferring SAP Data to Meridium APM Task Records

If an SAP Maintenance Plan has a Task List that has an Operation that meets the criteria defined in the /MIAPM/TASK_CNF table, when you run the /MIAPM/WORK_MANAGEMENT_INF report in SAP, a Task record will be created in Meridium APM. Using the baseline configuration, if the control key for the Operation is ZMI1, an Inspection Task record will be created. Likewise, if the control key for the Operation is ZMI2, a Calibration Task record will be created.

If you later modify that Maintenance Plan, Task List, or Operation and run the report again, the corresponding Task record will be updated automatically in Meridium APM. Likewise, if you add an Order to the Maintenance Plan, the corresponding Task record will also be updated automatically in Meridium APM.

> **Note:** Meridium APM supports integration with Single Cycle Maintenance Plans only.

The following instructions will work correctly only if the SAP Interfaces - Work Management license is active.

To transfer SAP data to Meridium APM Task records:

1. In SAP, save a Maintenance Plan that has a Task List containing an Operation with the control key ZMI1 or ZMI2.

2. Run the following transaction: **/n/MIAPM/MIPRO**

    The **Display IMG** screen appears.

3. In the tree, expand **Execute Reports for Data Extraction**, and then expand **Execute Reports for Data Extraction**.

4. In the **Work Management Report** row, click the button.

    The **Work Management Synchronization with Meridium** screen appears.

5. In the **Maintenance plan** text box and the **to** text beside it, type the IDs that define the range of Maintenance Plans whose data you want to extract to create Task records. To specify multiple Maintenance Plans, you can use the button to access the **Multiple Selection for Maintenance Plan** window.

6. In the **Work Management Create Date** text box and the **to** text box beside it, type or select dates that define a range of creation dates of the items whose data you want to extract to create Task records. For example, if you want to create Task records from Maintenance Plans, Maintenance Items, Task Lists, or Operations that were created on or after *January 1, 1990* and on or before *January 1, 2008*, you would specify the dates as shown in the following image.

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

7. In the **Work Management Change Date** text box and the **to** text box beside it, type or select dates that define a range of modification dates of the items whose data you want to extract to create Task records. For example, if you want to create Task records from Maintenance Plans, Maintenance Items, Task Lists, or Operations that were updated on or after *January 1, 1990* and on or before *January 1, 2008*, you would specify the dates as shown in the following image.

> **Note:** To indicate today's date in either text box, you can leave the text box blank.

8. In the **Maintenance plant** text box, type the ID of the Maintenance Plant that is associated with the Maintenance Plan whose data you want to extract. To specify multiple Maintenance Plants, you can use the button to access the **Multiple Selection for Maintenance Plant** window.

When you run the report, the ABAP code will look at the /MIAPM/PARAMS table to determine the Meridium APM system to and from which to send data for this Maintenance Plant. To see an example, click here.

Example

Suppose that two rows exist in the /MIAPM/PARAMS table, and they contain the entries that are shown in the following tables:

Row 1

APM Data Source	Data Source A
APM App Server	App Server A
Plant	Plant 1000

Row 2

APM Data Source	Data Source B
APM App Server	App Server B
Plant	Plant 2000

If you run the Work Management Interface and select Plant 1000 and Plant 2000, when the items are extracted...

- The items for Plant *1000* will be extracted to Data Source A, which is connected to Application Server A.

- The items for Plant *2000* will be extracted to Data Source B, which is connected to Application Server B.

9. If you want to define advanced extraction criteria, click the **Advanced Options** button.

The **Advanced Options** section appears below the **Advanced Options** button.

10. Click here for details on defining advanced extraction criteria.

a. To change the level of detail that the SLG1 log will contain, in the **Trace Level** list, select one of the following values:

- **Summary and Errors:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, or warning messages will be recorded in the log. Instead, only *error* messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

- **Summary Only:** Causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process. If this option is selected, no success, informational, warning, or error messages will be recorded in the log. The log will, however, display the total number of records that were extracted successfully.

Note that the default value in the **Trace Level** list is *Summary, Errors, and Success*, which causes the log to show basic information about the extraction process, such as the selection criteria that was used in the process, all message types, and the total number of records that were extracted successfully.

b. To simulate an extraction process without actually extracting the records to Meridium APM, select the **Simulation Mode** check box.

The following additional items become enabled:

- **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Equipment items that were created within the specified date range.

- **APM Data Source list:** Identifies the Meridium APM data source to which you want to simulate the extraction process.

> **Note:** You should modify the advanced option settings only if you have significant experience with SAP. Novice and occasional users should not modify the advanced option settings.

11. Click the 🔽 button.

For every Operation that meets the date range criteria the [task configuration criteria](#) and is associated with the selected Maintenance Plans and Maintenance Plants, an Inspection Task or Calibration Task record is created or updated in Meridium APM.

Note the following:

- The Task ID field is populated with the Operation Description from the SAP Operation.

- By default, the Task records will not be modifiable. If desired, you can select the **Modifiable** check box and modify the Task record as needed.

- The interval and unit of measure values in the Task record will be derived based on the cycle information and unit of measure in the SAP Maintenance Plan and the configuration of the /MIAPM/TASK_CNF table. For example, suppose the /MIAPM/TASK_CNF table indicates that Inspection Task records that are created from SAP should contain a unit of measure of MON. If a Maintenance Plan has a cycle of 60 Days, the Inspection Task record will contain an interval of 2 months.

- The Last Date and Next Date fields are not populated automatically.

Creating an Event Record

> **Note:** The following instructions work correctly only if the SAP Interfaces - Work Management license is active.

To create an Event record:

1. Using the process defined by the module, create an Inspection record or Calibration Event record. As you proceed through the **Event Builder**, on the **Task(s) Selection** screen, select the appropriate Task record(s). This could be:

   - A Task record that was generated from SAP.

   -or-

   - A Task record that you created manually to generate an SAP Order automatically.

2. In the Event record, in the **Actual Work Time** text box, type the time (in hours) that you spent completing the work.

3. If the Event record is an *Inspection* record, select a value in the **Commencement Date** field and the **Completion Date** field. Make sure that the Completion Date is a date after the Commencement Date.

4. If the Event record is a *Calibration* Event record, select the **Calibration Close** check box.

   -or-

   If the Event record is an *Inspection* record, select the **Inspection Task Complete** check box.

5. Save the Event record.

   The following things occur:

   - A Confirmation record is created and linked to the Event record and the Task records to which it is linked. The number of Confirmation records created equals the number of Task records that are linked to the Event record. In addition, a Confirmation is created in SAP for each Confirmation record that is created in Meridium APM.

     If only one Confirmation record is created, the Actual Work Time in the Confirmation record matches the Actual Work Time in the Event record. If more than one Confirmation record is created, the Actual Work Time in the Event record is split evenly between those Confirmation records.

     For example, if an Event record is linked to two Task records, two Confirmation records will be created. If the Actual Work Time in the Event record is 14, the Actual Work Time in each Confirmation record will be 7 (14/2).

   - The Work Order Number field in the Task records that are linked to the Event record is cleared.

- The Confirmation that is created in SAP is marked as *final*.

Updating an SAP Confirmation by Updating a Confirmation Record

> **Note:** The following instructions work correctly only if the SAP Interfaces - Work Management license is active.

To update an SAP Confirmation by updating the Actual Work Time in a Confirmation record:

1. Open the Confirmation record that you want to modify.

2. Modify the value in the Actual Work Time record, and save the record when you are finished making changes.

   The associated SAP Confirmation is cancelled in SAP, and a new SAP Confirmation is created. The counter in the new SAP Confirmation is one digit higher than the counter in the cancelled SAP Confirmation.

   In addition, the Actual Work Time field in the Inspection record or Calibration Event record to which this Confirmation record is linked is updated automatically to reflect the updated value in the Confirmation record. If this is the *only* Confirmation record that is linked to the Inspection or Calibration Event record, the Actual Work Time in the Inspection or Calibration Event record will match the value in the Confirmation record.

   If more than one Confirmation record is linked to the Inspection or Calibration Event record, however, the Actual Work Time in the Event record is updated to be the sum of the values in the Actual Work Time field in all of those Confirmation records.

   For example, if an Event record is linked to this Confirmation record and two other Confirmation records, where the final values in the Actual Work Time fields are 7, 6, and 5, the Event record will contain the value *18* (7 + 6 + 5) in the Actual Work Time field.

Validating SAP Confirmations Against Meridium APM Confirmation Records

After you have created SAP Confirmations from Meridium APM Confirmation records, you can validate the information in the SAP Confirmations against the information in the Meridium APM Confirmation records.

To validate SAP Confirmations against Meridium APM Confirmation records:

1. In SAP, run the following transaction: **IW43**

   The **Display PM Order Confirmation: Initial Screen** appears.

2. If you know the Confirmation number of the Confirmation that you want to validate, in the **Confirmation** text box, type the Confirmation number, which appears in the **Confirmation Number** cell on the Confirmation datasheet in the Meridium APM system.

   -or-

   If you know the Order number associated with the Confirmations that you want to validate, in the **Order** text box, type the Order number, which appears in the **Work Order Number** cell on the Confirmation datasheet in the Meridium APM system.

3. Click the button.

   If only one Confirmation meets the specified criteria, the **Display PM Order Con-firmation: Actual Data** screen appears, displaying the values that appear on the Confirmation datasheet in the Meridium APM system.

   -or-

   If more than one Confirmation meets the specified criteria, the **Display PM Order Confirmation: Confirmation Overview** screen appears, displaying a list of the Con-firmations that meet the specified criteria. In the list, you can see the values that appear on the Confirmation datasheet in the Meridium APM system.

About Running an Interface in Simulation Mode

In some cases, you might want to see what would happen if you were to run an interface before you actually run it. Doing so allows you to confirm that the field mappings are configured as desired and that the results are what you would expect based upon your knowledge of your SAP data. To do so, you will need to run the interface in simulation mode. You can run any of the interfaces that are initiated from SAP in simulation mode.

The steps that you will need to use to run the simulation differ depending upon whether you are:

- Simulating the results for 1,000 items or less.

  -or-

- Simulating the results for more than 1,000 items.

Simulating Results for 1,000 Items or Less

The following instructions assume that you want to run a simulation for 1,000 items or less. If you want to run a simulation for more than 1,000 items, you will need to use a different set of instructions.

To simulate an extraction process for 1,000 items or less:

1. For the desired extraction interface, access the screen that allows you to define extraction criteria (i.e., using transaction SE38).

2. In the **Selection Parameters** section, define the desired selection criteria.

3. Click the **Advanced Options** button. [Advanced Options]

   The **Advanced Options** section appears.

4. Select the **Simulation Mode** check box.

   The following additional items become enabled:

   - **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Equipment items that were created within the specified date range.

   > Œ**Hint:** If you type *0* (zero), ALL records that meet the filtering criteria will be simulated.

   - **APM Data Source list:** Identifies the Meridium APM data source for which you want to simulate the extraction process.

5. In the **Maximum No. of Objects** text box, type the number of records for which you want to simulate the extraction process. You should type a value *less than* 1,000. While the user interface does not enforce this limitation, if you type a value

greater than 1,000, only the first 1,000 items will be included in the simulation.

6. In the **APM Data Source** list, select the Meridium APM data source for which you want to simulate the extraction process.

7. Click the 🔘 button.

The simulation process runs, and when it is finished running, the **Simulation Results** screen appears.

> **Note:** If you try to simulate an extraction process when the corresponding license is not active, a message will appear, and you will be unable to complete the process.

Each row in the grid represents one item (e.g., Equipment) whose extraction process was simulated. In each row, you can see the SAP field values that would be mapped to the Meridium APM system if you were to actually extract these items. Above the grid, you can see the total number of records whose extraction process was simulated and the Maintenance Plants that are associated with the items whose extraction process was simulated.

Simulating Results for More than 1,000 Items

The following instructions assume that you want to run a simulation for more than 1,000 items. If you want to run a simulation for 1,000 items or less, you will need to use a different set of instructions.

To simulate an extraction process for more than 1,000 items:

1. For the desired extraction interface, access the screen that allows you to define extraction criteria (i.e., using transaction SE38).

2. In the **Selection Parameters** section, define the desired selection criteria.

3. Click the **Advanced Options** button.

   The **Advanced Options** section appears.

4. Select the **Simulation Mode** check box.

   The following additional items become enabled:

   - **Maximum No. of Objects text box:** Identifies the maximum number of records for which the extraction process should be simulated. This value works together with the values in the **Selection Parameters** section. For example, if you specified a creation date range of *01/01/1900* through *01/01/2008* but you type *20* in the **Maximum No. Of Objects** text box, the system will simulate the extraction process for only the first twenty Equipment items that were created within the specified date range.

     > Œ Hint: If you type *0* (zero), ALL records that meet the filtering criteria will be simulated.

   - **APM Data Source list:** Identifies the Meridium APM data source for which you want to simulate the extraction process.

5. In the **Maximum No. of Objects** text box, type the number of records for which you want to simulate the extraction process.

6. In the **APM Data Source** list, select the Meridium APM data source for which you

want to simulate the extraction process.

7. On the **Program** menu, click **Execute in Background**.

The **Background Print Parameters** window appears.

8. Select the desired settings, and when you are finished, click the ✔ button.

The **Start Time** window appears.

At the top of the window, you will see buttons indicating options for starting the simulation process. These instructions assume that you want to start the simulation process immediately.

9. Click the **Immediate** button.

10. Click the 💾 button.

   The simulation process runs.

   > **Note:** If you try to simulate an extraction process when the corresponding license is not active, a message will appear, and you will be unable to complete the process.

11. Run the following transaction: **/n**

   The **SAP Easy Access** screen appears.

12. Run the following transaction: **SM37**

   The **Simple Job Selection** screen appears.

13. In the available fields, specify the criteria that will cause the system to display the results of the report whose status you want to view.

14. In the **Job Status** section, select the **Sched.** check box.

15. Click the **Execute** button.

The **Job Overview** screen appears, displaying the background jobs that meet the specified criteria.

In each row, you can see the background jobs that meet the specified criteria. You can use the **Status** column to determine the status of the execution process. For example, processes that have been completed will show the status *Complete*.

16. In the row representing the interface that you just ran in simulation mode, to the left of the job name, select the check box.

17. Click the 🕮 Spool button.

    The **Output Controller: List of Spool Results** screen appears.

18. In the row representing the simulation whose results you want to view, in the **Type** cell, click the 🔳 button.

    The **Graphical display of spool request <n> in system <SYSID>** screen appears, where **<n>** is a number identifying the request and **<SYSID>** is the System id of the SAP system.

Graphical display of spool request 31416 in system D02

Data statistics	Number of
Records passed	1.050

```
DGT_ALL_350_DateStamped

Total Records      0001050
Filtered Plants    4000,3000,1000,0001,
```

MI_EQUIP000_EQUIP_ID_C MI_EQUIP000_SAP_CLASS_C	MI_EQUIP000_SAP_SYSTEM_C MI_EQUIP000_SAP_CLASS_DESC_C	MI_EQUIP000_CAT_PROF_C	MI_EQUIP000_CAT_PROF_DESC_C MI_EQUIP000_SN_C	MI_EQUIP000_CHA MI_EQUIP000_SORT_FIELD_
000000000010000013	D02-000			2011-12-21 00:0
000000000010000000 Z_OPH	D02-000 Operating Hours for Equipments	CLM000001 S00123	Claim Catalog Profile SORT FIELD	2012-05-25 00:0
000000000010000001 EQ_CLASS_0002	D02-000 Class for Equipment Type 2	000000001 S001	General Catalog Profile SORT FIELD	2012-04-11 00:0
000000000010000002	D02-000	S001	SORT FIELD	2012-06-21 00:0
000000000010000003 STORAGETANK	D02-000 Storage Tank	VW1 S001	Suggestion System SORT FIELD	2012-06-26 00:0
000000000010000004 EQ_CLASS_0001	D02-000 Std Class for Equipment Change	VW1 S001	Suggestion System SORT FIELD	2012-07-30 00:0
000000000010000005 EQ_CLASS_0001	D02-000 Std Class for Equipment Change	VW1 S001	Suggestion System SORT FIELD	2012-05-23 00:0
000000000010000006 EQ_CLASS_0001	D02-000 Std Class for Equipment Change	ISRE AAAAAAAAAA11111111111	RE Real Estate SORT_FIELD_002	2012-06-26 00:0
000000000010000007 Z_OPH	D02-000 Operating Hours for Equipments	SETIAL		2012-06-26 00:0
000000000010000010	D02-000	CLM000001 PLM753	Claim Catalog Profile 2	2012-06-26 00:0
000000000010000022 EQ_CLASS_0001	D02-000 Std Class for Equipment Change			2012-04-05 00:0
000000000010000023	D02-000	VW1	Suggestion System	2012-05-09 00:0

Each row on the screen represents one item (e.g., Equipment) whose extraction process was simulated. In each row, you can see the SAP field values that would be mapped to the Meridium APM system if you were to actually extract these items. At the top of the screen, you can see the total number of records whose extraction process was simulated and the Maintenance Plants that are associated with the items whose extraction process was simulated.

SAP Interfaces Catalog Folder Structure

The queries listed in the following table are provided in the Catalog folder \\Public\Meridium\Modules\SAP Integration Interfaces\Queries. In this table, the values listed in the **Query** column refer to the query names. The baseline query captions are the same as the query names.

Query	Behavior and Usage
Get ABC Indicator for Functional Location	Returns the ABC Indicator value (stored in the *Criticality Indicator* field) in the Functional Location record that is identified by the value supplied for the Functional Location Key prompt. This query is used when you update criticality indicator values in SAP via the Asset Criticality Analysis (ACA) module.
Get ABC Indicator for Equipment	Returns the ABC Indicator value (stored in the *Criticality Indicator* field) in the Equipment record that is identified by the value supplied for the Equipment Key prompt. This query is used when you update criticality indicator values in SAP via the Asset Criticality Analysis (ACA) module.
Get Equipment for SAP ID	Returns the Equipment record that: • Contains the ID corresponding to the value supplied for the SAP Equipment ID prompt. - and - • Is linked to the SAP System record identified by the value supplied for the SAP System prompt. In the baseline Meridium APM database, the query returns records in the Equipment family.

Query	Behavior and Usage
Get Functional Location for SAP ID	Returns the Functional Location record that: • Contains the ID corresponding to the value supplied for the SAP Functional Location ID prompt. - and - • Is linked to the SAP System record identified by the value supplied for the SAP System prompt. In the baseline Meridium APM database, the query returns records in the Functional Location family.
Get Long Text for Notification	Transfers values from an RBI Recommendation record to the Description field in a Notification record that is created from that RBI Recommendation record. The Notification record is then used to generate a Notification in SAP.
Get SAP ID for Equipment	Returns the value in the Equipment ID field in the record with the provided Entity Key. In the baseline Meridium APM database, this query returns records in the Equipment family.
Get SAP ID for Functional Location	Returns the value in the Functional Location field in the record with the provided Entity Key. In the baseline Meridium APM database, this query returns records in the Functional Location family.
Get Site Reference for Equipment	Returns the name of the source SAP system in the CMMS System field in an Equipment record. The SAP system name uses the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <Client> is the Client number.

Query	Behavior and Usage
Get Site Reference for Functional Location	Returns the name of the source SAP system in the CMMS System field in a Functional Location record. The SAP system name uses the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <Client> is the Client number.
Get Tasks for Work Order Generation	Determines which Task records to use to create Orders in SAP.

SAP System Associated Pages

The following Associated Page is configured by default for the SAP System family. This link is available only when ONE SAP System record is selected (e.g., on the shortcut menu in search results).

- meridium://REGISTRY/MACROS?project=Public\Rules Library\Meridium\SAPInterfaces\IntegrationInterfaces&macro=TestConnection&p0=[ENTY_KEY]

  Tests the connection information that is stored in the Connection String field in the SAP System record.

CMMS Classification Associated Pages

The following Associated Page is configured by default for the CMMS Classification family.

- meridium://REGISTRY/MACROS?project=Public\Rules Library\Meridium\SAPInterfaces\IntegrationInterfaces&macro=SynchronizeClassificationKeyMacro&p0=[ENTY_KEY]

  [Refreshes the Meridium APM system](#) to reflect the current characteristics that exist in the SAP system for the classification represented by the CMMS Classification record.

CMMS Classification Type Associated Pages

The following Associated Page is configured by default for the CMMS Classification Type family.

- meridium://REGISTRY/MACROS?project=Public\Rules Library\Meridium\SAPInterfaces\IntegrationInterfaces&macro=SynchronizeClassificationTypeKeyMacro&p0=[ENTY_KEY]

  [Refreshes the Meridium APM system](#) to reflect the current classifications that exist in the SAP system for the classification type represented by the CMMS Classification Type record.

CMMS Classification Type

The following table provides an alphabetical list and description of the fields that exist for the CMMS Classification Type family. The information in the table reflects the baseline state and behavior of these fields.

Field	Data Type	Description	Behavior and Usage
Classification Type	Character	The item whose characteristics will be extracted.	On the datasheet, this field displays a list, from which you can select one of the following values: • Equipment • Functional Location This field is required.
Classification Type Code	Character	A value that is used internally by the Meridium APM system.	This value is set automatically. This field is not available on the baseline datasheets.
CMMS System ID	Character	The value in the System ID field in the SAP System record whose Name field contains the value that you selected in **CMMS System** list in this CMMS Classification Type record.	This field is populated automatically and used internally by the Meridium APM system. This field is not available on the baseline datasheets.
CMMS System	Number	The SAP system from which characteristics will be extracted.	On the datasheet, the **CMMS System** list contains the values that are stored in the Name field in all SAP System records. The list is populated automatically with the value in the Name field in the SAP System record whose Default SAP System field contains the value *True*.

CMMS Classification

The following table provides an alphabetical list and description of the fields that exist for the CMMS Classification family. The information in the table reflects the baseline state and behavior of these fields.

For the fields that are available on the baseline Classification Type Classifications master-detail datasheet, the table explains how these fields behave when you are viewing CMMS Classification records in the context of this master-detail record.

Field	Data Type	Description	Behavior and Usage
Class Group	Character	The SAP class group to which this classification belongs.	The value in this field is set automatically, and this field is disabled.
Classification	Character	The ID of the classification (as it is defined in the SAP system).	On the datasheet, the value in this field is formatted as a hyperlink, which you can click to see all of the characteristics that belong to this classification. This field is disabled.
Classification Description	Character	The description of the classification (as it is defined in the SAP system).	This field is disabled.
CMMS System	Number	This value is used internally by the Meridium APM system.	This field is not available on the baseline datasheets.
CMMS System ID	Character	The value in the System ID field in the SAP System record whose Name field contains the value that is stored in the CMMS System field in this record.	This field is populated automatically and used internally by the Meridium APM system. This field is not available on the baseline datasheets.
Internal Classification Number	Character	This value is used internally by the Meridium APM system.	The value in this field is set automatically, and this field is disabled.
Extract From CMMS System	Logical	A value that identifies whether or not characteristics for this classification will be extracted from the SAP system.	On the datasheet, you can select this check box if you want to extract characteristics belonging to this classification.

CMMS Characteristic

The following table provides an alphabetical list and description of the fields that exist for the CMMS Characteristic family. The information in the table reflects the baseline state and behavior of these fields.

For the fields that are available on the baseline Classification Characteristics master-detail datasheet, the table explains how these fields behave when you are viewing CMMS Characteristic records in the context of their master-detail record.

Field	Data Type	Description	Behavior and Usage
Class Group	Character	The SAP class group to which this characteristic belongs.	The value in this field is set automatically, and this field is disabled.
Characteristic Name	Character	The ID of the characteristic (as it is defined in the SAP system).	On the datasheet, the value in this field is formatted as a hyperlink, which you can click to open the CMMS Characteristic by itself, outside of the context of its master CMMS Classification record. This field is disabled.
Characteristic Description	Character	The description of the characteristic (as it is defined in the SAP system).	This field is disabled.
Classification	Character	The classification to which this characteristic belongs.	On the datasheet, the value in this field is formatted as a hyperlink, which you can click to open the CMMS Classification record representing the classification to which this characteristic belongs. This field is disabled.
CMMS System ID	Character	The ID of the SAP System from which this characteristic will be extracted.	This field is populated automatically and used internally by the Meridium APM system. This field is not available on the baseline datasheets.

Field	Data Type	Description	Behavior and Usage
Internal Classification Number	Character	This value is used internally by the Meridium APM system.	The value in this field is set automatically, and this field is disabled.
Extract From CMMS System	Logical	A value that identifies whether or not this characteristic will be extracted.	On the datasheet, you can select this check box if you want to extract this characteristic.

SAP System

The following table provides an alphabetical list and description of the fields that exist for the SAP System family and are available on the baseline SAP System datasheet (unless otherwise noted). The information in the table reflects the baseline state and behavior of these fields.

Field	Data Type	Description	Behavior and Usage
Connection String	Character	The connection information for the SAP system.	In new SAP System records, you will need to delete all angle brackets and: • Replace the text *SAP_SERVER_IP* with the IP address of the SAP Server. • Replace the text *SAP_SYSTEM_NUMBER* with the SAP System number. • Replace the text *SAP_CLIENT_NUMBER* with the SAP Client number.
Connection Type	Character	The type of connection that will be used to connect to the SAP system.	The default value is *RFC*. This field is not available on the baseline datasheet.
Default SAP System?	Logical	A value that indicates whether this SAP system should be used by default when transferring data between your Meridium APM system and your SAP system.	On the datasheet, you can select the check box to identify this SAP system as the default SAP system.
Encrypted Password	Character	The password to the SAP system.	On the datasheet, you can click the ⋯ button to display the **Enter SAP System Password** dialog box, where you can type the desired password. The password that you type will be encrypted and displayed as asterisks on the datasheet.

Field	Data Type	Description	Behavior and Usage
System ID	Character	The ID of the SAP system.	This field is populated automatically after you test the connection to the SAP system using the **Test Connection** link on the **Associated Pages** menu. Specifically, the System ID field is populated automatically with the name of the SAP system, using the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <CLIENT> is the Client number.
ITS URL	Character	The URL to the ITS Server.	In new SAP System records, you will need to delete the angle brackets and replace the text *its_or_integrated_its_server_url* with the appropriate URL.
Name	Character	The name of the SAP system.	You can type any name, but we recommend that you use the format *<SYSID>-<CLIENT>*, where <SYSID> is the System ID of the SAP system and <CLIENT> is the Client number. By doing so, the value in the **Name** field will match the value that will be populated automatically in the **System ID** field.
User ID	Character	The User ID of a user that can log into the SAP system.	None

Technical Characteristic

The following table provides an alphabetical list and description of the fields that exist for the Technical Characteristics family and *are available on the Technical Characteristic datasheet*. Other fields are defined for the family but are not available on the datasheet and store data that is used internally by the Meridium APM system during the extraction process. The information in the table reflects the baseline state and behavior of these fields.

Field	Data Type	Description	Behavior and Usage
Name	Character	The name of the char-acteristic.	None
Value	Character	The value assigned to the char-acteristic.	If multiple values are assigned to a characteristic in SAP, all of those values will be displays in the Value field, separated by a comma, as shown in the following image.

Using the SAP System to View a List of Meridium-Specific Steps

To use the SAP system to view a list of steps that can be performed in SAP:

- On the SAP system, run the following transaction: **/n/MIAPM/MIPRO**

  The **Display IMG** screen appears.

You can expand the tree to see a list of steps that you can perform in SAP. When you see the ⊕ button, you can click it to access the screen you can use for completing that step.

SAP Transactions - Quick Reference

The following table provides a list of SAP transactions and their functions.

> **Note:** The Meridium APM documentation assumes that you will perform Meridium-specific steps in SAP via the */n/MIAPM/MIPRO* transaction. The direct transactions for these steps are included in the following table only for users who prefer to use them.

This transaction:	...Lets you:
/n/MIAPM/MIPRO	View a list of Meridium-specific steps that can be performed in SAP.
/n/MIAPM/MANAGE_ PARAMS	Access and manage the /MIAPM/PARAMS table.
/n/MIAPM/MANAGE_ FIELDS	View baseline field mappings and configure custom field mappings.
/n/MIAPM/MANAGE_ PI_CNF	Access and manage the /MIAPM/PI_PARAMS table, where you can specify your PI Server (e.g., name and port number).
/n/MIAPM/MANAGE_ TSKCNF	Access the /MIAPM/TASK_CNF table.
/n/MIAPM/SLG1	Access the **Analyze Application Log** screen.
/n/MIAPM/EXCEPTIONS	Access the /MIAPM/EXCEPTIONS table.
/n/MIAPM/VIEW_ HISTORY	Access the /MIAPM/CTRL_LOG table.
/n/MIAPM/DOC_FLOC	Run the Functional Location Extraction Interface.
/n/MIAPM/DOC_FCHAR	Run the Functional Location Characteristics Extraction Interface.
/n/MIAPM/DOC_EQUI	Run the Equipment Extraction Interface.
/n/MIAPM/DOC_ECHAR	Run the Equipment Characteristics Extraction Interface.
/n/MIAPM/DOC_NOTI_ WO	Run the Notification and Order Extraction Interface for Notifications with Orders.
/n/MIAPM/DOC_WO	Run the Notification and Order Extraction Interface for Orders without Notifications.
/n/MIAPM/DOC_WHD	Run the Notification and Order Extraction Interface for Orders that are associated with Notifications with items.

This transaction:	...Lets you:
/n/MIAPM/DOC_NOTI	Run the Notification and Order Extraction Interface for Notifications without Orders.
/n/MIAPM/DOC_WMGMT	Transfer SAP data to Meridium APM Task records.
SM37	Check the status of a background process.
SM36	Schedule one or more interfaces to be run automatically.
SM59	Create an RFC destination.
IW43	Validate SAP Confirmations against that data in Meridium APM Confirmation records.

SAP Values Mapped to Functional Location Records

The following table explains the SAP fields that are used to populate the baseline Functional Location fields when you extract SAP Functional Locations to create Functional Location records in Meridium APM.

Meridium APM Field Caption	SAP Table	SAP Field ID
Functional Location	IFLOT	None. This value is retrieved using the SAP Conversion Exit CONVERSION_EXIT_TPLNR_OUTPUT.
Functional Location Internal ID	IFLOT	TPLNR
Functional Location Description	IFLOTX	PLTXT
Superior Function Location	IFLOT	TPLMA
Business Area	ILOA	GSBER
Business Area Description	TGSBT	GTEXT
Catalog Profile	IFLOT	RBNR
Catalog Profile Description	T352B_T	RBNRX
Category	IFLOT	FLTYP
Category Description	T370F_T	TYPTX
CMMS Creation Date	IFLOT	ERDAT

Meridium APM Field Caption	SAP Table	SAP Field ID
CMMS Last Changed Date	IFLOT	AEDAT
CMMS System	None	<SY-SID> + <SY-MANDT>
CO Area	ILOA	KOKRS
CO Area Description	TKA01	BEZEI
Company Code	ILOA	BUKRS
Company Code Description	T001	BUTXT
Construction Type	IFLOT	SUBMT
Construction Type Description	MAKT	MAKTX
Cost Center	ILOA	KOSTL
Cost Center Description	CSKT	KTEXT
Criticality Indicator	ILOA	ABCKZ
Criticality Indicator Description	T370C_T	ABCTX
Installation Allowed	IFLOT	IEQUI
Location	ILOA	STORT
Location Description	T499S	KTEXT

Meridium APM Field Caption	SAP Table	SAP Field ID
Maintenance Plant	ILOA	SWERK
Maintenance Plant Description	T001W	NAME1
Object Type	IFLO	EQART
Object Type Description	T370K_T	EARTX
Planning Plant	IFLOT	IWERK
Planning Plant Description	T001W	NAME1
Planner Group	IFLOT	INGRP
Planner Group Description	T024I	INNAM
Plant Section	ILOA	BEBER
Plant Section Description	T357	FING
Room	ILOA	MSGRP

Meridium APM Field Caption	SAP Table	SAP Field ID
SAP Class	KLAH	CLASS
		Note: • If a Functional Location has a standard classification, that classification is mapped to Meridium APM. • If a Functional Location has no standard classification and only *one* other classification, that classification is mapped to Meridium APM. • If a Functional Location has no standard classification and *more than one* other classification, NO classification is mapped to Meridium APM.
SAP Class Description	SWOR	KSCHL
		Note: • If a Functional Location has a standard classification, that classification is mapped to Meridium APM. • If a Functional Location has no standard classification and only *one* other classification, that classification is mapped to Meridium APM. • If a Functional Location has no standard classification and *more than one* other classification, NO classification is mapped to Meridium APM.
Sort Field	ILOA	EQFNR
Structure Indicator	IFLOT	TPLKZ
System Status	TJ02T	TXT04
Work Center	CRHD	ARBPL
Work Center Description	CRTX	KTEXT

SAP Values Mapped to Equipment Records

The following table explains the SAP fields that are used to populate the baseline Equipment fields when you extract SAP Equipment to create Equipment records in Meridium APM.

Meridium APM Field Caption	SAP Table	SAP Field ID
Catalog Profile	EQUZ	RBNR
Catalog Profile Description	T352B_T	RBNRX
CMMS Creation Date	EQUI	ERDAT
CMMS Last Changed Date	EQUI	AEDAT
CMMS System	None	<SY-SID> + <SY-MANDT>
Construction Type	EQUZ	SUBMT
Construction Type Description	MAKT	MAKTX
Criticality Indicator	ILOA	ABCKZ
Criticality Indicator Description	T370C_T	ABCTX
Sort Field	ILOA	EQFNR
Equipment ID	EQUI	EQUNR
Equipment Short Description	EQKT	EQKTX
Equipment Long Description	EQUI	None. This value is retrieved using an SAP BAPI.
Equipment Technical Number	EQUZ	TIDNR

Meridium APM Field Caption	SAP Table	SAP Field ID
Equipment Vendor	EQUI	ELIEF
Functional Location	ILOA	TPLNR
Functional Location Description	IFLOTX	PLTXT
Maintenance Plant	ILOA	SWERK
Maintenance Plant Description	T001W	NAME1
Inventory Number	EQUI	INVNR
Main Work Center	CRHD	ARBPL
Main Work Center Description	CRTX	KTEXT
Manufacturer	EQUI	HERST
Model Number	EQUI	TYPBZ
Object Type	EQUI	EQART
Object Type Description	T370K_T	EARTX
Part Number	EQUZ	MAPAR
Planner Group	EQUZ	INGRP
Planner Group Description	T024I	INNAM
Planning Plant	EQUZ	IWERK
Planning Plant Description	T001W	NAME1

Meridium APM Field Caption	SAP Table	SAP Field ID
Plant Section	ILOA	BEBER
Person Responsible for Plant Section	T357	FING
Purchase Date	EQUI	ANSDT
Purchase Order Number	EQBS	KDAUF
SAP Category	EQUI	EQTYP
SAP Category Description	T370U	TYPTX
SAP Class	KLAH	CLASS **Note:** • If an Equipment has a standard classification, that classification is mapped to Meridium APM. • If an Equipment has no standard classification and only *one* other classification, that classification is mapped to Meridium APM. • If an Equipment has no standard classification and *more than one* other classification, *no* classification is mapped to Meridium APM.

Meridium APM Field Caption	SAP Table	SAP Field ID
SAP Class Description	SWOR	KSCHL **Note:** • If an Equipment has a standard classification, that classification is mapped to Meridium APM. • If an Equipment has no standard classification and only *one* other classification, that classification is mapped to Meridium APM. • If an Equipment has no standard classification and *more than one* other classification, *no* classification is mapped to Meridium APM.
SAP Last Changed Date	EQUI	AEDAT
Serial Number	EQUI	SERGE
Size/Dimension	EQUI	GROES
System Status	TJ02T	TXT04
Technical Drawing Number	EQUI	HZEIN
Valid From Date	EQUZ	DATAB
Warranty Expired Date	BGMKOBJ	GWLEN
WBS Element	ILOA	POST1
Year Constructed	EQUI	BAUJJ

SAP Values Mapped to Technical Characteristic Records

The following table explains the SAP fields that are used to populate the baseline Technical Characteristic fields when you extract SAP characteristics to create Technical Characteristic records in Meridium APM.

Meridium APM Field Caption	SAP Table	SAP Field ID	Note
Character Value	AUSP	ATWRT	None
CMMS System	None	<SY-SID> + <SY-MANDT>	None
Currency Value	AUSP	ATFOR	None
Data Type	CABN	ATFOR	None
Description	CABNT	ATBEZ	None
Equipment ID	EQUI	EQUNR	A value is mapped to this field only if the Technical Characteristic record is linked to an *Equipment* record.
ID	CABN	ATINN	None
Interval Value	AUSP	ATFLB, ATFLV	None
Functional Location	ILOA	TPLNR	A value is mapped to this field only if the Technical Characteristic record is linked to a *Functional Location* record.
Functional Location Internal ID	KSSK	OBJEK	A value is mapped to this field only if the Technical Characteristic record is linked to a *Functional Location* record.
Multi Value Characteristic	AUSP	ATWRT	None
Name	CABN	ATNAM	None
Number of Characters	CABN	ANZST	None

Meridium APM Field Caption	SAP Table	SAP Field ID	Note
Number of Decimal Places	CABN	ANZDZ	None
Numeric Value	AUSP	ATFLV	None
Unit of Measure	T006A	MSEH6	None

SAP Values Mapped to Work History Records

The following tables explain the SAP fields that are used to populate the baseline Work History fields when you extract Orders and Notifications from SAP. The tables are divided into sections, depending on the source of the Work History records. Keep in mind that Work History records can be created from:

- Orders with Notifications
- Notifications without associated Orders
- Orders without associated Notifications

Values Mapped to Records that were Created from Orders with Notifications

Meridium APM Field Caption	SAP Table	SAP Field ID
Event ID	VIQMEL, VIAUFKST	QMNUM, AUFNR
Event Short Description	VIQMEL	QMTXT
Event Long Description	QMEL, AUFK	LTXT, KOPF
Request ID	VIQMEL	QMNUM
Request Description	VIQMEL	QMTXT
Request Priority	VIQMEL	PRIOK
Request Priority Description	T356_T	PRIOKX
Request Type Code	VIQMEL	QMART
Request Type Description	TQ80_T	QMARTX
Request System Status	TJ02T	TXT04
Request User Status	TJ30T	TXT04
Request Creation Date	VIQMEL	ERDAT, ERZEIT
Request Last Change Date	VIQMEL	AEDAT, AEZEIT
Location ID	VIQMEL/OBJK	TPLNR
Location Short Description	IFLOTX	PLTXT

Meridium APM Field Caption	SAP Table	SAP Field ID
Asset Tech ID	EQUZ	TIDNR
Equipment ID	VIAUFKST/OBJK	EQUNR
SAP Class	KLAH	CLASS
SAP Category	EQUI	EQTYP
Equipment Category Description	T370U	typtx
Equipment Short Description	EQKT	EQKTX
Equipment Class Description	SWOR	KSCHL
SAP Type	EQUI	EQART
Equipment Type Description	T370K_T	EARTX
Assembly	VIAUFKST	BAUTL
Order ID	VIAUFKST	AUFNR
Order Description	VIAUFKST	KTEXT
Order Maintenance Item	VIAUFKST	WAPOS
Order Creation Date	VIAUFKST	ERDAT, ERFZEIT
Order Last Change Date	VIAUFKST	AEDAT, AEZEIT
Order Type Code	VIAUFKST	AUART
Order Type Description	T003P	TXT
Order Priority	VIAUFKST	PRIOK
Order Priority Description	T356_T	PRIOKX
Order System Status	TJ02T	TXT04
Order User Status	TJ30T	TXT04
Order PM Activity Type	VIAUFKST	ILART
Asset Activity Description	T353I_T	ILATX
Order System Condition	VIAUFKST	ANLZU

Meridium APM Field Caption	SAP Table	SAP Field ID
Order System Condition Description	T357M_T	ANLZUX
Order Maintenance Plan	VIAUFKST	WARPL
Order Call Number	VIAUFKST	ABNUM
Maintenance Cost	PMCO	Σ(WRT00 - WRT16)
Maintenance Cost UOM	PMCO	COCUR
Assembly Description	MAKT	MAKTX
Failure Mode Code	VIQMEL	QMCOD
Failure Mode Description	QPCT	KURZTEXT
Effect Code	VIQMEL	AUSWK
Effect Description	T357A_T	AUSWKT
Event Start Date	VIQMEL	QMDAT, MZEIT
Event Date Description	VIQMEL	QMDAT, MZEIT
Breakdown Indicator	VIQMEL	MSAUS
Mechanically Unavailable Date	VIQMEL	AUSVN, AUZTV
Mechanically Available Date	VIQMEL	AUSBS, AUZTB
Mechanical Down Time	VIQMEL	AUSZT
Maintenance Start Date	VIAUFKST	GSTRI, GSUZI
Maintenance Completion Date	VIAUFKST	GETRI, GEUZI

Meridium APM Field Caption	SAP Table	SAP Field ID
Estimated Labor Note: The value in the Estimated Labor field is calculated as the sum of all planned hours across ALL Operations that are associated with the Order (in the SAP user interface, this value is visible in the **Work** text box on the **Internal** tab of the Operation).	AFVV	ARBEI
Actual Labor Note: The value in the Actual Labor field is calculated as the sum of all actual hours across ALL Operations that are associated with the Order (in the SAP user interface, this value is visible in the **Actual work** text box on the **Act. Data** tab of the Operation).	AFVV	ISMNW
Maintenance Cost	PMCO	Σ(WRT00 - WRT16)
CMMS System	None	<SY-SID> + <SY-MANDT>

Values Mapped to Records that were Created from Notifications Without Associated Orders

Meridium APM Field Caption	SAP Table	SAP Field ID
Event ID	VIQMEL	QMNUM
Event Short Description	VIQMEL	QMTXT
Event Long Description	QMEL	LTXT
Request ID	VIQMEL	QMNUM
Request Description	VIQMEL	QMTXT
Request Type Code	VIQMEL	QMART
Request Type Description	TQ80_T	QMARTX

Meridium APM Field Caption	SAP Table	SAP Field ID
Request Priority	VIQMEL	PRIOK
Request Priority Description	T356_T	PRIOKX
Request System Status	TJ02T	TXT04
Request User Status	TJ30T	TXT04
Request Creation Date	VIQMEL	ERDAT, ERZEIT
Request Last Change Date	VIQMEL	AEDAT, AEZEIT
Location ID	VIQMEL	TPLNR
Location Short Description	IFLOTX	PLTXT
Equipment ID	VIQMEL	EQUNR
Asset Tech ID	EQUZ	TIDNR
Equipment Short Description	EQKT	EQKTX
SAP Category	EQUI	EQTYP
Equipment Category Description	T370U	TYPTX
SAP Class	KLAH	CLASS
Equipment Class Description	SWOR	KSCHL
SAP Type	EQUI	EQART
Equipment Type Description	T370K_T	EARTX
Assembly	VIQMEL	BAUTL
Assembly Description	MAKT	MAKTX
Failure Mode Code	VIQMEL	QMCOD
Failure Mode Description	QPCT	KURZTEXT
Effect Code	VIQMEL	AUSWK
Effect Description	T357A_T	AUSWKT
Event Start Date	VIQMEL	QMDAT, MZEIT
Event Date Description	VIQMEL	QMDAT
Breakdown Indicator	VIQMEL	MSAUS
Mechanically Unavailable Date	VIQMEL	AUSVN, AUZTV

Meridium APM Field Caption	SAP Table	SAP Field ID
Mechanically Available Date	VIQMEL	AUSBS, AUZTB
Mechanical Down Time	VIQMEL	AUSZT
CMMS System	None	<SY-SID> + <SY-MANDT>

Values Mapped to Records that were Created from Orders Without Associated Notifications

Meridium APM Field Caption	SAP Table	SAP Field ID
Event ID	VIAUFKST	AUFNR
Event Short Description	VIAUFKST	KTEXT
Event Long Description	AUFK	KOPF
Order ID	VIAUFKST	AUFNR
Order Description	VIAUFKST	KTEXT
Order Type Code	VIAUFKST	AUART
Order Type Description	T003P	TXT
Order Priority	VIAUFKST	PRIOK
Order Priority Description	T356_T	PRIOKX
Order System Status	TJ02T	TXT04
Order User Status	TJ30T	TXT04
Order PM Activity Type	VIAUFKST	ILART
Asset Activity Description	T3531_T	ILATX
Order System Condition	VIAUFKST	ANLZU
Order System Condition Description	T357M_T	ANLZUX
Order Maintenance Plan	VIAUFKST	WARPL
Order Call Number	VIAUFKST	ABNUM
Order Maintenance Item	VIAUFKST	WAPOS
Event Start Date	VIAUFKST	GSTRI, GSUZI

Meridium APM Field Caption	SAP Table	SAP Field ID
Event Date Description	VIQMEL	QMDAT
Order Creation Date	VIAUFKST	ERDAT, ERFZEIT
Order Last Change Date	VIAUFKST	AEDAT, AEZEIT
Location ID	VIAUFKST/OBJK	TPLNR
Location Short Description	IFLOTX	PLTXT
Equipment ID	VIAUFKST/OBJK	EQUNR
Asset Tech ID	EQUZ	TIDNR
Equipment Short Description	EQKT	EQKTX
SAP Category	EQUI	EQTYP
Equipment Category Description	T370U	TYPTX
SAP Class	KLAH	CLASS
Equipment Class Description	SWOR	KSCHL
SAP Type	EQUI	EQART
Equipment Type Description	T370K_T	EARTX
Asset Tech ID	EQUZ	TIDNR
Assembly	VIAUFKST	BAUTL
Assembly Description	MAKT	MAKTX
Request ID	OBJK	IHNUM
Maintenance Start Date	VIAUFKST	GSTRI, GSUZI
Maintenance Completion Date	VIAUFKST	GETRI, GEUZI

Meridium APM Field Caption	SAP Table	SAP Field ID
Estimated Labor Note: The value in the Estimated Labor field is calculated as the sum of all planned hours across ALL Operations that are associated with the Order (in the SAP user interface, this value is visible in the **Work** text box on the **Internal** tab of the Operation).	AFVV	ARBEI
Actual Labor Note: The value in the Actual Labor field is calculated as the sum of all actual hours across ALL Operations that are associated with the Order (in the SAP user interface, this value is visible in the **Actual work** text box on the **Act. Data** tab of the Operation).	AFVV	ISMNW
Maintenance Cost	PMCO	Σ(WRT00 - WRT16)
Maintenance Cost UOM	PMCO	COCUR
CMMS System	None	<SY-SID> + <SY-MANDT>

SAP Values Mapped to Work History Detail Records

The following table explains the SAP fields that are used to populate the baseline Work History Detail fields when you extract Orders and Notifications from SAP.

Note that if a Technical Object in the object list is associated with a Notification that has items, separate Work History Detail records will be created for each of those items. The Work History Detail records will be linked to the Work History record that was created using that Technical Object.

Meridium APM Field Caption	SAP Table	SAP Field ID
Work History Detail ID	QMEL	QMNUM
Work History Detail Description	VIQMEL	QMTXT
Work History ID	VIAUFKS	QMNUM
CMMS Creation Date	VIAUFKS	ERDAT, ERZEIT
CMMS Last Changed Date	VIAUFKS	AEDAT, AEZEIT
CMMS System	None	<SY-SID> + <SY-MANDT>
Request ID	VIQMEL	QMNUM
Order ID	VIAUFKS	AUFNR
Location ID	VIAUFKS, VIQMEL, OBJK	TPLNR
Equipment ID	VIAUFKS, VIQMEL, OBJK	EQUNR
Equipment Category	EQUI	EQTYP
Equipment Category Description	T370U	TYPTX
Equipment Class	KLAH	CLASS
Equipment Class Description	SWOR	KSCHL
Equipment Type	EQUI	EQART
Equipment Type Description	T370K_T	EARTX
Maintainable Item Code	QMFE	OTEIL
Maintainable Item Description	QPCT	KURZTEXT

Meridium APM Field Caption	SAP Table	SAP Field ID
Condition Code	QMFE	FECOD
Condition Description	QPCT	KURZTEXT
Cause Code	QMUR	URCOD
Cause Description	QPCT	KURZTEXT
Maintenance Action Code	QMMA	MNCOD
Maintenance Action Description	QPCT	KURZTEXT
Detail Narrative	QMFE	LTXT

SAP Values Mapped to Task Records

The following table explains the SAP fields that are used to populate the baseline Task fields when you create Task records using the SAP Interfaces module.

Meridium APM Field Caption	SAP Table	SAP Field ID	Notes
Task ID	PLPO	LTXA1, LTXA2 The Task ID is populated using the sum of the values in LTXA1 and LTXA2	None
Task Description	VIMPOS, PLKO	EQNR, TPLNR The Task Description is populated using a concatenation of the values in EQUNR or TPLNR and PLPO.LTXA1 + PLPO.LTXA2	None
Maintenance Plan	MPLA	WARPL	None
Maintenance Item	MPOS	WAPOS	None
SAP Last Changed Date[1]	PLPO	AEDAT	This field is not available on any baseline Task datasheets.
SAP Creation Date[1]	PLPO	ANDAT	This field is not available on any baseline Task datasheets.
Task List Group[1]	PLKO	PLNNR	This field is not available on any baseline Task datasheets.
Task List Group Counter[1]	PLKO	PLNAL	This field is not available on any baseline Task datasheets.

Meridium APM Field Caption	SAP Table	SAP Field ID	Notes
Task List Type[1]	PLKO	PLNTY	This field is not available on any baseline Task data-sheets.
Operation Number	PLPO	VORNR	None
Work Order Number[2]	VIMPOS	LAUFN	The Work Order Number field is not populated if the Task record was used to create an Order in SAP.
Desired Interval[3]	MMPT, T006	MMPT.ZYKL1, T006.ZAEHL	The value for ZYKL1 is converted from the UOM type stored in the T006.MSEH3 field to the UOM stored in the /MIAPM/TASK_CNF table in the UOME_ID field.
Desired Interval UOM	/MIAPM/TASK_CNFG	UOME_ID	None
Min Interval[3]	MMPT, T006	MMPT.ZYKL1, T006.ZAEHL	The value for ZYKL1 is converted from the UOM type stored in the T006.MSEH3 field to the UOM stored in the /MIAPM/TASK_CNF table in the UOME_ID field.
Min Interval UOM	/MIAPM/TASK_CNFG	UOME_ID	None
Max Interval[3]	MMPT, T006	MMPT.ZYKL1, T006.ZAEHL	The value for ZYKL1 is converted from the UOM type stored in the T006.MSEH3 field to the UOM stored in the /MIAPM/TASK_CNF table in the UOME_ID field.
Max Interval UOM	/MIAPM/TASK_CNFG	UOME_ID	None

Task Values Mapped to SAP

When you use the Work Management Interface to create Orders from Meridium APM Task records, several values in the Meridium APM Task record are passed to the SAP Order and its associated Operations. The following table explains the Task fields whose values are passed to the SAP Function Module */MIAPM/MAINTAIN_ORDER* (which calls the SAP BAPI *BAPI_ALM_ORDER_MAINTAIN*).

Meridium APM Field Caption	SAP BAPI Field
Work Order Type	ORDER_TYPE
Task Description	SHORT_TEXT
Task List Type	TASKLIST_TYPE
Task List Group	TASKLIST_GROUP
Task List Group Counter	TASKLIST_GROUP_CTR
Task Details	IT_TEXT_LINES
Work Order Number	ORDER_NUMBER
The Meridium APM system maps a value from the Equipment record to which the Task record is linked, based upon the configuration of the query *Get SAP ID for Equipment*, which is stored in the Catalog folder \\Public\Meridium\Modules\SAP Integration Interfaces\Queries.	EQUIPMENT
The Meridium APM system maps a value from the Functional Location record to which the Task record is linked, based upon the configuration of the query *Get SAP ID for Functional Location*, which is stored in the Catalog folder \\Public\Meridium\Modules\SAP Integration Interfaces\Queries.	FUNCT_LOC

After these values are passed to the SAP BAPI, the Function Module then sends additional data from the associated SAP Task List to the SAP Order, as described in the following table.

Task List Field	Order Field
WERKS	PLANT

Task List Field	Order Field
ARBPL	MN_WK_CTR
None. The value *4* is always mapped.	SCHED_TYPE
IWERK	PLANPLANT

Also, for each Operation that belongs to the Task List, a corresponding Operation will belong to the Order. The following table identifies the values that are mapped from each Operation that is attached to the Task List to each Operation that is attached to the Order.

Task List Field	Order Field
ARPBL	WORK_CNTR
VORNR	ACTIVITY
STEUS	CONTROL_KEY
WERKS	PLANT
LTXA1	DESCRIPTION
TXTSP	LANGU
KTSCH	STANDARD_TEXT_KEY
LOANZ	NO_OF_TIME_TICKETS
LOART	WAGETYPE
QUALF	SUITABILITY
LOGRP	WAGEGROUP
SORTL	SORT_FLD
LIFNR	VENDOR_NO
BMSCH	QUANTITY
MEINH	BASE_UOM
PREIS	PRICE
PEINH	PRICE_UNIT
SAKTO	COST_ELEMENT
WAERS	CURRENCY

Task List Field	Order Field
INFNR	INFO_REC
EKORG	PURCH_ORG
EKGRP	PUR_GROUP
MATKL	MATL_GROUP
ANZZL	NUMBR_OF_CAPACITIES
PRZNT	PERCENT_OF_WORK
INDET	CALC_KEY
LARNT	ACTTYPE
ANLZU	SYSTCOND
ISTRU	ASSEMBLY
VERTN	INT_DISTR
PLIFZ	PLND_DELRY
DAUNO	DURATION_NORMAL
DAUNE	DURATION_NORMAL_UNIT
EINSA	CONSTRAINT_TYPE_START
EINSE	CONSTRAINT_TYPE_FINISH
ARBEI	WORK_ACTIVITY
ARBEH	UN_WORK
AUFKT	EXECFACTOR
SLWID	FIELD_KEY
USR00	USR00
USR01	USR01
USR02	USR02
USR03	USR03
USR04	USR04

Task List Field	Order Field
USR05	USR05
USE05	USE05
USR06	USR06
USE06	USE06
USR08	USR08
USR09	USR09
USR10	USR10
USR11	USR11

Recommendation Values Mapped to SAP

The following table explains the Recommendation fields that are used to populate SAP Notification fields when you use the Notification Creation Interface.

Meridium APM Field Caption	SAP Table	SAP Field ID	SAP Field Caption	Notes
Recommendation Headline	VIQMEL	QMTXT	Short Text	None
Functional Location ID	VIQMEL	TPLNR	Functional Location	None
Asset ID	VIQMEL	EQUNR	Equipment Number	None
Recommendation Description	None	None	Notification Long Text	None
None	VIQMEL	QMART	Notification Type	By default, the Notification Type field in SAP is always populated with the value *M1*. You can, however, [configure the Meridium APM system to create other notification types](#).
None	QMEL	QMNAM	Reported By	The Reported By field in SAP is populated with the first twelve characters of the user ID of the Security User that was logged in to the Meridium APM Framework when the Notification was created.

ABAP

Advanced Business Application Programming, a high-level programming language created by SAP for programming the SAP Application Server.

Equipment Characteristics Extraction Interface

Allows you to transfer Equipment characteristics from SAP to Meridium APM.

Equipment Extraction Interface

Allows you to transfer Equipment from SAP to Meridium APM.

Functional Location Characteristics Extraction Interface

Allows you to transfer Functional Location characteristics from SAP to Meridium APM.

Functional Location Extraction Interface

Allows you to transfer Functional Locations from SAP to Meridium APM.

Notification and Order Extraction Interface

Allows you to transfer Notifications and Orders from SAP to Meridium APM.

Notification Creation Interface

Allows you to transfer Recommendation records from Meridium APM to SAP in the form of Notifications.

SAP PI

SAP's enterprise application integration software. PI (Process Integration) is used to exchange information among both internal and external software and systems.

Work Management Interface

Allows you to manage scheduled work in one of two ways:

- Create Task records in Meridium APM and transfer the data to SAP. This option allows you to create and update records in Meridium APM and transfer the data to SAP.

- Create and manage data in SAP and transfer it to Meridium APM as Task records. This option allows you to create and update items in SAP and transfer the data to Meridium APM.