Meridium APM mobileAPM Installation

3.6.1.3.0

meridium

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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.meridium.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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Overview of mobileAPM

The *mobileAPM* feature, which lets you perform inspections and access equipment and location information using a mobile device. To access the mobileAPM application, you must use a supported mobile device, such as an Apple iPad, that contains the mobileAPM App.

You can view the mobileAPM user instructions at https://www.me-ridi-um.com/secure/documentation/v36000/WebHelp/mergedProjects/mobileAPM/Default.htm

System Requirements

The *mobileAPM* feature lets you perform inspections and access equipment and location information using a mobile device or desktop computer. It consists of the following components:

- The mobileAPM server components
- The mobileAPM application

The mobileAPM server components are installed automatically when you install the Meridium APM Application Server. In addition to the Application Server, your system must contain the other basic Meridium APM architecture components.

To access the mobileAPM application, you must use one of the following types of supported devices:

- Mobile devices, such as Apple iPads, that contain the mobileAPM App.
- Desktop computers that use a Web browser.

In addition, the following devices are supported by mobileAPM:

- TSL 1153 Bluetooth Wearable UHF RFID Reader: This device provides a barcode scanner and an RFID reader.
- Socket CHS 8Ci mobile Bluetooth cordless barcode Scanner: Provides barcode scanning capability.

> **Note:** Throughout the documentation, we refer to devices (mobile and desktop) that access the mobileAPM application as *mobileAPM workstations*.

The Operator Rounds license is also required to take advantage of mobileAPM functionality.

The following image provides an illustration of the architecture components that are required for deploying mobileAPM.
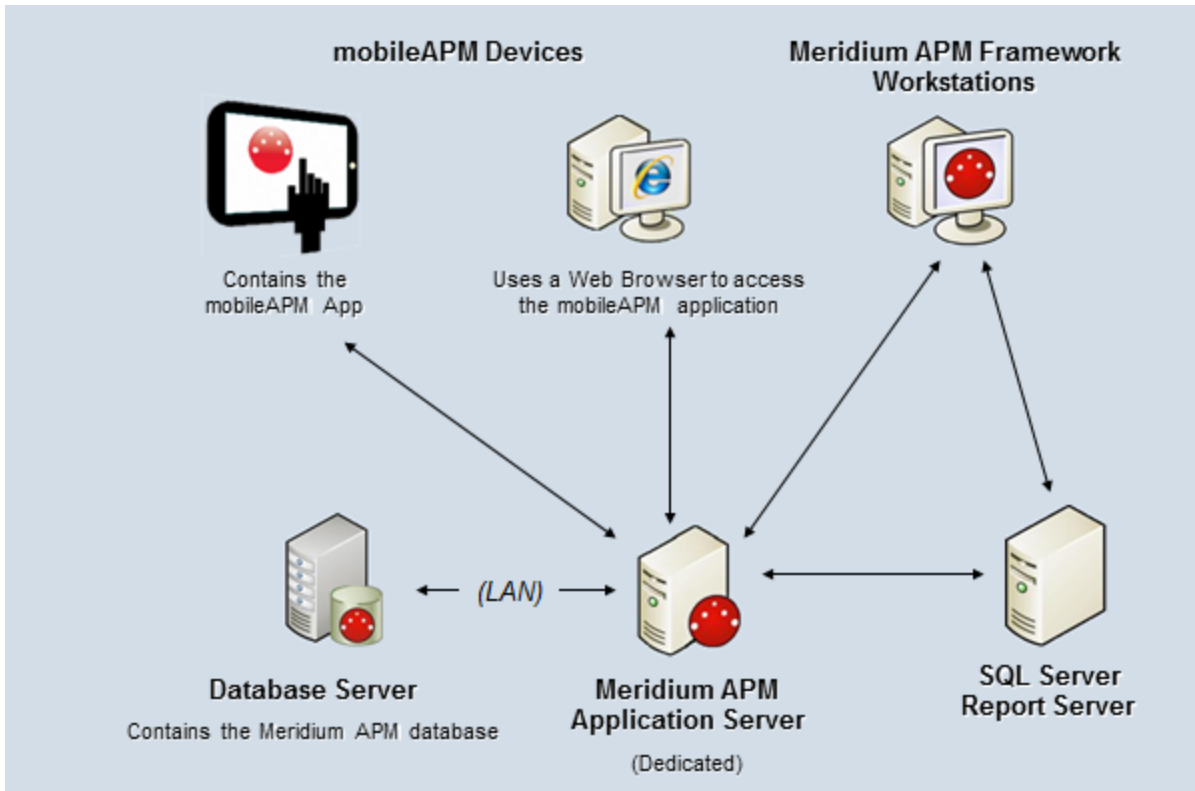
The following table lists the minimum requirements, recommendations, and tested environments for mobileAPM workstations.

Workstation	Requirements	Recommendations	Tested Environments
Mobile Device	**One of the following Operating Systems:** • iOS 9.x and higher • iOS 10.x and higher • Android Jelly Bean 4.1 and higher • Android Lollipop 5.0 and higher	When using a mobile device, we recommend that you access mobileAPM using the App instead of a Web browser. MobileAPM is recommended for use on devices having a screen size of 5.5" or larger.	• Samsung Galaxy Tab S 10.5: Android 5.0.2 • Apple iPad • Samsung Galaxy

Workstation	Requirements	Recommendations	Tested Environments
Desktop Computer	**One of the following Operating Systems:** • Windows 7 • Windows 8.1 • Windows 10 **One of the following Web Browsers:** • Google Chrome 31 and above • Apple Safari 7 and above • Internet Explorer 11	No specific recommendations.	• Windows 7 with Google Chrome 31.0.1650.63 m and 32.0.1700.72 m • Windows 8 with Google Chrome 31.0.1650.63 m and 32.0.1700.72 m • Windows 8.1 with Internet Explorer 11.0.9600.16476 • Windows 7 with Internet Explorer 11.0.9600.16476

First-Time Deployment Workflow

> **Note**: In the distribution package for a given release, the version number for mobileAPM may be different than the version number for Meridium APM. If you have questions about the differences between version numbers, contact the Meridium, Inc. Professional Services department.

Deploying and configuring mobileAPM for the first time includes completing multiple steps, which are outlined in the table in this topic. The steps in this section of the documentation provide all the information that you need to deploy mobileAPM on top of the basic Meridium APM architecture.

Step	Task	Required/Optional
1	Ensure that your system meets the minimum system requirements.	Required
2	Configure the mobileAPM application using the Asset Hierarchy Tool.	Required
3	Configure mobileAPM to recognize updates in Meridium APM.	Required
4	Configure search performance.	Required
5	Assign Security Users to mobileAPM Security Groups.	Required
6	Configure search security.	Required
7	Install the mobileAPM App on the devices that you plan to use.	Required

> **Note:** If your Meridium APM implementation is set up using a load balancing configuration, you must complete some additional steps for mobileAPM to work properly. For details, see Meridium Knowledge Base Article 630, which is available from https://www.meridium.com/support.

Upgrade or Update mobileAPM to 3.6.1.3.0

> **Note:** In the distribution package for a given release, the version number for mobileAPM may be different than the version number for Meridium APM. If you have questions about the differences between version numbers, contact the Meridium, Inc. Professional Services department.

The following tables list the steps that are required to update or upgrade mobileAPM to 3.6.1.3.0. These steps assume that you have completed the steps for upgrading the basic Meridium APM system architecture.

Update from any version V3.6.1.0.0 through V3.6.1.2.0

Step	Task	Required/Optional	Notes
1	If you have not already completed this step during first-time deployment, Meridium, Inc. suggests setting the Recommendation Priority Values in the Asset Hierarchy Tool.	Optional	This step is required only if you want to filter the results displayed on the Recommendations tab displayed on your mobile device.

Upgrade from any version V3.6.0.0.0 through V3.6.0.12.6

Step	Task	Required/Optional	Notes
1	Modify configuration files.	Optional	This step is required only if your current version is V3.6.0.1.0.
2	Verify the culture property of existing Security Users.	Optional	This step is required only if your current version is prior to V3.6.0.6.0.

Step	Task	Required/Optional	Notes
3	Install and configure mobileAPM on the Panasonic ToughPad FZ-M1 device or any device with Windows 8.1.	Optional	This step is required only if your current version is prior to V3.6.0.12.0.

Modify Configuration Files

The following table lists the steps that are required to configure mobileAPM for V3.6.0.2.0. These steps assume that you have completed the steps for upgrading the components in the basic Meridium APM system architecture.

Step	Task	Required/Optional
1	Modify the file *Meridium.MobileAPM.AHTService.exe.config*.	Required
2	Modify the file *Meridium.IndexScheduler.Service.exe.config*.	Required

Verify the Culture Property of Existing Security Users

You must complete the following steps to configure mobileAPM for V3.6.0.6.0. This confirms that the correct localization of mobileAPM appears for users.

To confirm or set the Culture property of an existing Security User:

1. In the Configuration Manager, on the Application Users window, click the hyperlinked User ID of the Security User that you want to modify.

   The Application User dialog box appears, displaying the information that is currently associated with the selected Security User.

2. In the **Culture** list box, ensure the appropriate setting corresponding to the [localization you want to display](#) is selected.

   > **Note:** If a user does not have a Culture setting specified, the mobileAPM App will appear in *English* by default.

3. Click the **Save** button.

   Your changes are saved to the database. After upgrading the mobileAPM App and logging in, the user will see the language based on the setting that you selected in step 2.

Applying V3.6.0.12.0

You must complete the following steps to install mobileAPM for V3.6.0.12.0 on the Panasonic ToughPad FZ-M1 or any device with Windows 8.1, and to integrate UHF RFID scanning with mobileAPM on the Panasonic ToughPad FZ-M1. If you are installing mobileAPM on any other supported device or platform, you should view the mobileAPM help topic "About Installing the mobileAPM App on Mobile Devices."

To install mobileAPM on a Panasonic ToughPad FZ-M1 or any Windows 8.1 device:

1. Shut down and restart the device.

2. Uninstall mobileAPM (if previously installed) across all the users on the device before installing.

3. Download **mobileAPM.zip** from your distribution site to the device.

4. Unzip and extract **mobileAPM.zip** to a local folder on the device.

5. Right-click on **RunOnce.bat** and select **Run as administrator**.

6. The **User Account Control** prompt will be displayed. Select **Yes**.

7. The mobileAPM installation will begin. MobileAPM will be visible in the **Installed Apps** directory when complete.

To integrate UHF RFID scanning with mobileAPM on a Panasonic ToughPad FZ-M1:

> Note: The **Dashboard for Panasonic PC** application must be installed before integrating the UHF RFID scanning with mobileAPM. At the time of this release, the **Dashboard for Panasonic PC** can be downloaded from http://pc-dl.panasonic.co.jp/dl/download/file/067754/s/d5153c7e6de73b36/PanasonicDashboardApp_v2.10l14l(forfz-m1nonjpn)_M1C_W8164_ss15599.exe.

1. Download **Panasonic.zip** from your distribution site to your device.

2. Unzip and extract **Panasonic.zip** to a local folder on the device.

3. Open **Command Prompt** window as an Administrator.

4. Type **<extracted folder path>\install-MeridiumRFIDScanService.bat** and press or tap **Enter**. This will start the installation process.

5. The **Set Service Login** prompt will be displayed. You should enter the below values as follows.

   > **Username** - enter <domain>\<username> of the logged on user.

   > **Password** - enter the password for the logged on user.

   > **Confirm password** - re-type the password previously entered.

6. After entering the information in step 6, click **Ok**. The command prompt window will close.

7. You should verify the installation using the following steps.

   Open the **Run** window and type **services.msc**.

   Click on **Ok.**

   The **Services** window will open.

   Look for the service named **Meridium RFID Scan Service.**

   If the status is **Running**, installation was successful.

8. After installing the above application, open the Panasonic Dashboard.

9. Under the **System** tab, in the **Tablet buttons options**, select **Change Settings**.

10. The **Tablet PC Settings** window will open.

11. Under the **Buttons** tab, in the **Button settings for: dropdown**, select **All orientations.**

12. In the grid below the same window, select **Tablet button with A** and click **Change Button.**

13. The **Tablet Button Actions** window will open.

14. In the **Press** dropdown, select **Start a program.**

15. In the **Press and hold** dropdown, select **None**.

16. In the **Program location** box, click **Browse**.

17. The **Browse for program** window will open.

18. Open the folder **C:\Meridium\Panasonic\RFIDService** and change the **Files of type** dropdown to **Batch Files**.

19. Select **trigger-MeridiumRFIDscanService.bat** and click **OK** to closes the window.

20. In the **Press and hold** dropdown, select **None**.

21. In the **Tablet Button Actions** window, click **OK** to save your changes.

22. In the **Tablet PC Settings** window, click **Apply** and then **OK** to save your changes.

23. Close the **Dashboard for Panasonic PC** application.

24. Integration is complete. You can now use the **A** button located on the top right of your device to scan UHF RFID tags.

Note: User cannot scan RFID values into Notepad using the **A** button.

mobileAPM Configuration Options

Using the Asset Hierarchy Tool, you can configure the following items for your mobileAPM application users:

- The labels that appear on the navigation bar and the items that those labels represent (e.g., areas, units, equipment, and so on). This configuration component is *required*. If it is not completed, users will not be able to use the mobileAPM application.

- The criticality levels that they can use to sort data. This configuration component is *required*. If it is not completed, users will not be able to use the mobileAPM application.

- The taxonomy levels that they can use to filter data. This configuration component is *optional*. If it not completed, users will not be able to filter data based on taxonomy levels, but they will be able to use the rest of the application successfully.

- The recommendation priority settings that they can use to filter data. This configuration component is *optional*. If not completed, users will not be able to filter data based on recommendations based on the mapped recommendation priority, but they will be able to use the rest of the application successfully.

Accessing the Asset Hierarchy Tool

You will use the Asset Hierarchy Tool to configure various components of the mobileAPM application, such as the criticality levels that your company uses. The following instructions explain how to access this tool.
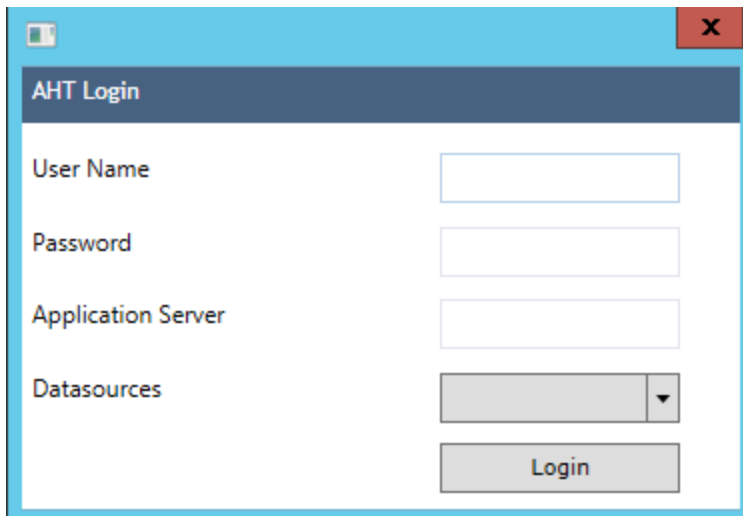
To access the Asset Hierarchy Tool:

1. On the dedicated Meridium APM Application Server, navigate to the following folder:

   C:\Program Files\Meridium\ApplicationServer\Utility

2. Double-click the file **AssetHierarchyTool.exe**.

   The **AHT Login** screen appears.

3. Log in to the data source that you want to configure. In the **Application Server** text box, you will need to type the name of the Meridium APM Application Server machine containing the data source that you want to configure.

   The Asset Hierarchy Tool appears.

Overview of the Asset Hierarchy Tool

You can use the Asset Hierarchy Tool to configure the mobileAPM application. To support this configuration, the Asset Hierarchy Tool is divided into three main sections:

- **Hierarchy** section
- **Criticality** section
- **Recommendation Priority** section
- **Taxonomy** section

About the Hierarchy Section

The **Hierarchy** section appears at the top of the Asset Hierarchy Tool.

The **Hierarchy** section allows you to configure the labels that appear on the navigation bar and the items that those labels represent (e.g., areas, units, equipment, and so on). The process for using the **Hierarchy** section is outlined in the following table.

Task	Example
Select the family containing a field whose value identifies the levels that you want to see on the navigation bar. Throughout the documentation, this family is referred to as the *primary family*.	You select the *Equipment* family.
Define the names of the levels that you want to see on the navigation bar.	You define the following levels: • Company • Site • Area • Unit • Equipment
Identify the field(s) whose values determine the items that become available when you select each level on the navigation bar. Throughout the documentation, the selected fields are referred to as the *mapped fields*.	You select the *Functional Location* field.

Task	Example
Specify which parts of the value in the selected fields represent which levels on the navigation bar. Throughout the documentation, the selected parts are referred to as the *mapped values*.	In each Equipment record, the Functional Location field contains a value like this: MRD - ROA - REFN - RF031 - G004 For the *Site* level of the navigation bar, you specify that the *second part* of the value in the Functional Location field identifies the site. So in the previous example value, *ROA* represents the site: MRD - ==ROA== - REFN - RF031 - G004

Although the individual steps for using the **Hierarchy** section are listed separately in the table, you will most likely complete them all in the same session, one after the other. In the documentation, the overall workflow is broken down into smaller steps to help you understand the process more easily. In a realistic scenario, you will complete them all during the same session instead of logging out and back in to the Asset Hierarchy Tool in between steps.

Step 1: Selecting the Primary Family

You can use the following navigation bar to determine where you are in the process of configuring the **Hierarchy** section. Your current step is shaded blue.

Select the Primary Family	Define the Names of the Navigation Bar Levels	Identify the Mapped Fields	Identify the Mapped Values

The first step in configuring the mobileAPM navigation bar is to select the primary family. The primary family is the family containing a field whose value identifies the levels that you want to see on the navigation bar. After you select a primary family, wherever you can select a field from a family in the Asset Hierarchy Tool, the list of available fields will come from the primary family.

To select the primary family:

1. [Access the Asset Hierarchy Tool](#).

2. In the **Select Family Type** list, select **Primary Family**.

3. In the **Select Family** list, select the family that you want to use as the primary family.

4. Click the **Save** button.

   Your changes are saved.

Step 2: Defining the Names of the Navigation Bar Levels

You can use the following navigation bar to determine where you are in the process of configuring the **Hierarchy** section. Your current step is shaded blue.

Select the Primary Family	Define the Names of the Navigation Bar Levels	Identify the Mapped Fields	Identify the Mapped Values

In the mobileAPM application, the navigation bar contains five levels, as illustrated in the following image.
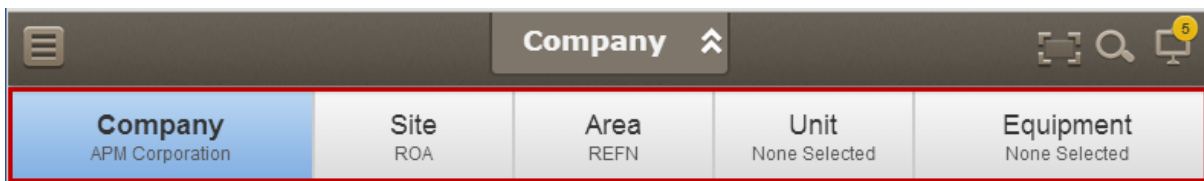
Use the following instructions to define the name that appears on each level (e.g., *Site* in the previous image) and the description of the far left level. The previous image is referenced throughout the following instructions for example purposes.

> **Note:** Even if your location hierarchy contains more than five levels, you can map only five levels to the mobileAPM navigation bar. This means that you will need to determine which five levels of your hierarchy are most significant and should be represented on the navigation bar.

To define the names of the levels that appear on the navigation bar:

1. In the text box containing the text *Level 0*, type the name that you want to appear on the far left level of the navigation bar. The example image uses the name *Company*.

2. In the text box to the right of the *Level 0* text box, type the description that you want to appear below the name. The example image uses the description *APM Corporation*.

   Below the text boxes in which you typed a name and description, you will see a grid that looks like this:

You will use the **Level** text boxes in this grid to complete the process of defining the names of the remaining levels on the navigation bar.

3. In the first **Level** text box, type the name that you want to appear to the right of the level that you defined in step 1 of these instructions. The example image uses the name *Site*.

4. In the second **Level** text box, type the name that you want to appear to the right of the level that you defined in step 3 of these instructions. The example image uses the name *Area*.

5. In the third **Level** text box, type the name that you want to appear to the right of the level that you defined in step 4 of these instructions. The example image uses the name *Unit*.

6. In the fourth **Level** text box, type the name that you want to appear to the right of the level that you defined in step 5 of these instructions. The example image uses the name *Equipment*.

Using these examples, our configuration looks like this:

7. Click the **Save** button to save your changes.

Your changes are saved.
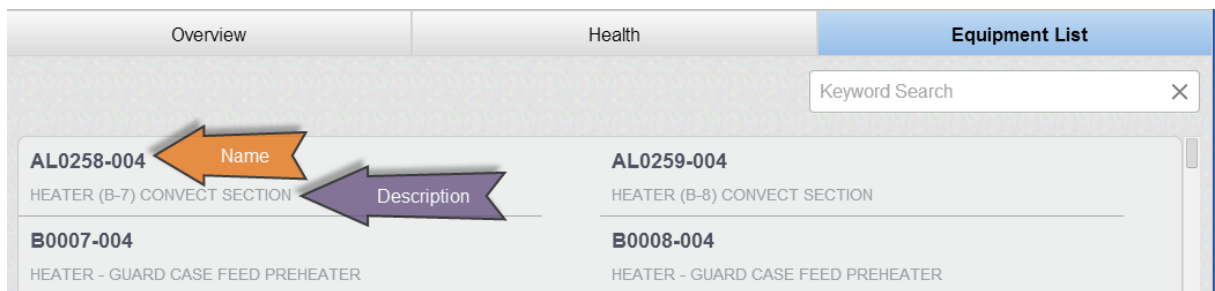
Step 3: Identifying the Mapped Fields

You can use the following navigation bar to determine where you are in the process of configuring the **Hierarchy** section. Your current step is shaded blue.

Select the Primary Family	Define the Names of the Navigation Bar Levels	Identify the Mapped Fields	Identify the Mapped Values

After you define the names of the levels on the navigation bar, you must identify the mapped fields.

To identify the mapped fields:

1. In the grid in the **Hierarchy** section, select the first row.

2. In the selected row, in the **Level Description Field** list, select the field (from the primary family) whose value you want to be displayed as the *description* of each item that appears when you select a level on the navigation bar. In the mobileAPM application, the description appears below the name.

3. In the selected row, in the **Mapped Field** list, select the field (from the primary family) whose value you want to use to determine the *name* of each item that appears when you select a level on the navigation bar. If you select a field that contains a concatenated value, you must refine your selection by identifying which parts of that field should appear as the name on which levels of the navigation bar.

4. Repeat steps 1 through 3 for each row in the grid.

5. Click the **Save** button.

   Your changes are saved.

Step 4: Identifying the Mapped Values

You can use the following navigation bar to determine where you are in the process of configuring the **Hierarchy** section. Your current step is shaded blue.

Select the Primary Family	Define the Names of the Navigation Bar Levels	Identify the Mapped Fields	Identify the Mapped Values

If you select a mapped field that contains a concatenated value, where each part of the concatenation represents a different item on your navigation bar (e.g., MRD - ROA - REFN - RF031 - G0044 - 31), you must identify which parts of that value represent which levels of the navigation bar.

To identify the mapped values for mapped fields with concatenated values:

1. In the grid in the **Hierarchy** section, select the first row whose **Mapped Field** list contains a field that contains a concatenated value.

2. In the selected row, in the **Delimiter** cell, click the ... button.

   The **Edit Delimiter** dialog box appears.
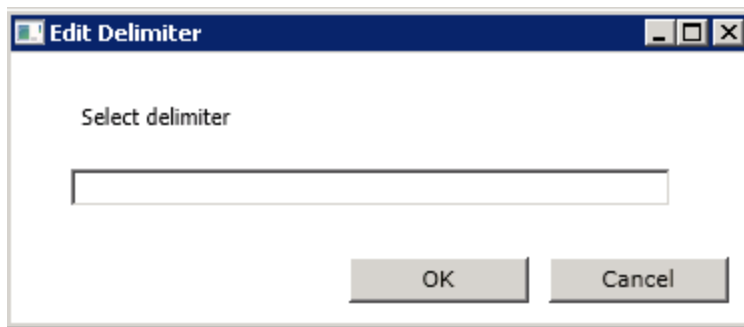
3. In the text box, type the delimiter that is used to separate each part of the concatenated value, and click **OK**.

4. In the selected row, in the **Sub Field Selection** list, select the part of the concatenated value that represents the navigation level represented by the selected row. The type of list that you see will differ depending upon how many parts the concatenated value contains. You will see one of the following types of lists:

-or-

5. Repeat steps 1 through 4 for each row whose **Mapped Field** list contains a field that contains a concatenated value.

6. Click the **Save** button.

   Your changes are saved.

A Complete Example

The following example illustrates a complete **Hierarchy** section configuration and the result that appears in the mobileAPM application.

Hierarchy Section

mobileAPM Application

Using the example configuration, in the mobileAPM application, the following levels appear on the navigation bar:
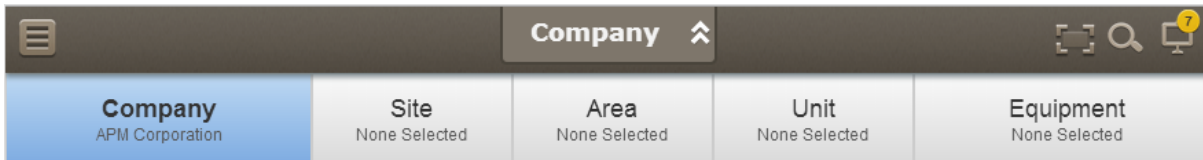
At the *Company* level, three sites are listed: *DUB*, *FAC*, and *ROA*
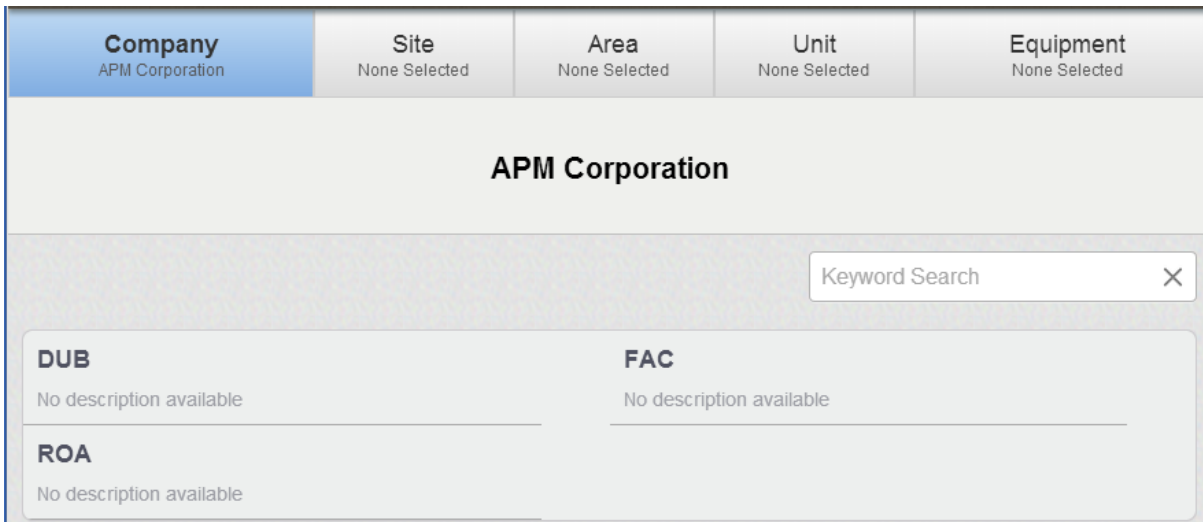
Looking back at the configuration, you can see that in Equipment records, the *second* part of the value in the Functional Location field determines which sites are listed at the Company level.

In the Meridium APM database, some Equipment records contain the value *ROA* in the second part of the Functional Location value (e.g., MRD-ROA-REFN-RF002-AI0001-002). Therefore, *ROA* appears as a site at the *Company* level.

The same is true for the *FAC* and *DUB* items in the list.

At the *Area* level, several units are listed. One of those units has the name *RF002* and the description *Roanoke Refining - Unit RF003*.

Looking back at the configuration, you can see that in Equipment records, the *fourth* part of the value in the Functional Location field determines which units will be listed at the Area level.

In the Meridium APM database, some Equipment records contain the value *RF002* in the fourth part of the Functional Location value, as illustrated in the following query results:

Therefore, *FR002* appears as a unit at the *Area* level.

For the unit that is circled in the previous image, the description is *Roanoke Refining - Unit RF003*, which matches the Planning Plant Description for this Equipment record. In the configuration, the *Planning Plant Description* field is selected as the description field for all units:

About the Criticality Section

The **Criticality** section appears below the [Hierarchy section](#) in the [Asset Hierarchy Tool](#).

You can use the **Criticality** section to define:

- Which field in the primary family stores criticality values.
- How your criticality values are mapped to the five hard-coded criticality values (*Very High*, *High*, *Medium*, *Low*, and *Very Low*).

We refer to this process as *mapping your criticality values*.

Criticality values are used in the mobileAPM application for filtering items on the **Health** page. The **Health** page contains the five criticality indicators.

Each icon represents a different criticality level, as indicated by the callouts in the following image:

Based on these mappings, Equipment records in the mobileAPM application can be filtered by clicking the appropriate icon.

Mapping Your Criticality Values

To map your criticality values:

1. Access the Asset Hierarchy Tool.

2. In the **Select Family Type** list, select **Primary Family**.

3. In the **Criticality** section, in the **Select Criticality Field** list, select the field that stores criticality values.

   The **Mapped Criticality Values** lists are populated automatically with values that are currently stored in the database in the selected field.

4. In the first row in the grid, in the **Mapped Criticality Values** list, select your criticality value(s) that you consider equivalent to *very high*.

5. Repeat step 4 for each row in the grid. If needed, you can map the same stored value to more than one hard-coded value. For example, if you use the values *High*, *Medium*, and *Low*, you could map them like this:

6. Click the **Save** button.

   Your changes are saved.

About the Recommendation Priority Section

The Recommendation Priority section appears below the **Criticality** section in the Asset Hierarchy Tool.

Recommendation Priority Values	Mapped Recommendation Priority Values
HIGH	High
MEDIUM	Medium
LOW	Low

You can use the Recommendation Priority section to define how your Recommendation Priority values are mapped to three hard-coded recommendation priority values (*HIGH, MEDIUM, LOW*). We refer to this process as *mapping your Recommendation Priority values*.

Recommendation Priority values are used in the mobileAPM application for filtering recommendations on the **Recommendation** page. The **Recommendation** page contains the three recommendation priorities. Each icon represents a different recommendation priority level, as indicated by the callouts in the following image:

Based on these mappings, Recommendation records in the mobileAPM application can be filtered by clicking the appropriate icon.

Mapping Your Recommendation Priority Values

To map your Recommendation Priority values:

1. Access the Asset Hierarchy Tool.

2. In the **Select Family Type** list, select **Primary Family**.

3. In the **Recommendation Priority section**, in the **Recommendation Priority Values** column, select the first row in the grid (i.e., *HIGH*).
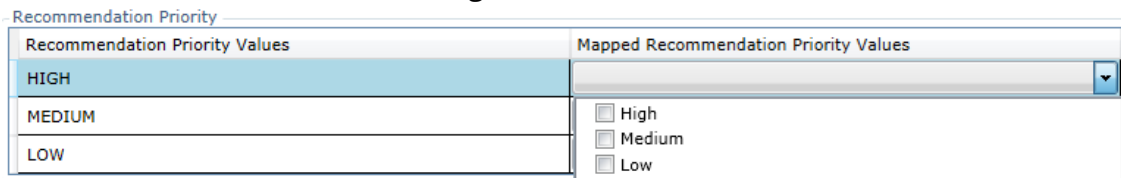
4. In the **Mapped Recommendation Priority Values** list, select your recommendation priority value(s) that you consider equivalent to *HIGH*.

   > Note: The **Mapped Recommendation Priority Values** list is populated automatically with values that are stored in the MI_PRIORITY system code table in the Meridium APM database.

5. Repeat step 4 for each row in the grid. You cannot map the same stored value to more than one hard-coded value. However, multiple stored values can be mapped to a single hard-coded value.

   The following image shows an example of completed mappings.
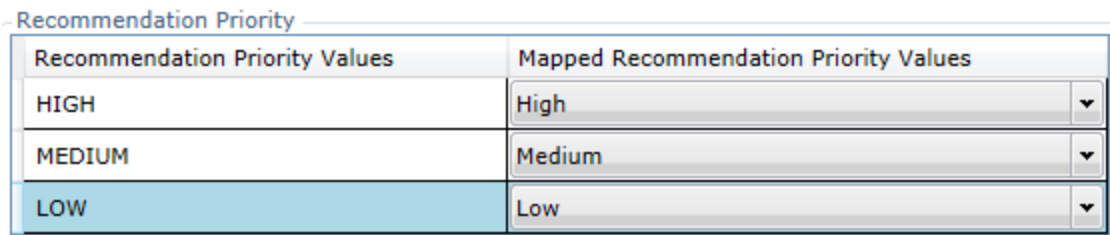
6. Click the **Save** button.

   Your changes are saved.

About the Taxonomy Section

The **Taxonomy** section appears below the Recommendation Priority section in the Asset Hierarchy Tool.

You can use the **Taxonomy** section to define which fields in the primary family you want to map to the three hard-coded taxonomy levels (*Category*, *Class*, and *Type*).

Your taxonomy values are used in the mobileAPM application for filtering items on the **Health** page. The **Health** page contains three filters for the following Category, Class, and Type:

If your configuration indicates that values in the field *Equipment Category* should be mapped to the *Category* level, those specific equipment category values will appear in the Category filter on the **Health** page.

Mapping Your Taxonomy Fields

To map your taxonomy fields to the hard-coded taxonomy levels:

1. [Access the Asset Hierarchy Tool](#).

2. In the **Select Family Type** list, select **Primary Family**.

3. In the **Taxonomy** section, in the first row, in the **Mapped Field** list, select the field containing values that represent your *categories*.

4. In the second row in the grid, in the **Mapped Field** list, select the field containing values that represent your *classes*.

5. In the third row in the grid, in the **Mapped Field** list, select the field containing values that represent your *types*.

   For example, if you selected the baseline Equipment family as the primary family, your mappings would look like this:

Level	Mapped Field	
Category	Taxonomy Category	▼
Class	Taxonomy Class	▼
Type	Taxonomy Type	▼

6. Click the **Save** button.

   Your changes are saved.

About Configuring mobileAPM to Recognize Updates in Meridium APM

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

The file Meridium.MobileAPM.AHTService.exe.config stores information that allows the mobileAPM application to consistently display the most updated information in the Meridium APM database.

After you have configured the mobileAPM application using the Asset Hierarchy Tool, you must modify this file to define the data sources that you have configured.

> **IMPORTANT:** Whenever you modify this file, you must restart the Meridium Mobile AHT 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.

Modifying the File Meridium.MobileAPM.AHTService.exe.config

The following instructions provide details on modifying the file Meridium.MobileAPM.AHTService.exe.config manually on the Meridium APM Application Server machine.

To modify the file Meridium.MobileAPM.AHTService.exe.config:

1. On the Meridium APM Application Server, navigate to the folder **<root>\Services**, where **<root>** is the root drive and folder where the Meridium APM Application Server is installed.

2. Make a copy of the file **Meridium.MobileAPM.AHTService.exe.config**, modify the copy, and then replace the originally installed version with the copied version.

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

4. In the file, within the **<meridiumConnections>** tags,

   a. Uncomment the example connection tag by deleting **<!--EXAMPLE:** and the corresponding **-->** from the end of the string.

   b. Within the **connection name** attribute, replace **TEST** with a name for the connection to the database. This value is used only by the configuration file.

   c. Within the **datasource** attribute, replace **V351_TEST_DV** with the name of the Meridium APM database that you configured using the Asset Hierarchy Tool.

   > **Note:** The *datasource* value is case sensitive. Type the database name exactly as it is defined in the Data Source Manager.

   d. Within the **userId** attribute, replace **meridiumUser** with the user name of the user whose credentials should be used to log in to the Meridium APM database that you specified as the **datasource** value.

   e. Within the **password** attribute, replace **PaSsWoRd** with the password that is associated with the user name specified as the **userId** value. You should not delete the **!** in front of the password. This symbol is not part of the password itself. Instead, this symbol will cause the password to be encrypted automatically when the service is started.

5. If you configured more than one data source using the Asset Hierarchy Tool, copy the content of the <meridiumConnections> tags that you just modified, paste it below the copied content, and repeat step 4 for that data source.

6. Save the file.

   Your settings are applied.

About the Meridium Mobile AHT Service

The Meridium Mobile AHT Service ensures that the mobileAPM application consistently displays the most updated information in the Meridium APM database. The Meridium Mobile AHT Service is installed with the Meridium APM Application Server as a *manual* service. It must be started manually after you [modify the file Meridium.MobileAPM.AHTService.exe.config](#).

After you start the service, the passwords that you typed in the file Meridium.MobileAPM.AHTService.exe.config will be encrypted automatically.

> **IMPORTANT:** The Meridium Mobile AHT Service must be restarted each time you modify the file Meridium.MobileAPM.AHTService.exe.config.

This procedure assumes that you are familiar with managing Windows Services and does not include details on how to restart them.

About Configuring Search Performance

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

The file Meridium.IndexScheduler.Service.exe.config stores information that allows the Meridium APM system to index your database, which causes mobileAPM searches to run quickly.

After you have configured the mobileAPM application using the Asset Hierarchy Tool, you must modify this file to define the data sources that you have configured.

> **IMPORTANT:** Whenever you modify this file, you must restart the Meridium Mobile Search 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.

Modifying the File Meridium.IndexScheduler.Service.exe.config

The following instructions provide details on modifying the file Meridium.IndexScheduler.Service.exe.config manually on the Meridium APM Application Server machine.

To modify the file Meridium.IndexScheduler.Service.exe.config:

1. On the Meridium APM Application Server, navigate to the folder **<root>\Services**, where **<root>** is the root drive and folder where the Meridium APM Application Server is installed.

2. Make a copy of the file **Meridium.IndexScheduler.Service.exe.config**, modify the copy, and then replace the originally installed version with the copied version.

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

4. In the file, within the **<meridiumConnections>** tags,

   a. Uncomment the example connection tag by deleting **<!--EXAMPLE:** and the corresponding **-->** from the end of the string.

   b. Within the **connection name** attribute, replace **TEST** with a name for the connection to the database. This value is used only by the configuration file.

   c. Within the **datasource** attribute, replace **V351_TEST_DV** with the name of the Meridium APM database that you configured using the Asset Hierarchy Tool.

   > Note: The *datasource* value is case sensitive. Type the database name exactly as it is defined in the Data Source Manager.

   d. Within the **userId** attribute, replace **meridiumUser** with the user name of the user whose credentials should be used to log in to the Meridium APM database that you specified as the **datasource** value.

   e. Within the **password** attribute, replace **PaSsWoRd** with the password that is associated with the user name specified as the **userId** value. You should not delete the **!** in front of the password. This symbol is not part of the password itself. Instead, this symbol will cause the password to be encrypted automatically when the service is started.

5. If you configured more than one data source using the Asset Hierarchy Tool, copy the content of the <meridiumConnections> tags that you just modified, paste it below the copied content, and repeat step 4 for that data source.

6. Save the file.

   Your settings are applied.

About the Meridium Mobile Search Service

The Meridium Mobile Search Service is used when you perform a search in the mobileAPM application. The Meridium Mobile Search Service is installed with the Meridium APM Application Server as a *manual* service. It must be started manually after you [modify the file Meridium.IndexScheduler.Service.exe.config](#).

After you start the service, the passwords that you typed in the file Meridium.IndexScheduler.Service.exe.config will be encrypted automatically.

> **IMPORTANT:** The Meridium Mobile Search Service must be restarted each time you modify the file Meridium.IndexScheduler.Service.exe.config.

This procedure assumes that you are familiar with managing Windows Services and does not include details on how to restart them.

About Configuring mobileAPM Security

For each mobileAPM user, you can restrict access to information based upon the locations with which the user is associated. For example, if you have a site in Roanoke, VA, only users that work at the Roanoke site can see information related to the Roanoke site. The mobileAPM application uses two types of security:

- **Navigation security:** Determines the items that appear when users select the *first* level (i.e., the left-most level) of the navigation bar. For example, if the first level of your navigation bar lists all *sites* within the company, security determines which *sites* appear when users select the *Company* level. Because the navigation bar allows you to drill down to lower-level locations, security automatically restricts information about all lower-level locations. For example, in the following image, if a user does not have access to site *ROA*, he also won't have access to information about all areas, units, and equipment that belong to ROA.
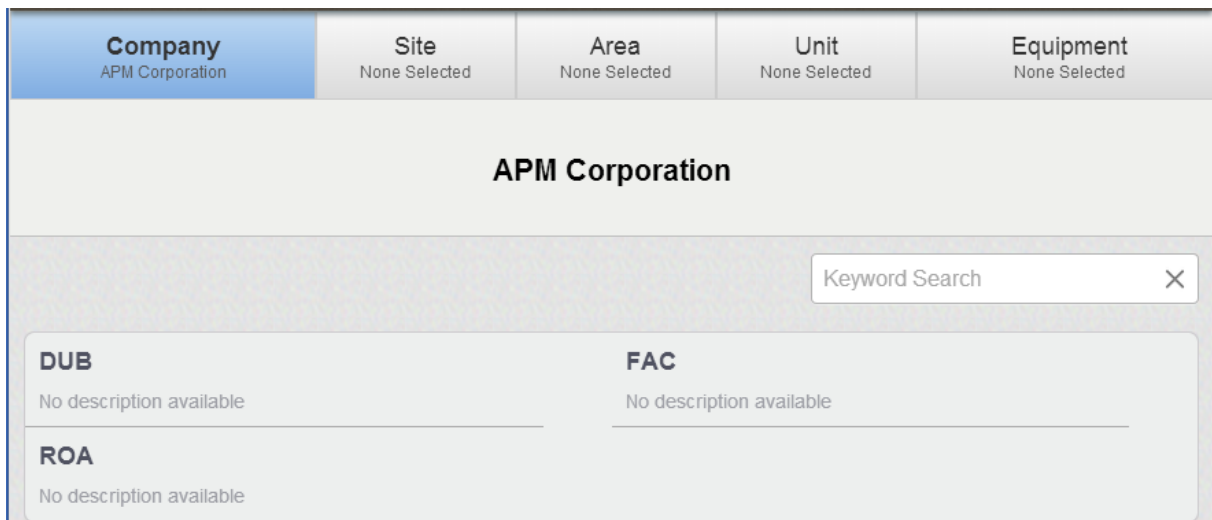
You configure navigation security using [mobileAPM Security Groups](#).

- **Search security:** [Determines the items that are returned in global search results](#). For example, if a user does not have access to the site *ROA*, if he performs a global search for *Pump*, the search results won't contain pumps that belong to ROA. Search security builds upon navigation security. You [configure search security](#) using the full text search feature in the Configuration Manager.

About mobileAPM Security Groups

When you save configuration settings in the Asset Hierarchy Tool, Security Groups are created automatically to represent each item that appears when users select the *first* level (i.e., the left-most level) of the navigation bar in the mobileAPM application. For example, if you have configured your navigation bar to look like the following image, one Security Group is created for each site that appears when users select the *Company* level of the navigation bar.
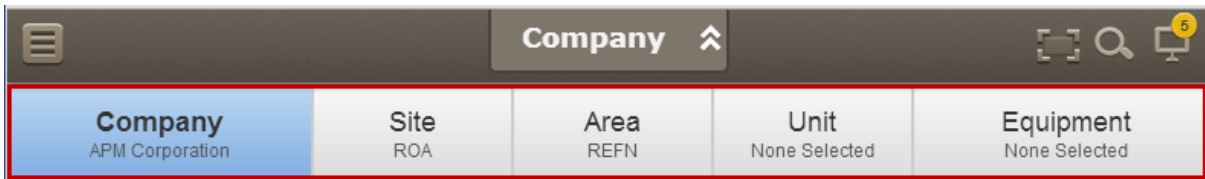
For example, for the three sites shown in the following image, three matching Security Groups are created.

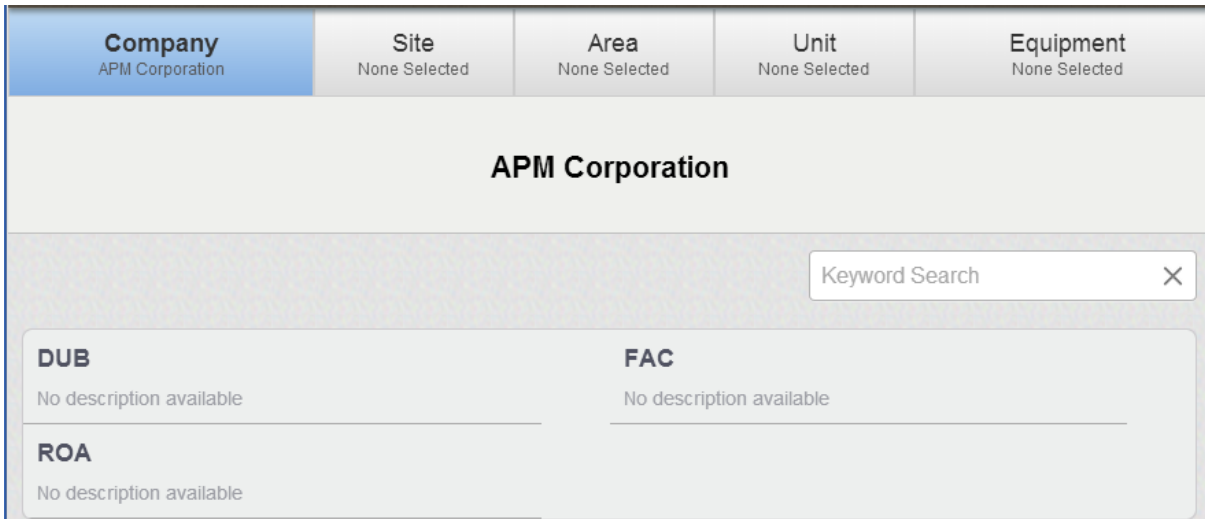For a user to be able to see an item (e.g., site) in the list, their corresponding Security User must be assigned to the Security Group representing that item (e.g., site). This feature allows you to restrict access to information about certain locations on a per-user basis.

All of the automatically created Security Groups are created as subgroups of *MAPM Security Group*. They are named *MAPM - <Item Name>*, where *<Item Name>* is the name of the item that appears in the mobileAPM application. Using the previous example, you can see that the Security Group for the *ROA* site is named *MAPM - ROA*:
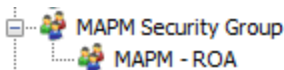
Assigning Security Users to mobileAPM Security Groups

To assign Security Users to mobileAPM Security Groups:

1. In the Configuration Manager, access the list of Security Groups.

2. In the list, expand the Security Group **MAPM Security Group**.

3. Add Security Users to the appropriate subgroups.

About Search Security

Search security restricts the results that are returned by global searches based upon the locations to which users have been granted access (via mobileAPM Security Group assignments). For example, if a user does not have access to the site *ROA*, if he performs a global search for *Pump*, the search results won't contain pumps that belong to ROA.

Global searches return records in the following families:

- Functional Location
- Equipment
- Recommendation (and any of its subfamilies)
- Route

For the system to determine which records to return to each user, it must determine the location to which each record is associated. For example, before determining whether or not to return an Equipment record to John Smith, it must determine the location to which that Equipment record is associated. If John Smith has access to that location, the Equipment record will be returned.

The system determines the location to which each record is associated by evaluating the following conditions, *in the following order*.

Condition	Outcome	Example
Is the family the primary family?	If *yes*, the location is identified as the value in the Level 2 mapped field in the Asset Hierarchy Tool configuration. If *no*, the next condition is evaluated.	The family is *Equipment*. The Equipment family is the primary family. The Level 2 mapped field is *Functional Location*. The Equipment record contains the value *ROA* in the Functional Location field. John Smith has access to ROA. The Equipment record is returned to John Smith.

Condition	Outcome	Example
Does the family contain a field for which the **Is Site Field** check box is selected (in the **Configure Search Fields** window in the Configuration Manager)?	If *yes*, the value in that field is used as the location. If *no*, the next condition is evaluated.	The Route family contains the field *Associated Site*, for which the **Is Site Field** check box is selected. A Route record contains the value *ROA* in the Associated Site field. John Smith has access to ROA. The Route record is returned to John Smith.
Is the family related to the primary family through only one relationship?	If *yes*, the location is identified as the value in the Level 2 mapped field in the Asset Hierarchy Tool configuration. If *no*, the next condition is evaluated.	The Recommendation family is related to the Equipment family through *only* the Has Recommendation relationship. The Equipment family is the primary family. The Level 2 mapped field is *Functional Location*. A Recommendation record is linked to an Equipment record containing the value *ROA* in the Functional Location field. John Smith has access to ROA. The Equipment record is returned to John Smith.

Condition	Outcome	Example
Is the relationship between the family and the primary family selected (in the **Configure Search Fields** window in the Configuration Manager)?	If *yes*, the location is identified as the value in the Level 2 mapped field in the Asset Hierarchy Tool configuration. If *no*, the location cannot be determined, and *all* records in the family are returned to *all* users.	The Recommendation family is related to the Equipment family through multiple relationships, including the Has Recommendations relationship. The Has Recommendations relationship is selected in the **Configure Search Fields** window. The Equipment family is the primary family. The Level 2 mapped field is *Functional Location*. A Recommendation record is linked to an Equipment record containing the value *ROA* in the Functional Location field. John Smith has access to ROA. The Equipment record is returned to John Smith.

If your system meets the following criteria, the location is identified as the value in the Level 2 mapped field in the Asset Hierarchy Configuration Tool:

- You use the baseline Equipment and Functional Location families.
- You link Equipment records to Functional Location records.
- The Equipment family is your primary family.

Users that have access to those locations, therefore, will see those Equipment and Functional Location records in global search results. No further manual configuration is required.

Regardless of whether or not your system meets these criteria, however, you must configure search security *manually* for the Recommendation and Route families. You configure search security using the full text search feature in the Configuration Manager.

Configuring Search Security

If you use the baseline families, link Equipment records to Functional Location records, and select the Equipment family as your primary family, search security will be configured automatically for the Functional Location and Equipment families. You must configure search security *manually* only for the Recommendation and Route families.

Configuring Search Security for the Recommendation Family

To configure search security for the Recommendation family:
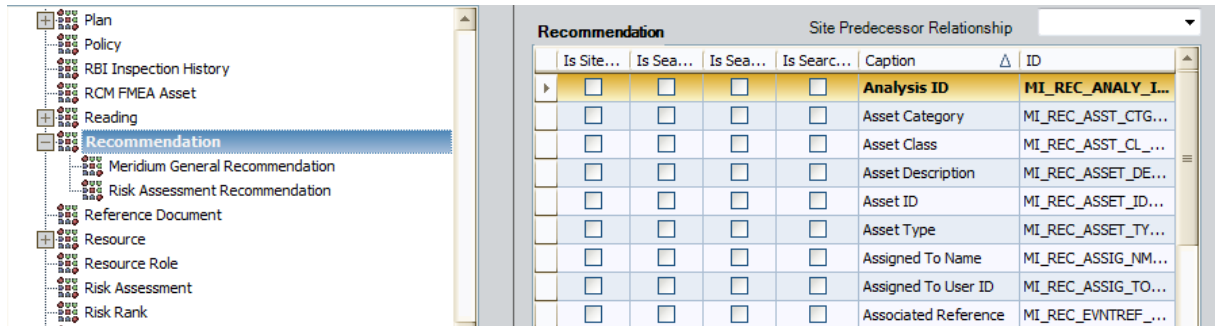
1. In the Configuration Manager, on the **Tools** menu, point to **Manage Full Text Search**, and click **Configure Search Fields**.

   The **Configure Search Fields** window appears.
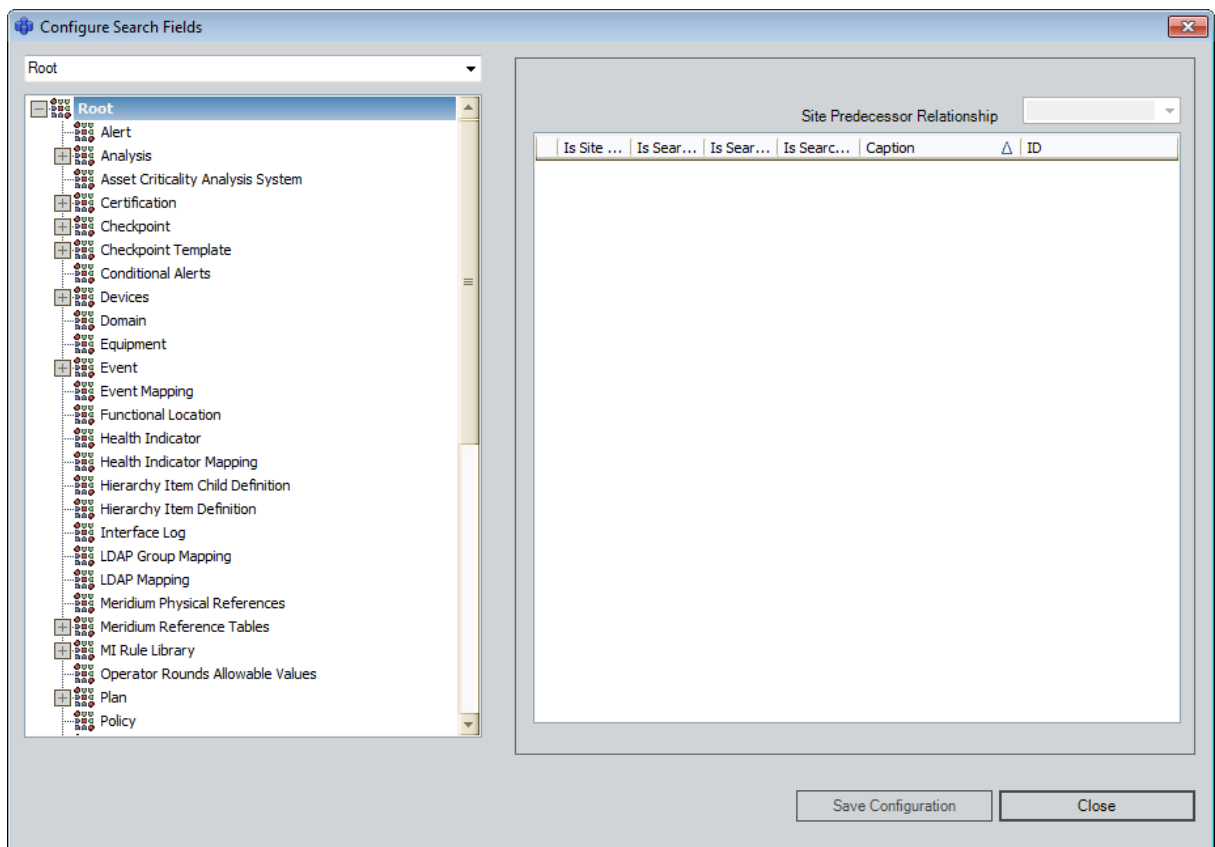
2. In the tree, select the **Recommendation** family.

   The Recommendation fields are listed to the right of the tree.

3. In the **Site Predecessor Relationship** list, select the **Has Recommendations** relationship family.

4. Continue to the next set of instructions for configuring search security for the Route family.

Configuring Search Security for the Route Family

To configure search security for the Route family, the Route family must meet at least one of the following conditions:

- It must contain a field that stores information about the corresponding location. No baseline field exists for this purpose, so you must have created a custom field for this purpose.

  > **Note:** If the caption of the field is *Site*, you do not need to configure search security any further using the following instructions. The value in the Site field will be used automatically as the location for each Route record.

  -or-

- It must be related to the primary family. If you use the Equipment family as the primary family, no baseline relationship exists between the Equipment family and the Functional Location family, so you must have created a custom relationship between the two families.

To configure search security for the Route family:

1. On the **Configure Search Fields** window, in the tree, select the **Route** family.

   The Route fields are listed to the right of the tree.

2. If the Route family contains a field that stores information about the corresponding location, in the row representing that field, select the **Is Site Field** check box.
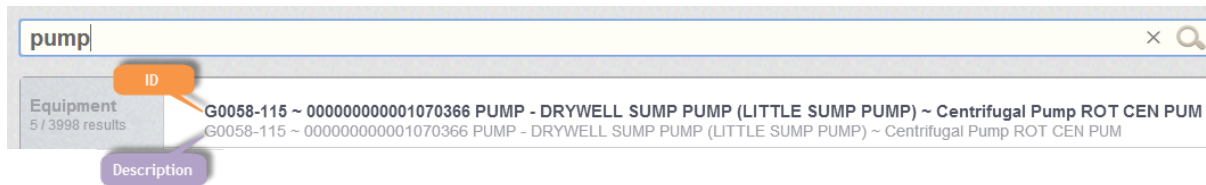
   -or-

   If the Route family does *not* contain a field that stores information about the corresponding location, in the **Site Predecessor Relationship** list, select the relationship family that relates the Route family to the primary family.

3. Click the **Save Configuration** button.

   Search security is configured.

Configuring the Appearance of Search Results

In global searches, by default, the *Record ID* is used as the ID *and* description of each item in the results. For example, the following image shows an identical ID and description for an Equipment record.
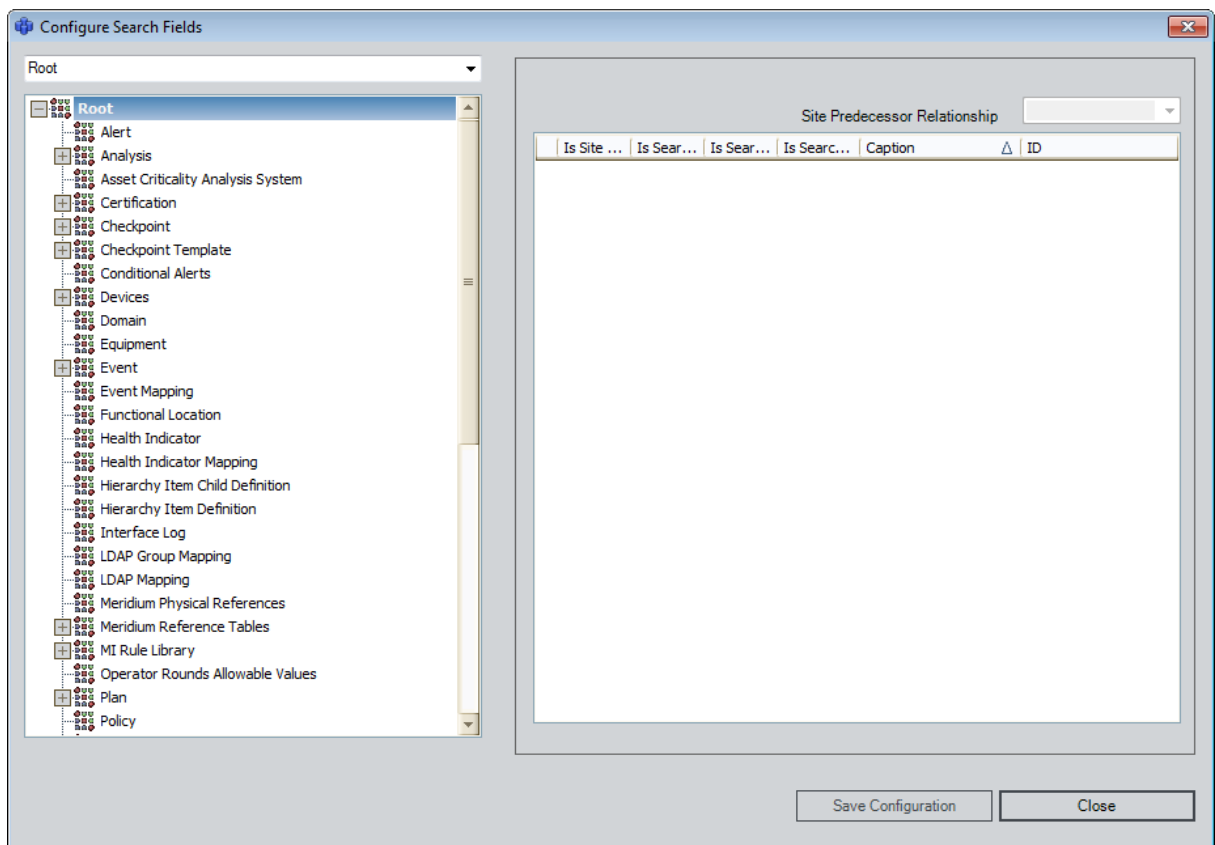

If you want the ID and description to reflect a value other than the Record ID, you can configure it using the full text search feature in the Configuration Manager.

To configure the appearance of search results:

1. In the Configuration Manager, on the **Tools** menu, point to **Manage Full Text Search**, and click **Configure Search Fields**.
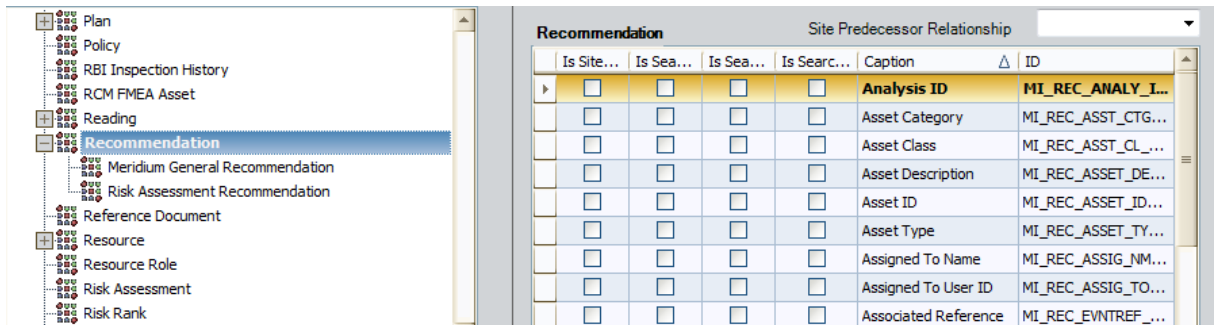
   The **Configure Search Fields** window appears.

2. In the tree, select the family whose search results you want to configure (e.g, *Recommendation*).

    The family's fields are listed to the right of the tree.

3. In the row representing the field whose values you want to use as the ID, select the **Is Search ID Field** check box.

4. In the row representing the field whose values you want to use as the description, select the **Is Search Description Field** check box.

5. Click the **Save Configuration** button.

    Your settings are saved.

About Installing the mobileAPM App on Mobile Devices

You must install the mobileAPM App on any mobile devices that your site plans to use. The method that you use for installing the mobileAPM App will differ depending upon the type of operating system that you use.

- If you are using the *iOS* operating system, you must sign the app using your Enterprise Developer Credentials. If you are not already a member of the iOS Developer Enterprise Program, you can apply to the program using the website https://developer.apple.com/programs/ios/enterprise/.

  -or-

- If you are using an *Android* or *Windows* operating system, you can install the mobileAPM App using your standard mobile device management tool. The .APK file is located on the Meridium APM Application Server in the folder **<root>\MobileAPM\distribution**, where <root> is the location in which the Meridium APM Application Server is installed (e.g., C:\Program Files\Meridium).

This help system assumes that you are familiar with installing Apps on your mobile devices, so specific instructions for installing the mobileAPM App are not provided.

About Translations for mobileAPM

After you install mobileAPM App, the text within the application (i.e., strings) will be displayed in the language corresponding to the value selected for the Culture setting for each user. This assumes you have completed all the necessary configuration steps for your Meridium APM Application Server.

Meridium, Inc. provides translations for mobileAPM for the following languages:

- Chinese (Simplified)
- Dutch
- French
- German
- Italian
- Portuguese (Brazilian)
- Russian
- Spanish