Meridium APM Lubrication Management

3.6.1.5.0

Meridium APM Lubrication Management

3.6.1.5.0

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](.).

Table of Contents

About the Lubrication Management Documentation

A complete Lubrication Management implementation involves performing the following tasks:

- Installing and configuring the product. This documentation assumes that all the necessary components have been installed and properly configured.
- Performing administrative tasks in the Data Configuration Manager . This documentation assumes that all necessary configuration steps have been completed in the Configuration Manager.
- Configuring and analyzing Lubrication Management records in the Meridium APM Framework application.

This documentation explains how to configure and analyze Lubrication Management records in the Meridium APM Framework application. This documentation does not, however, assume any specific audience. It simply explains what a user would need to know to configure Lubrication Management in the Meridium APM Framework application. We assume that you know which tasks you are responsible for and can find the documentation associated with those tasks using the Table of Contents or the Search feature of the Help system.

Overview of Lubrication Management

The *Meridium APM Lubrication Management* module lets you create Route records and link them to Lubrication Requirement records, which store information about the checkpoints at which someone will need to record reading values.

After the Route records and Lubrication Requirement records have been created, you can print the Lubrication Management Data Capture report and record reading values for each checkpoint along the Route. For example, if a Route record is linked to three Lubrication Requirement records, you would need to perform each check and use the report printout or the Meridium APM Framework application to record those reading values. You can also create Recommendation records based on your findings.

After the desired data has been recorded, you can use Meridium APM analytical tools to analyze the findings and recommendations, create Alert records, and so on.

Lubrication Management System Requirements

The *Lubrication Management* license is required to take advantage of Lubrication Management functionality. In addition, your system must contain the basic Meridium APM system architecture.

After you have installed and configured the basic system architecture, you will need to perform some configuration tasks specifically for the Lubrication Management feature.

About Routes and Lubrication Requirements

In most manufacturing facilities, some work is performed at regular intervals to ensure that equipment items function properly and that safety measures are maintained. For example, when a shift starts or ends, a series of safety checks must be made to ensure the rotating equipment will function properly. Most likely, one person will perform work at multiple checkpoints to maintain efficiency.

Using Meridium APM Lubrication Management, you can define a series of checkpoints as a single *Route*, where the Route represents the checkpoints that should logically be performed in succession by the same person. You can define as many Routes as you need to accommodate the varied maintenance schedules of the equipment and locations in your facility.

In Meridium APM, a Route is represented by a Route record that stores the description and status of the Route (i.e., active versus inactive). Route records are linked to Lubrication Requirement records, which define the individual checkpoints that should be performed along the Route.

A Lubrication Requirement record stores information such as the type of checkpoint, the lubricant and method of applying it that should be used at that checkpoint, and the frequency by which the checkpoint should be completed. A Lubrication Requirement record is linked to a Route record and an Equipment or Functional Location record.

To understand how a Route works, consider the following example. As part of your yearly maintenance routine at your house, you might inspect various door hinges that require lubrication. Because these lubrication checks make sense to perform in succession (i.e., they require the same tools) by the same person, they can be grouped into the same Route.

To track the work using Meridium APM Lubrication Management, you could create a Route record and link it to multiple Lubrication Requirement records that dictate the hinge checks that should be performed along that Route. At each checkpoint, you would enter a reading value.

In the following image, you can see a Hinge Maintenance Route for a home that contains four checkpoints, which means that the Route record is linked to four Lubrication Requirement records and an Equipment record (i.e., hinge). Two of the checkpoints are at different doors in the home and the other two are at a refrigerator door and a cabinet door. You can also see that the checkpoints are numbered according to the sequence in which they should be completed, which is based on the layout of the items that need to be checked.

Hinge Maintenance
Route
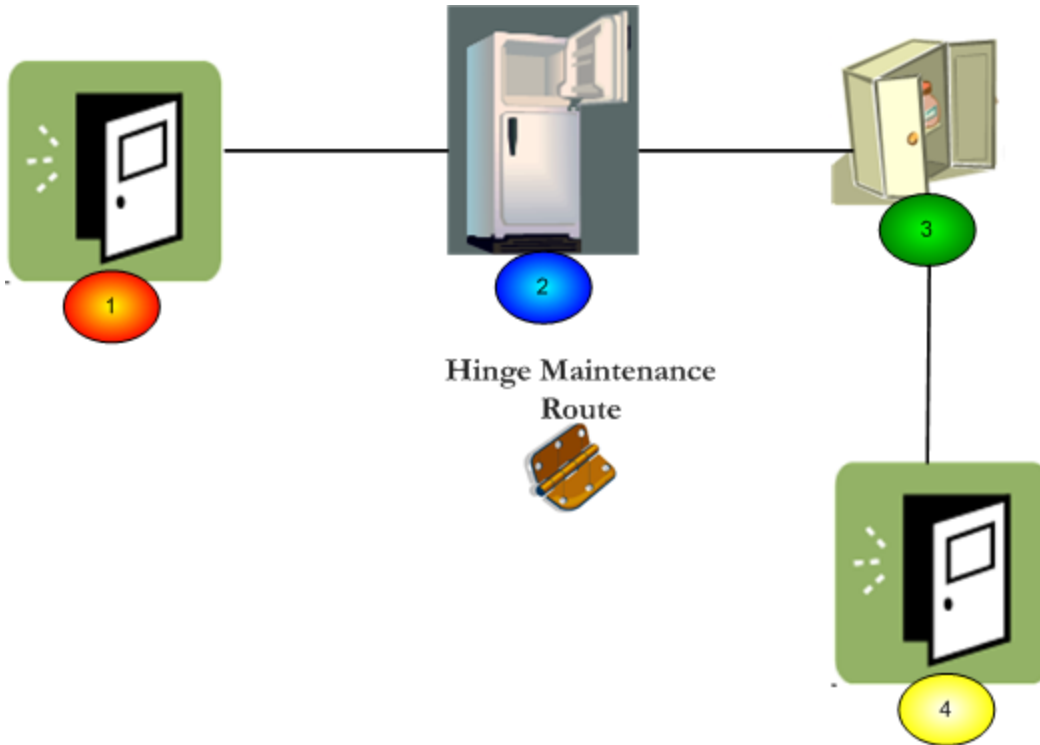
For each checkpoint along the Route, you would need record the action taken. For example, at Checkpoint 1, which is associated at an entry door, you might indicate that you applied the petroleum-based lubricant to the hinges. At Checkpoint 2, which is located at the refrigerator door, you might indicate that you applied the appropriate silicone spray lubricant, and so on.

After all checkpoints have been completed and an action has been recorded, the Route is considered *complete* until the checkpoints need to be completed again.

Lubrication Management Data Model

Before you begin using Lubrication Management in the Meridium APM Framework application, you must decide on the Equipment and Functional Location records for which you want to record readings. Via the Configuration Manager application, you must relate the Equipment or Functional Location family to the Lubrication Requirement family through the Has Checkpoint relationship. If you want to create Recommendation records based upon your findings, you will also need to relate the same family to the Lubrication Management Recommendation family through the Has Recommendations relationship. Refer to the following Lubrication Management data model for more information.
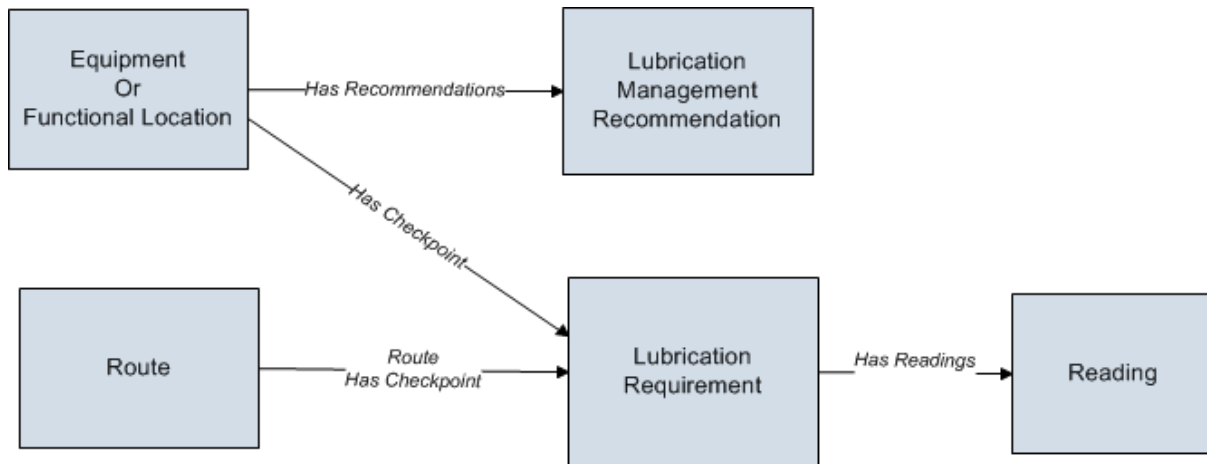
> Note: The Lubrication Requirement Template family and the Lubricant family are not included in this image because they are not related to any other families in the Lubrication Management data model.

The following relationship definitions are configured in the baseline database:

- The Route family is related to the Lubrication Requirement family through the Route Has Checkpoint relationship.
- The Lubrication Requirement family is related to the Reading family through the Has Readings relationship.

Accessing the Lubrication Management Start Page

The **Lubrication Management Start Page** provides access to the features associated with Lubrication Management. To access ALL the features associated with Lubrication Management, you must be a member of the Lubrication Management *Administrator* Security Group. Members of the Lubrication Management Security *User* Security Group will have view only privileges to Lubrication Management, meaning that if members of this Security Group try to modify content in Lubrication Management, a message will appear, indicating that the user has insufficient privileges to perform the task.

To access the Lubrication Management Start Page:

- On the Meridium APM Framework main menu, click **Go To**, point to **APM Foundation**, and then click **Lubrication Management**.

  The **Lubrication Management Start Page** appears.
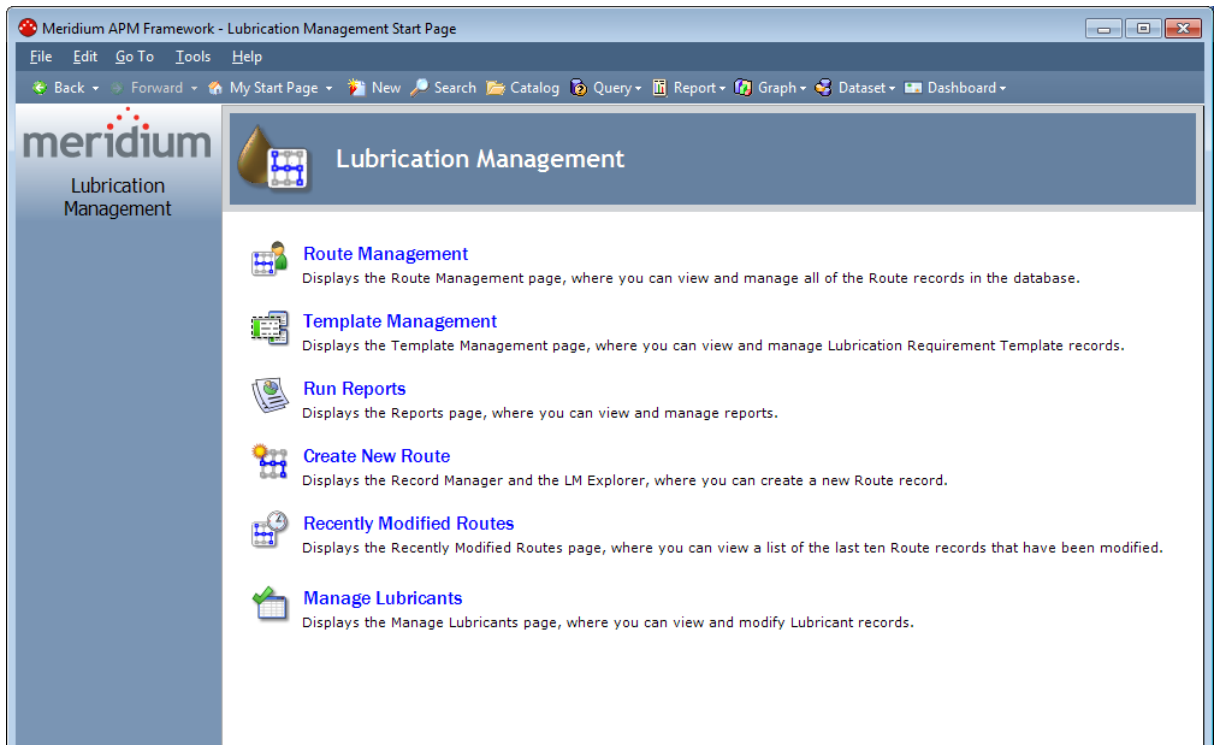
Aspects of the Lubrication Management Start Page

The **Lubrication Management Start Page** displays the following links, which let you access features in Lubrication Management:

- **Route Management:** Displays the <u>Lubrication Management Route Management page</u>, where you can view and manage all Route records in the database.
- **Template Management:** Displays the **<u>Lubrication Management Template Management</u> <u>page</u>**, where you can view and manage Lubrication Requirement Template records.
- **Run Reports:** Displays the <u>Lubrication Management Reports</u> page, where you can view and manage reports.
- **Create New Route:** Displays the Record Manager with the **<u>LM Explorer</u> pane**, where you can create a new Route record.
- **Recently Modified Routes:** Displays the **<u>Lubrication Management Recently Modified Routes</u> page**, where you can view a list of the last ten Route records that have been modified.
- **Manage Lubricants: Displays the <u>Lubrication Management Manage Lubricants</u> <u>page</u>, where you can view and modify Lubricant records.**

First-Time Deployment Workflow

Deploying and configuring Lubrication Management 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 Lubrication Management on top of the basic Meridium APM system architecture.

Whether a step is required or optional is indicated in the **Required/Optional** cell. Steps are marked as *Required* if you must perform the step to take advantage of Lubrication Management functionality.

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

Step	Task	Required/Optional	Notes
1	Configure the Has Checkpoint Relationship via the Configuration Manager application.	Required	None
2	Configure the Has Recommendations relationship via the Configuration Manager application.	Required	None
3	Via the Configuration Manager application, modify the following family code items so that Lubrication Requirement records can be linked to Equipment and Functional Location records: • Lubrication Requirement • Has Checkpoint • Lubrication Management Recommendation • Has Recommendations	Required	None

Step	Task	Required/Optional	Notes
4	[Manage Lubrication Management Template mappings if you added fields to the Lubrication Management Template family](#) via the Configuration Manager application.	Optional	This step is necessary only if you have added fields to the Lubrication Management Template family.

> **IMPORTANT:** In addition to these tasks, after you relate the Equipment and Functional Location families to the Lubrication Requirement family (using the Has Checkpoint relationship) and the Lubrication Management Recommendation family (using the Has Recommendations relationship), you should compile the database and reset IIS on the Meridium APM Application Server.

Upgrade or Update Lubrication Management to 3.6.1.5.0

The following tables list the steps that are required to update or upgrade Lubrication Management to 3.6.1.5.0. 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 V3.6.1.4.0

This module will be updated to 3.6.1.5.0 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 V3.6.0.12.7

Lubrication Management will be upgraded and configured for 3.6.1.5.0 automatically when you upgrade the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.5.1.0.0 through V3.5.1.12.1

Lubrication Management will be upgraded and configured for 3.6.1.5.0 automatically when you upgrade the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.5.0 SP1 LP through V3.5.0.1.10.0

Lubrication Management will be upgraded and configured for 3.6.1.5.0 automatically when you upgrade the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.5.0 through V3.5.0.0.7.1

Lubrication Management will be upgraded and configured for 3.6.1.5.0 automatically when you upgrade the components in the basic Meridium APM system architecture. No additional steps are required.

Upgrade from any version V3.4.5 through V3.4.5.0.1.4

Lubrication Management will be upgraded and configured for 3.6.1.5.0 automatically when you upgrade the components in the basic Meridium APM system architecture. No additional steps are required.

Lubrication Management Security

The following Security Groups are provided as part of the baseline Lubrication Management product:

- MI Lubrication Management Administrator
- MI Lubrication Management User

These groups support the users who will configure Lubrication Management in the Meridium APM Framework application. All of these groups have privileges assigned to them by default. The baseline privileges are summarized in the following table.

Family	MI Lubrication Management Administrator	MI Lubrication Management User
Lubrication Requirement	View, Update, Insert, Delete	View
Lubrication Requirement Template	View, Update, Insert, Delete	View
Reading	View, Update, Insert, Delete	View, Update, Insert, Delete
Route	View, Update, Insert, Delete	View
Lubrication Management Recommendation	View, Update, Insert, Delete	View, Update, Insert, Delete
Lubricant	View, Update, Insert, Delete	View
Reference Document	View, Update, Insert, Delete	View
Has Checkpoint	View, Update, Insert, Delete	View
Has Readings	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Recommendations	View, Update, Insert, Delete	View, Update, Insert, Delete
Has Reference Documents	View, Update, Insert, Delete	View
Route Has Checkpoint	View, Update, Insert, Delete	View

Based on the default security privileges, users who should be able to configure Lubrication Management in the Meridium APM Framework application should be assigned to the MI Lubrication Management Administrator Security Group.

Users who should be able to access Lubrication Management to view Lubrication Management data after it has been created should be assigned to the Lubrication Management Security User group.

Configuring the Has Checkpoint Relationship

The Has Checkpoint relationship is used to link Lubrication Requirement records to Equipment or Functional Location records. Because no relationship definitions are provided for this family, however, you will need to configure the following definition for the families that you want to use with Lubrication Management:

- **Predecessor:** Equipment or Functional Location family
- **Predecessor Cardinality:** Zero or One
- **Successor:** Lubrication Requirement
- **Successor Cardinality:** Zero or Many

Configuring the Has Recommendations Relationship

The Has Recommendations relationship is used to link Lubrication Management Recommendation records to Equipment or Functional Location records. Because no relationship definitions are provided for this purpose, however, you will need to configure the following definition for each Equipment or Functional Location family that you want to use with Lubrication Management:

- **Predecessor:** Equipment or Functional Location family
- **Predecessor Cardinality:** Zero or One
- **Successor:** Lubrication Management Recommendation
- **Successor Cardinality:** Zero or Many

Why Do I Need to Modify Family Code Items?

Out-of-the-box, a Lubrication Requirement record will not be linked automatically to an Equipment or Functional Location record after you save the Lubrication Requirement record. Likewise, a Lubrication Management Recommendation record will not be linked automatically to an Equipment or Functional Location record after a Lubrication Requirement Recommendation record is saved.

If, however, you modify the family code item for the following families, Lubrication Requirement and Lubrication Management Recommendation records that contain a valid Asset ID in their Asset ID fields will be linked to the associated record when you save a record in that family.

- Lubrication Requirement
- Has Checkpoint
- Lubrication Management Recommendation
- Has Recommendations

In addition, if you modify the Lubrication Requirement family code item, after you specify a valid Asset ID in the **Asset ID** cell of a Lubrication Requirement record and save the record, the **Asset Description** cell of that Lubrication Requirement record will be populated automatically.

Modifying the Lubrication Requirement Family Code Item

To modify the Lubrication Requirement family code item:

1. On the Configuration Manager main window, on the **Entity Family** tab, select the **Lubrication Requirement** family.

2. In the **Tasks** section, click the **Manage Family Business Rules** link.

   The project appears in the **Meridium APM Rules Editor** (VSTA).

3. In the **Project Explorer** pane, expand **MI_LUBR_REQ**, double-click the **MI_LUBR_REQ** code item.

   The content of the code item appears in the main display area.

4. Within the **MI_LUBR_REQ** class, locate the text **MyBase.New(record)**.

```
<MetadataFamily()> _
Public Class MI_LUBR_REQ
    Inherits Baseline.MI_LUBR_REQ.MI_LUBR_REQ

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)

    End Sub
End Class
```

5. Place your cursor after the text **(record)**, and press ENTER.

6. Type the following:

   ```
   MyBase._Asset_FamilyID = "[Family ID]"

   MyBase._AssetID_FieldID = "[Asset ID Field ID]"

   MyBase._AssetDesc_FieldID = "[Asset Description Field ID]"
   ```

   ...where:

   - **[Family ID]** is the ID of the Equipment or Functional Location family to which you related the Lubrication Requirement family through the Has Checkpoint relationship.

   - **[Asset ID Field ID]** is the ID of the Asset ID field in the family that you specified with the **[Family ID]** value. For a link to be created between the Equipment or Functional Location record and a Lubrication Requirement record, when users create a Lubrication Requirement record, they must type in the Asset ID field a value that is stored in the field that you specify with the **[Asset ID Field ID]** value.

- **[Asset Description Field ID]** is the ID of the Asset Description field in the family that you specified with the **[Family ID]** value. If you specify the Asset ID field ID, after a user saves a Lubrication Requirement record that contains a valid Asset ID, the Asset Description field of that Lubrication Requirement record will be populated automatically with the value stored in the field that you specify with the **[Asset Description Field ID]** value.

For example, if the following is true:

- The Equipment family is related to the Lubrication Requirement family through the Has Checkpoint relationship.
- You want users to type in the **Asset ID** cell on the Lubrication Requirement datasheet the value stored in the Asset ID field of an Equipment record.
- The ID of the Asset ID field in the Equipment family is ASSET_ID_CHR.
- You want the **Asset Description** cell on the Lubrication Requirement datasheet to be populated with the value stored in the Asset Description field of the Equipment record.
- The ID of the Asset Description field in the Equipment family is ASSET_DESC_CHR.

...the code would look like this:

```
<MetadataFamily()> _
Public Class MI_LUBR_REQ
    Inherits Baseline.MI_LUBR_REQ.MI_LUBR_REQ

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)
        MyBase._Asset_FamilyID = "Asset"
        MyBase._AssetID_FieldID = "ASSET_ID_CHR"
        MyBase._AssetDesc_FieldID = "ASSET_DESC_CHR"
    End Sub
End Class
```

Modifying the Has Checkpoint Family Code Item

You can modify the Has Checkpoint family rules so that the Scan ID field in Measurement Location and Lubrication Requirement records will be populated automatically from fields in Equipment or Functional Location records. For example, if your scan IDs (i.e., barcode IDs or RFID tags) match the value in the Equipment Technical Number field in your Equipment records, you might want to modify the Has Checkpoint family rules to specify that the Equipment Technical Number be populated automatically in the linked Measurement Location record's Scan ID field.

To modify the Has Checkpoint family code item:

1. On the Configuration Manager main window, on the **Relationship Family** tab, select the **Has Checkpoint** family.

2. In the **Tasks** section, click the **Manage Family Business Rules** link.

    The project appears in the **Meridium APM Rules Editor** (VSTA).

3. In the **Project Explorer** pane, double-click the **MIR_HS_MEASLOC** code item.

    The code associated with the code item appears in the main display area on the **Meridium APM Rules Editor** window.

4. Within the **MIR_HS_MEASLOC** class, locate the text **MyBase.New(record)**.

```
<MetadataFamily()>
Public Class MIR_HS_MEASLOC
    Inherits Baseline.MIR HS MEASLOC.MIR HS MEASLOC

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)
    End Sub
End Class
```

5. Place your cursor after the text **(record)**, and press Enter.

6. Type the following code:

```
If CurrentRelationship.Predecessor.Family.ID = "[Family ID]" Then
    MyBase._AssetBarcdID_FieldID = "[Scan ID]"
End If
```

    ...where:

- **[Family ID]** is the ID of the Equipment or Functional Location family.
- **[Scan ID]** is the ID of the Equipment or Functional Location family field that you want to use to map to the barcodes or RFID tag field.

    > **Note:** You must type the IDs using capital letters.

For example, the following code excerpt shows a rule in the Has Checkpoint family code item that has been modified such that the Scan ID field in the Equipment family will be populated automatically with the value in the Equipment Technical Number field in the related Equipment record.

```
<MetadataFamily()> _
Public Class MIR_HS_MEASLOC
    Inherits Baseline.MIR_HS_MEASLOC.MIR_HS_MEASLOC

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)
        If CurrentRelationship.Predecessor.Family.ID = "MI_EQUIP000" Then
            MyBase._AssetBarcdID_FieldID = "MI_EQUIP000_EQUIP_TECH_NBR_C"
        End If
    End Sub
End Class
```

# Modifying the Lubrication Management Recommendation Family Code Item

To modify the Lubrication Management Recommendation family code item:

1. On the Configuration Manager main window, on the **Entity Family** tab, select the **Lubrication Management Recommendation** family.

2. In the **Tasks** section, click the **Manage Family Business Rules** link.

   The projects appears in the **Meridium APM Rules Editor** (VSTA).

3. In the **Project Explorer**pane, expand **MI_LM_REC**, and double-click the **MI_LM_REC** code item.
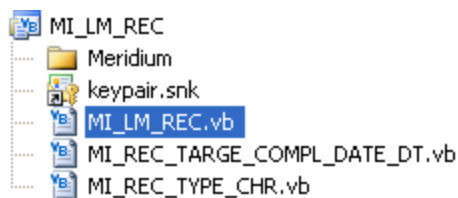
4. Within the **MI_LM_REC** class, locate the text **MyBase.New(record)**.

5. Place your cursor after the text **(record)**, and press ENTER.

6. Type the following:

   MyBase._Asset_FamilyID = "[Family ID]"

   MyBase._AssetID_FieldID = "[Field ID]"

   ...where:

   - **[Family ID]** is the ID of the Equipment or Functional Location family to which you related the Lubrication Management Recommendation family through the Has Recommendations relationship.
   - **[Field ID]** is the ID of the Equipment or Functional Location family field that you want to use to map to the Lubrication Management Recommendation family. This means that for a link to be created between the Equipment or Functional Location record and the Lubrication Management Recommendation record, the value

stored in this field must exist in the **Asset ID** cell on the Lubrication Management Recommendation datasheet when the Recommendation record is created.

> **Note:** You must specify the family ID and field ID you specified when you [modified the Lubrication Requirement family code item](#).

For example, if you want a link to be created between an Equipment record and an Lubrication Management Recommendation record when the value in the **Asset ID** cell on the Lubrication Management Recommendation datasheet is the same as the value in the **Asset ID** cell of an Equipment record, the code would look like this:

```
<MetadataFamily()> _
Public Class MI_LM_REC
    Inherits Baseline.MI_LM_REC.MI_LM_REC

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)
        MyBase._Asset_FamilyID = "Asset"
        MyBase._Asset_FieldID = "Asset"
    End Sub
End Class
```

Modifying the Has Recommendation Family Code Item

To modify the Has Recommendations family code item:

1. On the Configuration Manager main window, on the **Relationship Family** tab, select the **Has Recommendations** family.

2. In the **Tasks** section, click the **Manage Family Business Rules** link.

   The project appears in the **Meridium APM Rules Editor** (VSTA).

3. In the **Project Explorer** pane, double-click the **MI_Has_Recommendations** code item.

   The associated code appears in the main display area of the **Meridium APM Rules Editor**.

4. Within the **MI_Has_Recommendations** class, locate the text **MyBase.New(record)**.

```
<MetadataFamily()>  _
  Public Class MI_Has_Recommendations
        Inherits Baseline.MI_Has_Recommendations.MI_Has_Recommendations

        Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
            MyBase.New(record)
        End Sub
  End Class
```

5. Place your cursor after the text **(record)**, and press ENTER.

6. Type the following:

   MyBase._AssetID_FieldID = "[Field ID]"

   ...where:

- **[Field ID]** is the ID of the Equipment family field that you want to use to map to the Lubrication Management Recommendation family. This means that for a link to be created between the Equipment record and an Lubrication Management Recommendation record, the value stored in this field is the value that must exist in the **Asset ID** cell on the Lubrication Management Recommendation datasheet when the Lubrication Management Recommendation record is created.

  > **Note:** Make sure this is the same field ID you specified when you modified the Lubrication Requirement family code item.

  For example, if you want a link to be created between an Equipment record and an Lubrication Management Recommendation record when the value in the **Asset ID** cell on the Lubrication Management Recommendation datasheet is the same as

the value in the **Asset ID** cell of an Equipment record, the code would look like this:

```
<MetadataFamily()>  _
Public Class MI_Has_Recommendations
    Inherits Baseline.MI_Has_Recommendations.MI_Has_Recommendations

    Public Sub New(ByVal record As Meridium.Core.DataManager.DataRecord)
        MyBase.New(record)
        MyBase._AssetID_FieldID = "ASSET_ID_CHR"
    End Sub
End Class
```

Managing Lubrication Requirement Template Mappings

The Lubrication Requirement Template family and the Lubrication Requirement family are provided as part of the baseline Lubrication Management product. If you create a Lubrication Requirement Template record in the Meridium APM Framework application, you can then create a Lubrication Requirement record based on that template. If you do so, all values in Lubrication Requirement Template fields that also exist on the Lubrication Requirement datasheet will be mapped automatically to the new Lubrication Requirement record.

You might find that the Lubrication Requirement Template and Lubrication Requirement datasheets do not contain all fields that your Lubrication Management users need. If so, and you want to add fields so the values from the new Lubrication Requirement Template fields will be mapped to Lubrication Requirement records based on that template, you will need to:

- Create a new Lubrication Requirement Template field.
- Add the new Lubrication Requirement Template field to the Lubrication Requirement Template datasheet.
- Create a new Lubrication Requirement field. Note that we recommend that the field caption of this field be the same as the field caption you defined for the Lubrication Requirement Template field. This will ensure that the text in the field IDs that identifies the fields are the same. *If they are not the same, the values will not be mapped from the Lubrication Requirement Template to the Lubrication Requirement record.*
- Add the new Lubrication Requirement field to the Lubrication Requirement datasheet.
- [Modify the physical tables for both families](#).

About the LM Explorer

The LM Explorer is the configured explorer that you will use to work with Lubrication Management records in the Record Manager. It displays the following records, where the Route record is displayed at the root level:

- Route
- Lubrication Requirement
- Reading
- Reference Document
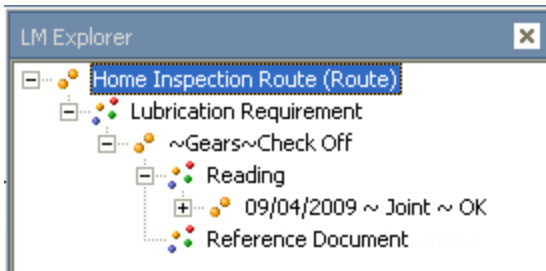
The **LM Explorer** pane will appear in the Record Manager in place of the standard **Record Explorer** pane when you create Route records using the **Create New Route** link on the **Lubrication Management Start Page**.

You can right-click any family node in the record hierarchy and create a record for that family. After you have created and saved a record for a given family, any related families that are configured to appear in the **LM Explorer** pane will be displayed below that family. For example, after you create a Route record and save it, the Lubrication Requirement family node will appear in the record hierarchy.

> **Note:** To create a Reading record, you should use the **Create Reading** link on the **Associated Pages** menu instead of the shortcut menu in the **LM Explorer** pane.

Lubrication Management Associated Pages

The following Associated Page is configured by default for the Lubrication Requirement family:

- **Create Reading:** Displays the **(new Reading)** window, where you can create a Reading record linked to the Measurement Location record.

Note: To see the underlying URL for this Associated Page, you can use the URL Manager application.
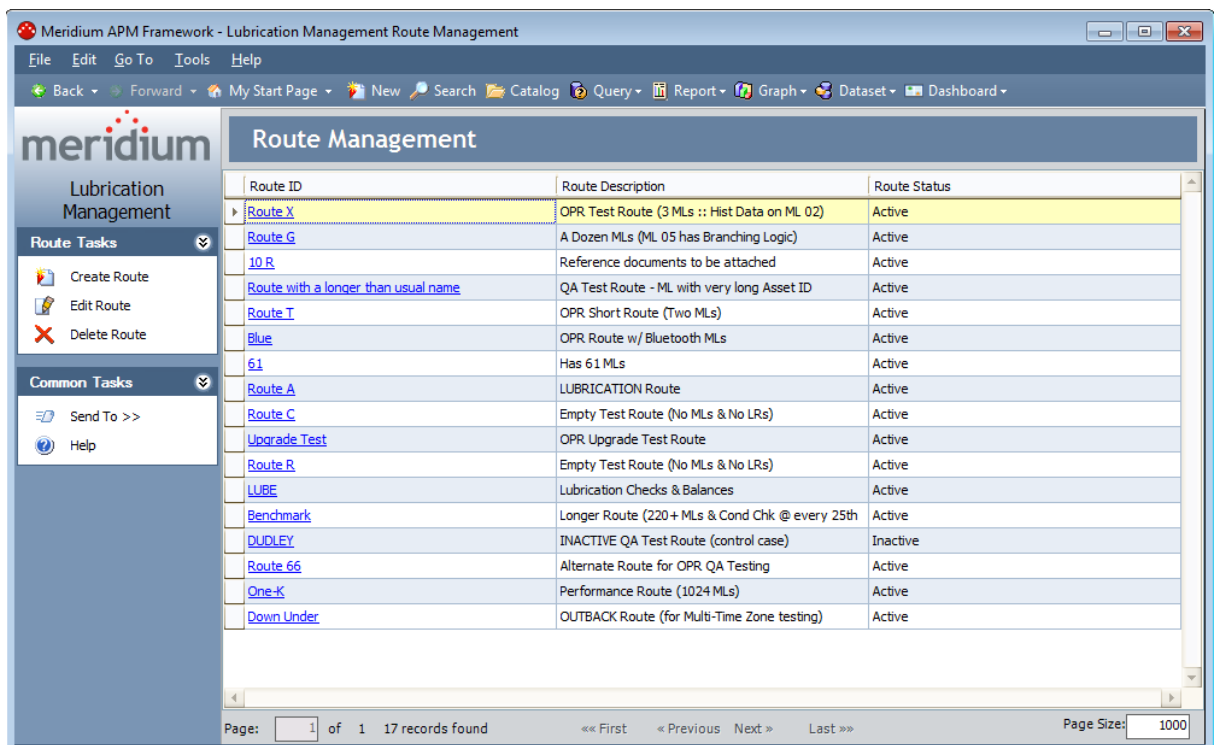
Accessing the Lubrication Management Route Management Page

Meridium APM provides the Route Management query, which is run when you access the **Lubrication Management Route Management** page. On this page, you can view a list of all Route records that exist in the database. You can use this page to view the existing Route records or create new Route records.

To access the Lubrication Management Route Management Page:

- On the **Lubrication Management Start Page**, click the **Route Management** link.

  The <u>Lubrication Management Route Management page</u> appears, displaying all existing Route records.

Aspects of the Lubrication Management Route Management Page

The **Lubrication Management Route Management** page displays the following items:

- **Task Menus:** Menus that provide specific functionality. The following task menus are available: **Route Tasks** and **Common Tasks**.
- **Route Management workspace:** The area that provides a list of Route records.

The **Route Management** workspace displays the results of the Route Management query, which returns all Route records that exist in the database. Each row on this page represents one Route record. The columns display the following information for each Route record:

- **Route ID:** The name of the Route. The Route ID appears as a hyperlink, which you can click to open the Route record in the Record Manager.
- **Route Description:** The description of the Route.
- **Route Status:** The status of a Route: Active or Inactive.

Route ID	Route Description	Route Status
Route X	Route X	Active
Route G	Route G	Active

At the bottom of the page, various options (e.g., **First** and **Previous** links) are available to allow you to navigate the results. These options function just like they do in the query results.

Using the **Lubrication Management Route Management** page, you can create a new Route record or modify an existing Route record, if desired.
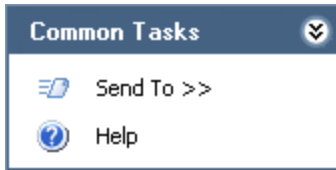
Route Tasks Menu
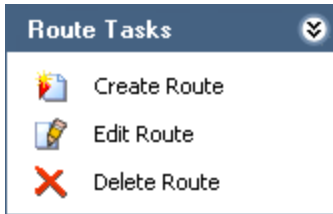
The **Route Tasks** menu on the **Lubrication Management Route Management** page contains the following links:

- **Create Route:** Displays a new Route record in the Record Manager.
- **Edit Route:** Displays the selected Route record in the Record Manager, where you can modify the record and then save your changes.
- **Delete Route:** After asking for confirmation, deletes the selected Route record from the database. Note that you can delete only one Route record at a time using this link. If you select multiple rows, the row with the right arrow indicator represents the Route record that will be deleted.

Common Tasks Menu

The **Common Tasks** menu on the **Lubrication Management Route Management** page contains the following links:

- **Send To:** Displays a submenu with options that let you send a link to the current page to your desktop (create shortcut), in an email message, or a Home Page.This link is disabled if there are no existing Route records.

- **Help:** Displays the context-sensitive Help topic for the **Lubrication Management Route Management** page.

About Creating Route Records

Before you can create [Lubrication Requirement](#) records that are linked to a Route record, you must create the Route record. Route records help you organize and group Lubrication Requirement records for a given piece of equipment or location. How you group Lubrication Requirement records depends on the needs of your company.

Some equipment may require multiple lubricant types, and some equipment will require the same lubricant. In this way, you would create a Route based on the requirements of the equipment.

For example, a house contains door hinges, which exist in various locations in the house and require multiple types of lubricants, depending on the hinge. A house also contains a furnace motor, which has only one location and requires only one type of lubricant. Hinges may require a silicone spray lubricant or a grease, while a furnace motor will require only a grease. This means that you could create a Route record and link it to Lubrication Requirement records based on:

- Multiple pieces of equipment that require the same lubricant (e.g., grease for a furnace motor and hinges that require grease).
- Multiple pieces of equipment that exists in one location and require different lubricants (e.g., silicone spray and grease for various hinges in the kitchen).
- One type of equipment that exists in multiple locations and requires the same lubricant (e.g., silicone spray for door hinges).
- One piece of equipment that exists in one location and requires one or more lubricants (e.g., grease for multiple components on the furnace motor).

Again, how you configure Route records will vary depending on the needs of your company. The instructions in this documentation provide details on creating a Route record from the **Lubrication Management Start Page**.

Note that this is not the only method that you can use, however. For example, you can also create a Route record by:

- Clicking the **Create Route** link on the [Route Tasks](#) menu on the **Lubrication Management Route Management** page.
- Clicking the **New** button on the Meridium APM Framework toolbar. Note that if you use this option, you will see the **Record Explorer** pane instead of the **LM Explorer** pane.

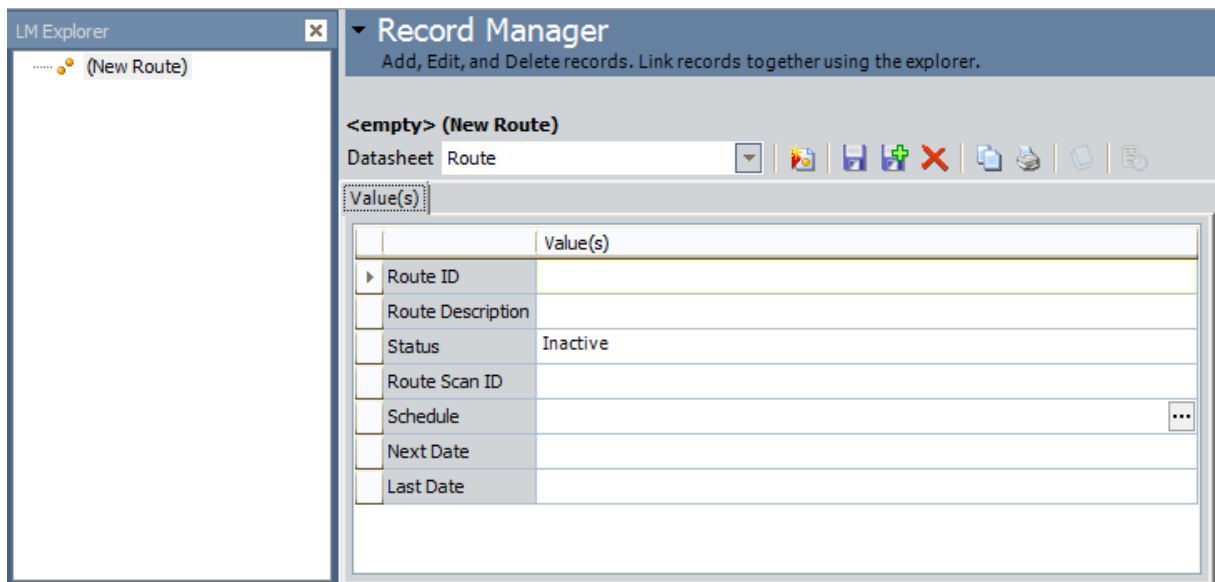# Creating a Route Record from the Lubrication Management Start Page

Before you can create Lubrication Requirement records and link them to a Route record, you must create the Route record.

> **Note:** Only members of the Lubrication Management Administrator Security Group can access the feature described in these instructions. If you are not a member of the Lubrication Management Security Group and you click the **Create New Route** link, an error message will appear, indicating that you have insufficient security privileges.

To create a Route record from the Lubrication Management Start Page:

1. On the **Lubrication Management Start Page**, click the **Create New Route** link.

   The new Route record appears in the Record Manager.

> **Note:** Only members of the Lubrication Management Administrator Security Group can access this feature. If you are not a member of the Lubrication Management Administrator Security Group and you click this link, an error message will appear, indicating that you have insufficient security privileges.

3. In the **Route ID** cell, type a unique ID for the Route.

4. In the **Route Description** cell, type a description of the Route.

5. In the **Status** list, select **Active** or **Inactive**. Note that **Active** is selected by default.

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

   The Route record is saved.

Note: The fields *Schedule*, *Next Date*, and *Last Date* in the Route record are not used in the Lubrication Management module.

Modifying an Existing Route Record

After a Route record has been created and saved, you can access the Route record and modify its content at any time. After a Route record has been modified, you can view that Route record on the **Lubrication Management Recently Modified Routes** page.

> **Note:** Modifying the contents of a Route record will not affect the Lubrication Requirement records that are linked to that Route record.

To modify an existing Route record:

1. On the **Lubrication Management Start Page**, click the **Route Management** link.

   The **Lubrication Management Route Management** page appears, displaying all the Route records that exist in the database.

2. Select the row containing the Route record that you want to modify, and on the **Route Tasks** menu, click the **Edit Route** link.

   The Route record appears in the Record Manager.

3. Modify the Route record as desired.

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

   Your changes are saved to the database, and the Route record can now be viewed on the [Lubrication Requirement Recently Modified Routes page](#).
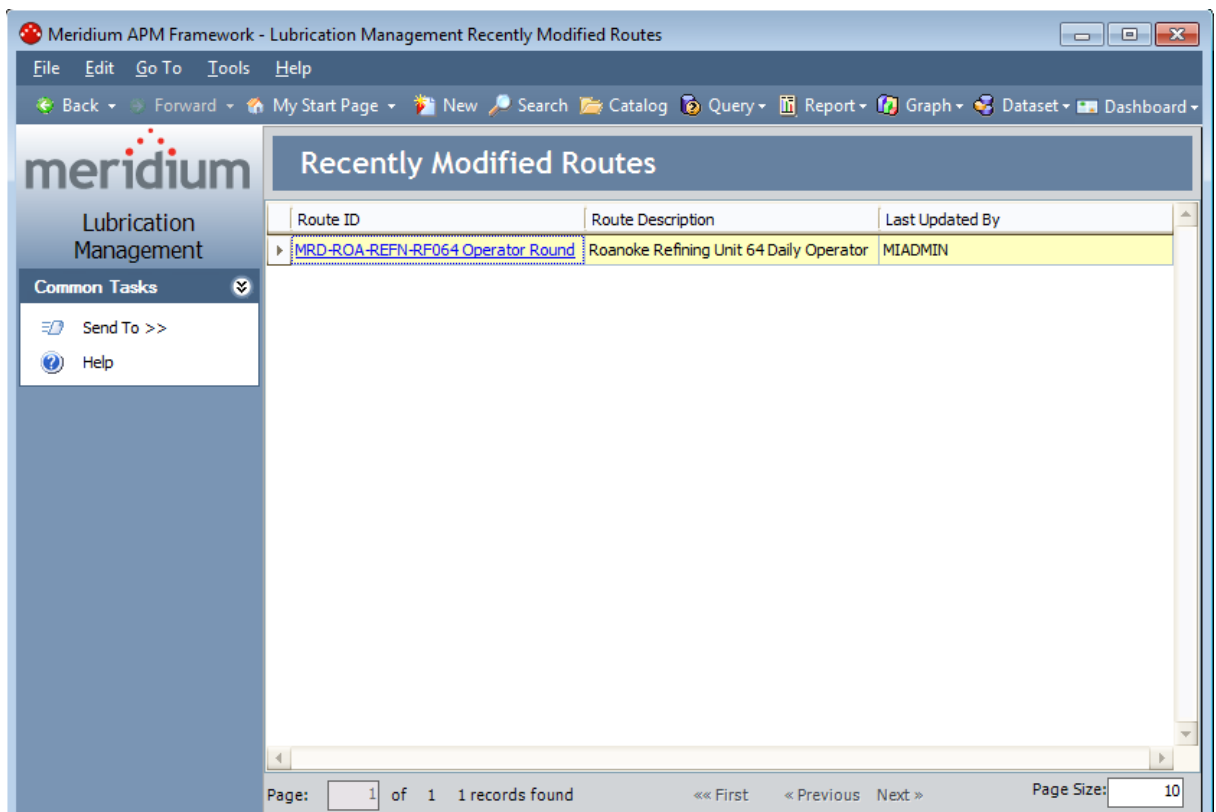
Accessing the List of Recently Modified Route Records

On the **Lubrication Management Recently Modified Routes** page, you can view a list of the last ten Route records that have been modified and the Security User who last modified the Route record.

To access the Lubrication Management Recently Modified Routes page:

- On the**Lubrication Requirement Start Page**, click the**Recently Modified Routes**link.

  The **Lubrication Management Recently Modified Routes** page appears, displaying the last ten Route records that were modified.

Aspects of the Lubrication Management Recently Modified Routes Page

The **Lubrication Management Recently Modified Routes** page contains the following items:

- **Common Tasks menu:** Provides access to common functionality.
- **Recently Modified Routes workspace:** Displays a list of Route records that were recently modified.

The **Recently Modified Routes** workspace displays the last ten Route records that have been modified. Each row in the results represents one Route record, and the columns contain the following information:

- **Route ID:** The name of the Route. The ID appears as a hyperlink, which you can click to open the Route record in the Record Manager.
- **Description:** The description of the Route.
- **Last Updated By:** The name of the Security User who last updated the Route record.

> **Note:** The maximum number of records that can be displayed on the **Lubrication Management Recently Modified Routes** page is 10. If you change the page size to a number *greater than* 10, only up to 10 records will be displayed.

Using the **Lubrication Management Recently Modified Routes** page, you can access an existing Route record and modify it.

Common Tasks Menu
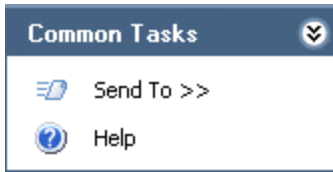
The **Common Tasks** menu on the **Lubrication Management Recently Modified Routes** page contains the following links:

- **Send To:** Displays a submenu with options that let you send a link to the current page to your desktop (create shortcut), in an email message, or a Home Page. This link is disabled if no Route records are displayed.
- **Help:** Displays the context-sensitive Help topic for the **Lubrication Management Recently Modified Routes** page.

About Configuring Lubricants that are Associated with a Checkpoint

Lubricant records serve as a means for organizing all the lubricants that are used by your company. A Lubricant record stores the following information about a lubricant:

- **Lubricant Manufacturer:** The company that manufactures the lubricant (i.e., the brand).
- **Lubricant:** The type of lubricant (e.g., silicone).
- **Method:** The method that is used to apply the lubricant (e.g., spray).

When you create a Lubricant record, the values that you enter in these fields will be used to populate the corresponding lists on the Lubrication Requirement datasheet, where you can select the desired values from a list.

Accessing the Lubrication Management Manage Lubricants Page

On the **Lubrication Management Manage Lubricants** page, you can view and modify Lubricant records.

To access the Lubrication Management Manage Lubricants page:

- On the **Lubrication Management Start Page**, click the **Manage Lubricants** link.

  The **Lubrication Management Manage Lubricants** page appears, displaying all existing Lubricant records in the Bulk Data Form.
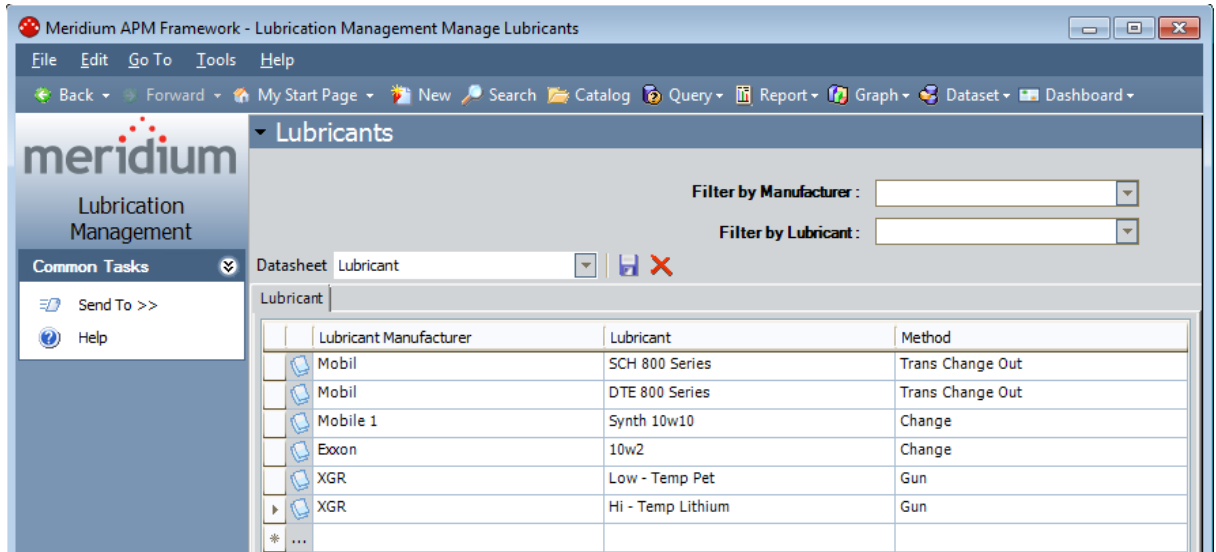
Aspects of the Lubrication Management Manage Lubricants Page

The **Lubrication Management Manage Lubricants** page displays all existing Lubricant records. From this page, you can modify, create, or delete Lubricant records.

The **Lubrication Management Manage Lubricants** page contains the following items:

- **Common Tasks menu:** Provides access to common functionality.
- **Lubricants workspace:** Displays all Lubricant records that exist in the database.

The **Lubricants** workspace contains two filtering lists:

- **Filter by Manufacturer:** Displays a list of all values in the Lubricant Manufacturer field in existing Lubricant records.
- **Filter by Lubricant:** Displays a list of all values in the Lubricant field in existing Lubricant records whose Lubricant Manufacturer value corresponds with your selection in the **Filter by Manufacturer** list. This list is enabled only when a value is selected in the **Filter by Manufacturer** list.

You may find it useful to filter the list to display only the Lubricant records with a specific Manufacturer or a combination of Manufacturer and Lubricant.

Each row in the **Lubricants** workspace represents one Lubricant record and displays the value in the Lubricant Manufacturer, Lubricant, and Method fields in that record.

Using the **Lubrication Management Manage Lubricants** page, you can create new Lubricant records, modify existing Lubricant record, or delete Lubricant records.
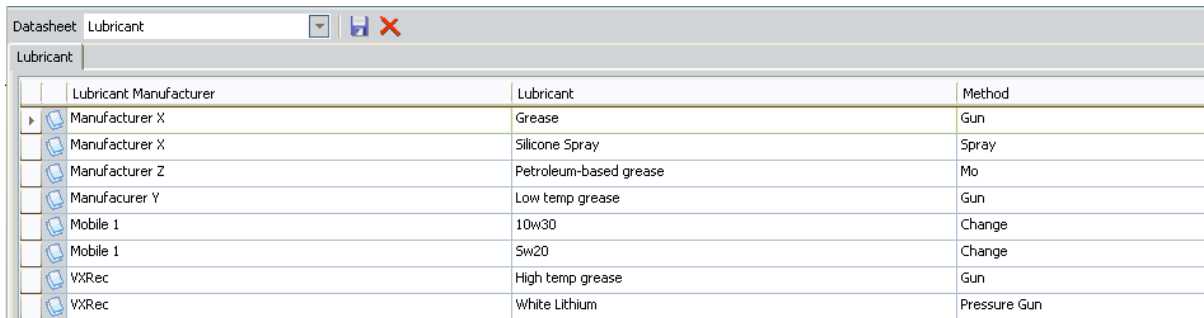
Common Tasks Menu
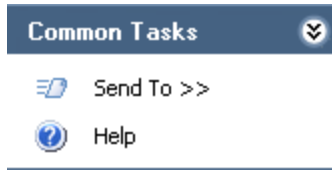
The **Common Tasks** menu on the **Lubrication Management Manage Lubricants** page contains the following links:

- **Send To:** Displays a submenu with options that let you send a link to the current page to your desktop (create shortcut), in an email message, or a Home Page.

- **Help:** Displays the context-sensitive Help topic for the **Lubrication Management Manage Lubricants** page.

Lubricants and the Lubrication Requirement Datasheet: An Example

To fully understand how Lubricant records work in Lubrication Management, you must understand how the values that you type in a Lubricant record correspond to fields on the Lubrication Requirement datasheet. The connection is best understood through an example.

Suppose your database contains Lubricant records that are configured as shown in the following image, which displays the records in the Bulk Data Form:

Datasheet	Lubricant		
Lubricant Manufacturer	Lubricant	Method
Manufacturer X	Grease	Gun
Manufacturer X	Silicone Spray	Spray
Manufacturer Z	Petroleum-based grease	Mo
Manufacurer Y	Low temp grease	Gun
Mobile 1	10w30	Change
Mobile 1	5w20	Change
VXRec	High temp grease	Gun
VXRec	White Lithium	Pressure Gun

You can see that for Manufacturer X, the lubricants are Grease and Silicone Spray, and the Methods are Gun and Spray.

If you create a Lubrication Requirement record and select *Gun* in the **Method** list and *Manufacturer X* in the **Lubricant Manufacturer** list, you can select *Grease* or *Silicone spray* from the **Lubricant** list.

	Value(s)
Datasheet	Lubrication Requirement
Identification	
Template	
Asset ID	
Asset Description	
Description	
LR Type	Check Off
Unit of Measure	
Method	Gun
Lubricant Manufacturer	Manufacturer X
Lubricant	
Status	Grease
Schedule	Silicone Spray
Last Date	
Next Date	
Sequence	
Component	
Number of Points	
Capacity	

Filtering Lubricant Records

On the **Lubrication Management Manage Lubricants** page, you can filter the list for easier access to the desired records. You can filter the values in the Lubricant Manufacturer field or a combination of the Lubricant Manufacturer and Lubricant fields.

To filter the list on the Lubrication Management Manage Lubricants page:

1. In the **Lubricants** workspace, in the **Filter by Manufacturer** list, select a manufacturer on which you want to filter the Lubricant records. This list contains all unique values in the Lubricant Manufacturer field in existing Lubricant records.

   The Lubricant records are filtered based upon your selection. For example, consider the following Lubricant records.

Continuing with the example, if you selected *Chevron* in the **Filter by Manufacturer** list, the Lubricant records would be filtered according to your selection, as shown in the following image.
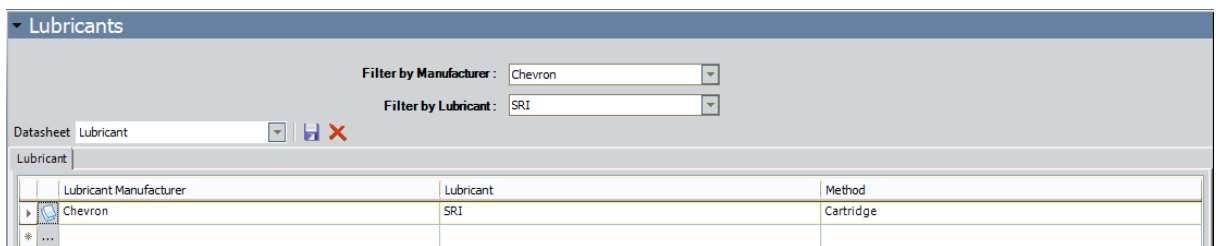
2. If you want to filter the records further (by lubricant), in the **Lubricants** workspace, in the **Filter by Lubricant** list, select a lubricant on which you want to filter Lubricant records. This list contains all unique values in the Lubricant field in Lubricant records that correspond with your selection in the **Filter by Manufacturer** list.

   The Lubricant records are filtered based upon your selection.

   Continuing with the example, if you selected *SRI* in the *Filter by Lubricant* list, the Lubricant records would be filtered according to your selection, as shown in the following image.

About Creating Lubricant Records

You can create Lubricant records in two ways:

- [Create the first Lubricant record](#).
- [Create subsequent Lubricant records](#).

Creating the First Lubricant Record

To create the first Lubricant record:

1. On the **Lubrication Management Start Page**, click the **Manage Lubricants** link.

   The **Lubrication Management Manage Lubricants** page appears.

2. In the **Lubricants** workspace, in the first empty row at the bottom of the grid, in the **Lubricant Manufacturer** list, type the name of the manufacturer.

3. In the same row, in the **Lubricant** cell, type the lubricant that is associated with the manufacturer (e.g., grease).

4. In the same row, in the **Method** cell, type the method that should be used with this lubricant. This information will indicate to the person who is responsible for completing the associated checkpoint how to apply the lubricant.

5. Click the **Save** button.

   The Lubricant record is saved.

Creating Subsequent Lubricant Records

The following instructions explain how to use the **Lubrication Management Manage Lubricants** page to create subsequent Lubricant records with a specific manufacturer. You can also use these instructions to modify values in an existing Lubricant record.

To create subsequent allowable values for a specific manufacturer:

1. On the **Lubrication Management Start Page**, click the **Manage Lubricants** link.

   The **Lubrication Management Manage Lubricants** page appears, displaying all existing Lubricant records in Bulk Data Form.

   > ŒHint: If desired, you can filter these records by manufacturer to see all the records that exist for a specific manufacturer.

2. To add a new Lubricant record with the same manufacturer as one that already exists, in the first blank row at the bottom of the grid, in the **Lubricant Manufacturer** cell, click the ▾ button, and select a value from the list.

   The list in the **Lubricant** cell in that row is populated automatically with the values that exist in Lubricant records whose Lubricant Manufacturer value corresponds with your selection in the **Lubrication Manufacturer** cell.

3. In the same row, in the **Lubricant** cell, type a value or click the ▾ button, and select a value from the list.

4. In the same row, in the **Method** cell, type a value or click the ▾ button, and select a value from the list.

5. Continue entering information in each row as desired.

6. Click the 💾 icon.

   The new Lubricant records are saved to the database.

Options for Creating Lubrication Requirement Records

To create a Lubrication Requirement record, you can:

- [Create it from scratch](#).

  -or-

- [Create it from a template](#).

Accessing the Lubrication Management Template Management Page

Meridium APM provides the Template Management query, which is run when you access the **Lubrication Management Template Management** page. On this page, you can view a list of all Lubrication Requirement Template records that exist in the database. You can use this page to view the existing Lubrication Requirement Template records or create new Lubrication Requirement Template records.

To access the Lubrication Management Template Management Page:

- On the **Lubrication Management Start Page**, click the **Template Management** link.

  The **Lubrication Management Template Management** page appears, displaying all existing Lubrication Management Template records.
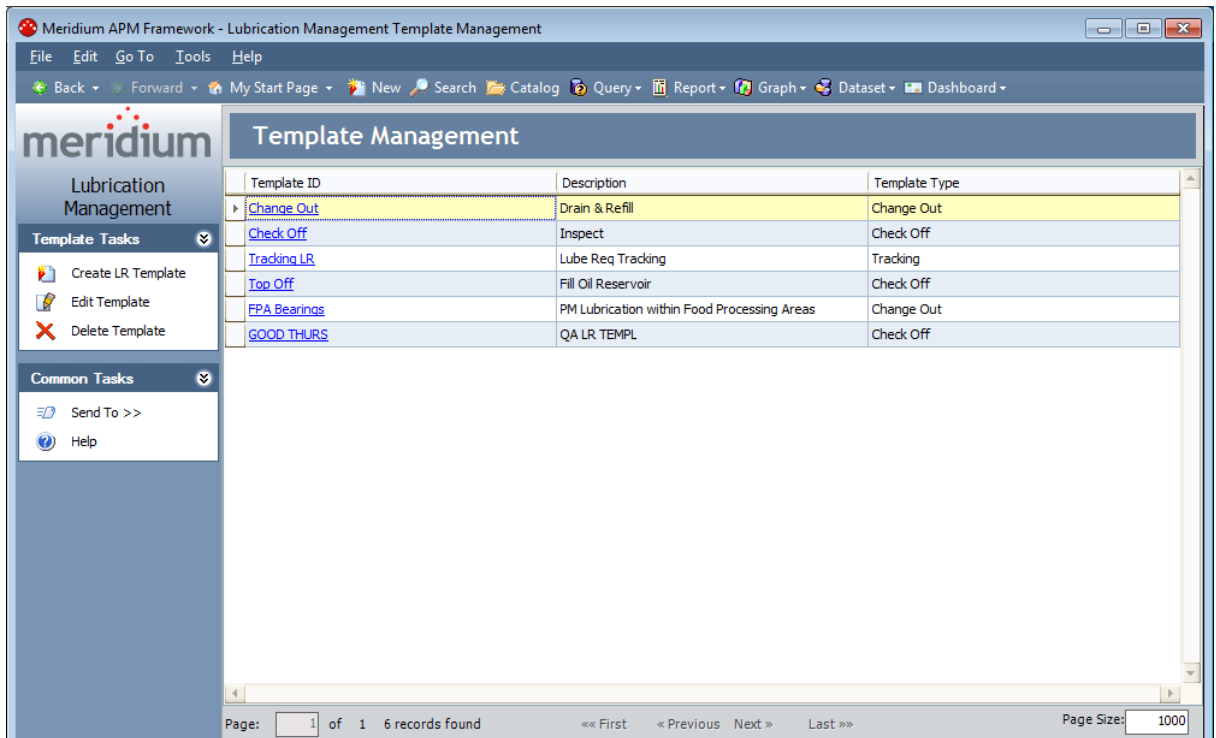
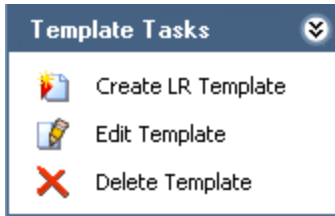# Aspects of the Lubrication Management Template Management Page

The **Lubrication Management Template Management** page contains the following items:

- **Task menus:**Provide specific functionality. The following task menus are available:Template TasksandCommon Tasks.
- **Template Management workspace:**Displays a list of all existing Lubrication Requirement Template records.

Using the **Lubrication Management Template Management page**, you can perform the following tasks:

- View the schedule associated with each Lubrication Requirement Template record.
- Create new Lubrication Requirement Template records.
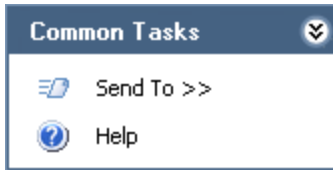- Modify existing Lubrication Requirement Template records.

Template Tasks Menu

The **Template Tasks** menu on the **Lubrication Management Template Management** page contains the following links:

- **Create LR Template:** Displays a new Lubrication Requirement Template record in the Record Manager.

- **Edit Template:** Displays the selected Lubrication Requirement Template record in the Record Manager, where you can modify the record and then save your changes.

- **Delete Template:** After asking for confirmation, deletes the selected Lubrication Requirement Template record from the database. Note that you can delete only one Lubrication Requirement Template record at a time using this link. If you select multiple rows, the row with the right arrow indicator represents the record that will be deleted.

Common Tasks Menu

The **Common Tasks** menu on the **Lubrication Management Template Management** page contains the following links:

- **Send To:** Displays a submenu with options that let you send a link to the current page to your desktop (create shortcut), in an email message, or a Home Page.This link is disabled if no Lubrication Requirement Template records are displayed.

- **Help:** Displays the context-sensitive Help topic for the **Lubrication Management Template Management** page.

Creating a Lubrication Requirement Template Record

If desired, you can create a Lubrication Requirement Template record that you can then use to create Lubrication Requirement records. By default, the Lubrication Requirement Template datasheet contains almost all the fields that appear on the Lubrication Requirement datasheet. After you save a Lubrication Requirement Template record, when you create a Lubrication Requirement record based on the template, all values in the template will be copied to the Lubrication Requirement record.

To create a Lubrication Requirement Template record:

1. On the Lubrication Requirement Template Management page, on the **Template Tasks** menu, click the **Create LR Template** link.

   A new Lubrication Requirement Template record appears in the Record Manager.

2. Complete the fields as desired. Note that the Template ID field and the LR Type field are required.

The Template ID field can contain any value you choose. The value you type will appear in the **Template** cell on the Lubrication Requirement datasheet when you create a new Lubrication Requirement record, so you will want to type a value that is meaningful to users who will be creating Lubrication Requirement records from this template.

> **Note:** If the Template ID contains an apostrophe, an error message appears when you create a Lubrication Requirement record from the Lubrication Requirement Template record.

If you select **Check Off** in the **LR Type** list, the Unit of Measure field will be disabled.

3. When you have completed the fields, on the **Common Tasks** menu, click the **Save** link.

The Lubrication Requirement Template record is saved. You can now create a Lubrication Requirement record from this template.

Creating a Lubrication Requirement Record from Scratch

To create a Lubrication Requirement record from scratch:

1. On the **Lubrication Management Route Management**page, click the hyperlinked Route ID of the Route record to which you want to link Lubrication Requirement records.

    The Route record is displayed in the Record Manager.

2. In the **LM Explorer**pane, right-click the Lubrication Requirement family node, and on the shortcut menu, click **Create a new Lubrication Requirement to link to <root record>**, where **<root record>** is the Route ID of the Route record.

    The **(new Lubrication Requirement)** window appears, displaying a blank Lubrication Requirement datasheet.

3. Complete the fields as desired. Note that the LR Type field is required.

   If you select *Check Off* in the **LR Type** cell, the Unit of Measure field will be disabled.

4. Click **OK** to save the record.

   The Lubrication Requirement record appears in the Record Manager.

Creating a Lubrication Requirement Record from a Template

To create a Lubrication Requirement record from a Template:

1. On the **Lubrication Management Route Management** page, click the hyperlinked Route ID of the Route record to which you want to link Lubrication Requirement records.

   The Route record is displayed in the Record Manager.

2. In the **LM Explorer** pane, right-click the Lubrication Requirement family node, and on the shortcut menu, click **Create a new Lubrication Requirement to link to <root record>**, where **<root record>** is the Route ID of the Route record.

   The **(new Lubrication Requirement)** window appears, displaying a blank Lubrication Requirement datasheet.

3. In the **Template** list, select the Lubrication Requirement Template record whose field values you want to use to populate fields in this Lubrication Requirement record.

4. Click another field on the datasheet.

   The remaining fields are populated based on the values in the selected Lubrication Requirement Template record. Note that you can modify the values if desired.

~~Change Out (new Lubrication Requirement)

~~Change Out (new Lubrication Requirement)

Datasheet Lubrication Requirement

Identification

	Value(s)
Template	Change Out
Asset ID	
Asset Description	
▶ Description	Drain & Refill
LR Type	Change Out
Unit of Measure	Liters (LITER)
Method	Change
Lubricant Manufacturer	Exxon
Lubricant	
Status	Active
Schedule	Due every 1 day effective 12/15/2008 12:00:00 AM.
Last Date	
Next Date	4/14/2012
Sequence	
Component	
Number of Points	1
Capacity	4
Capacity Unit of Measure	
Priority	

OK   Cancel

Note: The Lubricant field is not populated with the value in the **Lubricant** cell in the Lubrication Requirement Template record.

5. Complete the remaining fields as desired.

6. Click **OK** to save the record.

   The Lubrication Requirement record appears in the Record Manager.

About Defining a Schedule for Lubrication Requirements

In most cases, you will want checkpoints to be completed on a regular basis. For example, you would want to lubricate some bearings hourly or some components daily. To manage these scenarios, you can define a schedule for each Lubrication Requirement.

After you define a schedule in a new Lubrication Requirement record, the Schedule field will contain a description of when the checkpoint should be completed. For example, if the schedule dictates that the checkpoint should be completed daily, the Schedule field might contain the text *Due every 1 day effective 8/8/13 7:00:00:00 AM*.
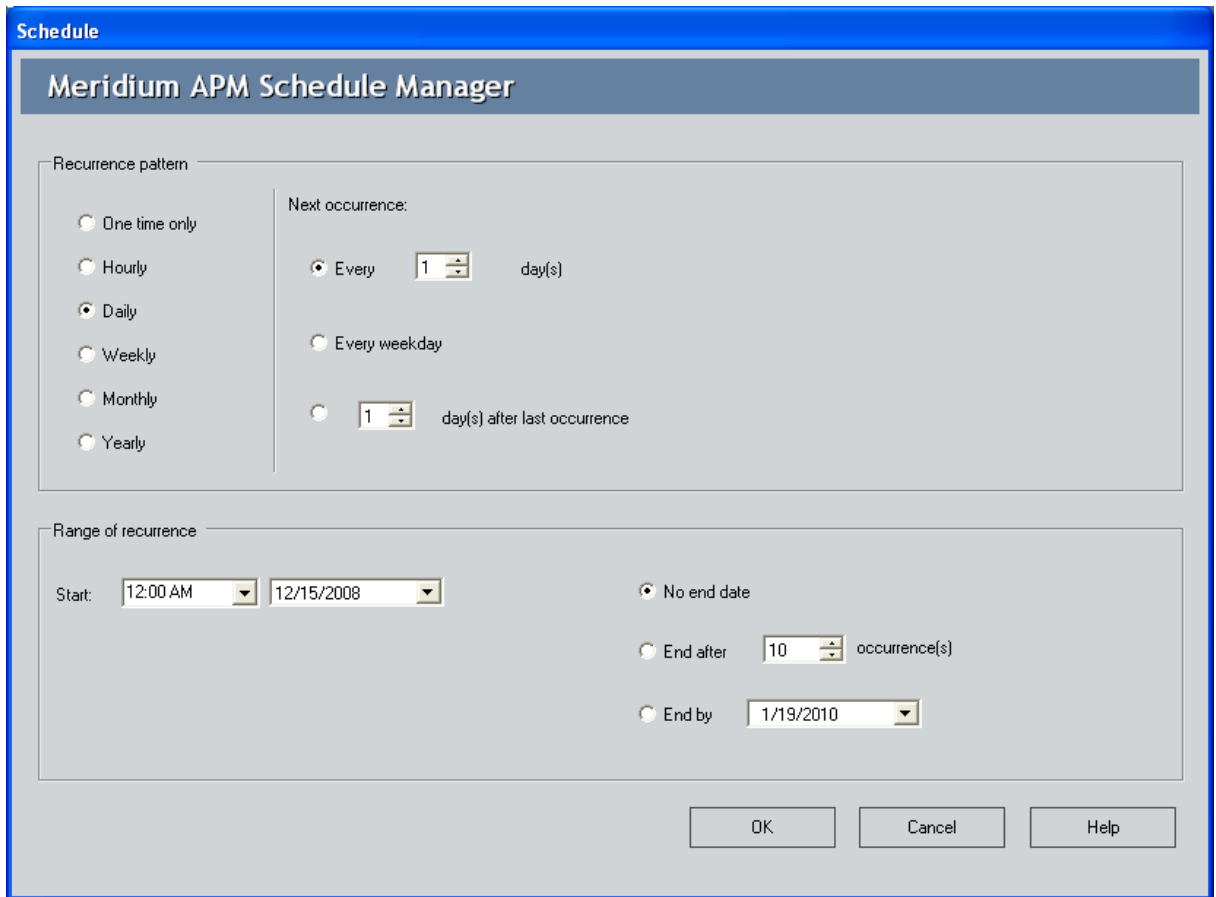
In addition, the value in the Next Date field in that Lubrication Requirement will be updated based on the schedule and the current date. After you link a Reading record to the Lubrication Requirement record, the Next Date value will be updated according to the defined schedule and the last date. You can modify a calculated Next Date value at any time, if desired.

Accessing the Scheduling Feature

To access the scheduling feature:

- On the Lubrication Requirement datasheet, in the **Schedule** cell, click the ⋯ button in the **Schedule** cell.

  The **Schedule** window appears.

About the Schedule Window

The following table lists the schedules by which you can configure an item to be due using the **Schedule** window.

Recurrence Pattern	Schedule Description	Example	Example Selections
One time only	One time only.	June 20, 2007 at 4:00 P.M.	
Hourly	Every **x** number of hours.	Every five hours.	
	x number of hours after the last occurrence.	Five hours after the last occurrence.	
Daily	Every **x** number of days.	Every two days.	
	Every weekday.	Every weekday.	
	x number of days after the last occurrence.	Two days after the last occurrence.	
Weekly	Every **x** number of weeks on the **x** day of the week.	Every two weeks on Wednesday.	
	x number of weeks after the last occurrence.	Two weeks after the last occurrence.	
Monthly	Day **x** of every **x** month.	Day 15 of every one month.	
	The **x** day of every **x** number of months, where you define the day of the week.	The first Friday of every two months.	
	x number of months after the last occurrence.	One month after the last occurrence.	

Recurrence Pattern	Schedule Description	Example	Example Selections
Yearly	Every x day of every x number of years, where you define the month of the year.	Every April 15 of every one year.	
	The x day of every x number of years, where you define the day of the week and the month of the year.	The third Friday of June, every three years.	
	x number of years after the last occurrence.	Two years after the last occurrence.	

Note that in addition to indicating when an item is due, you can also use the **Range of Recurrence** section of the **Schedule** window to indicate:

- **The date on which the schedule should become active.** For example, if you configure an item to be due the first Monday of every week and the current day is Monday, you might want to wait a week before putting the schedule in place. To do so, you could select the date of the following Monday in the Start fields in the **Range of Recurrence** section.

- **The date by which the schedule should end.** For example, suppose you configure a pump inspection to be due every Friday. If you know that after Friday, December 29, 2007, the pump will be replaced, you might want to set an end date for the schedule. You can select the following options for a schedule end date:

    - **No end date.** The schedule does not have an end date.

    - **End after x number of occurrences.** The schedule ends after a specific number of occurrences.

    - **End by x date.** The schedule ends by a specific date.

About Applying a Sequence Value to Lubrication Requirement Records

Each Lubrication Requirement record contains a Sequence field, which should contain a numeric value representing the order in which the checkpoint should be performed.

We recommend that you sequence the Route by arranging Lubrication Requirement records in an order that corresponds to the proximity of the associated equipment or locations. For example, suppose you want to lubricate ten bearings in the facility, and the bearings are labeled according to the area in which they reside (Bearings A-1 through A-5 reside in Area A; Bearings B-1 through B-5 reside in Area B).

In this case, you would want to make sure the user does not waste time traveling between Area A and Area B multiple times. So, you would specify sequence values of *1* through *5* in the Lubrication Requirement records linked to Bearings A-1 through A-5, and you would specify sequence values of *6* through *10* in the Lubrication Requirement records linked to Bearings B-1 through B-5.

When you are [creating a Lubrication Requirement record](#), if you know the order of that checkpoint relative to other checkpoints along the Route, you can type a numeric value specifying the order. For example, if you are creating a Lubrication Requirement record representing the first checkpoint that users should complete along the Route, you would type **1**.

If, on the other hand, you do not know the order of a checkpoint relative to other checkpoints along the Route (i.e., you have not finished creating the associated Lubrication Requirement records), you are not required to specify a value in the Sequence field when you create the record.

You can use the **Sequence Route** link on the **Associated Pages** menu to view all Lubrication Requirement records that are linked to the Route record. From the **Sequencing** page, you can [specify a sequence value in each Lubrication Requirement record while viewing all Lubrication Requirement records that are linked to the Route record](#).

Applying a Sequence Value to Lubrication Requirement Records

To apply a sequence value to each Lubrication Requirement record that is linked to a Route record:

1. On the Lubrication Management Route Management page, open the Route record that is linked to the Lubrication Requirement records to which you want to apply a sequence value.

   The Route record appears in the Record Manager.

2. On the **Associated Pages** menu, click the **Sequence Route** link.

   The Sequencing page appears, displaying the linked Lubrication Management records in the order in which the records were created.
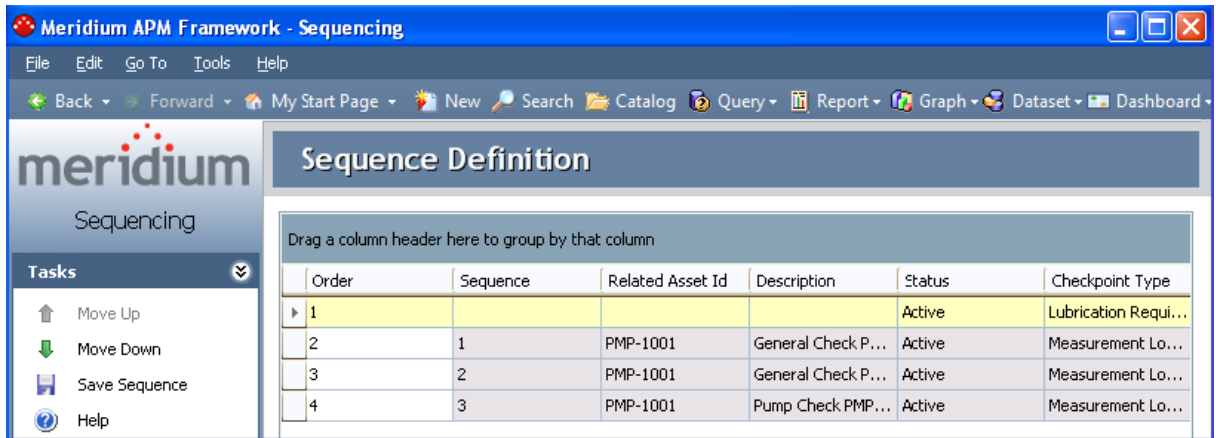
3. Locate the row representing the first checkpoint along the Route, and in the **Order** column, type **1**.

   The list is resorted, and the selected record appears at the top of the list.

4. For each checkpoint, in the **Order** column, continue typing a numeric value representing the order in which the checkpoints should be completed.

   > Œ**Hint:** You can also use the **Move Up** and **Move Down** links on the **Tasks** menu to order the Lubrication Requirement records.

5. When you are finished sequencing the checkpoints along the Route, on the **Tasks** menu, click the **Save Sequence** link.

   The Lubrication Requirement records are saved with the specified sequence values. Note that the Sequence field is the first field in the ID Template for the Lubrication Requirement family. This means that Lubrication Requirement records will be displayed in the **LM Explorer** pane and in Search results in ascending order according to their sequence value.

For example, if the following checkpoints are sequenced like this:

Axle Check Off = 03
Hinge Check Off = 02
Pump Check Off = 01
Refrigerator Change Out= 04

...they will be displayed in the **LM Explorer** pane as shown in the following image.
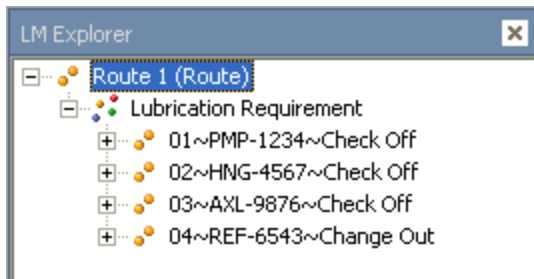
Note: When you see Lubrication Requirement records in the **Record Explorer** pane or Search results, records with a Sequence value of 1 through 9 will have a prepended *0* in the Record ID. For example, if you type *1*, it will be reformatted as *01* in the Record ID.

About Reference Documents and Lubrication Requirements

A reference document is a file (e.g., a Word document) that contains supplementary information that users need to view while they are working. To associate a reference document with a Lubrication Requirement, you must:

1. Create a Reference Document record for the reference document.

2. Link the Reference Document record to the Lubrication Requirement record representing the checkpoint that is associated with the reference information.

You can link new Reference Document records to Lubrication Requirement records via the **LM Explorer** pane for the desired Lubrication Requirement record.

Linking New Reference Document Records to Lubrication Requirement Records

To create a Reference Document record that is linked to a Lubrication Requirement record:

1. On the [Lubrication Management Route Management](#) page, click the hyperlinked Route ID of the Route record that contains the Lubrication Requirement record with which you want to associate a reference document.

   The Route record is displayed in the Record Manager.

2. In the **LM Explorer** pane, expand the Lubrication Requirement record node with which you want to associate reference data.

   The Reading and Reference Document family nodes appear below the Lubrication Requirement record node.

3. Right-click the Reference Document family node, and on the shortcut menu, click **Create a new Reference Document record to link to <Lubrication Requirement record>**.

   A new Reference Document record appears in a new window.

4. In the **ID** text box, type an ID for the reference document.

5. In the **Description** text box, type a description of the reference document.

6. In the **Document Path** text box, click the ⋯ button.

   The **Reference Document Path** dialog box appears.
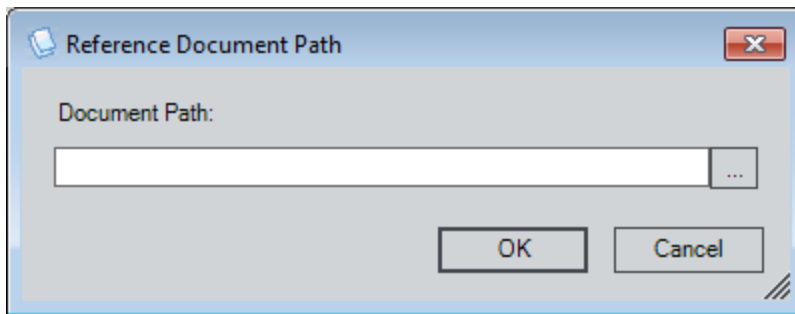
   In the **Document Path** text box, you can type the path to the reference document, or you can click the ... button to browse for the document. These instructions assume that you want to browse for the document.

7. Click the ... button, and select the desired file.

   The **Document Path** text box is populated with the path to the selected file.
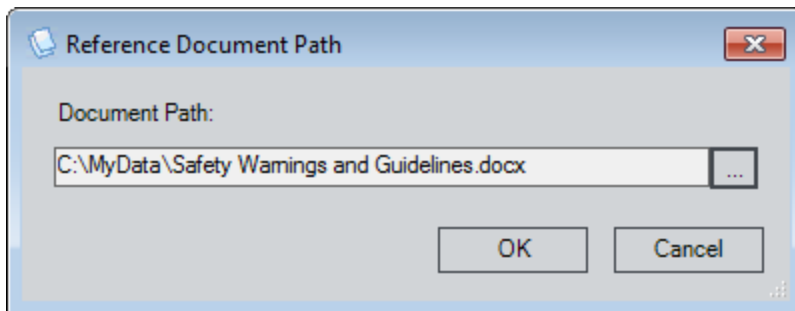
8. Click **OK**.

   The **Document Path** text box is populated with a link to the document.
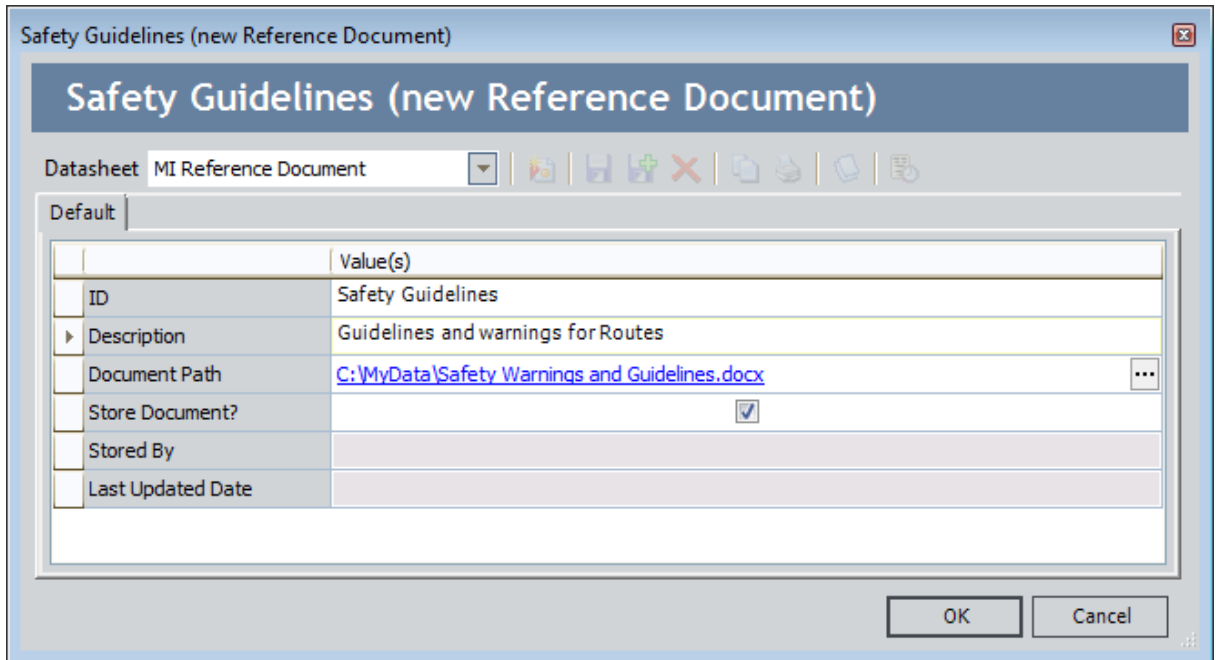
9. If you want to save a copy of the reference document to the Meridium APM data-base, accept the default setting for the **Store Document?** check box (i.e., *selected*).

10. Click **OK**.

The new Reference Document record is linked to the selected Lubrication Require-ment record and is displayed on the **Reference Documents** tab.

Creating Lubrication Management Recommendation Records

To create a Lubrication Management Recommendation record:

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

    The **Select Family** dialog box appears.

2. In the list, select **Lubrication Management Recommendation**.

3. Click **OK**.

    The new Lubrication Management Recommendation record appears in the Record Manager.
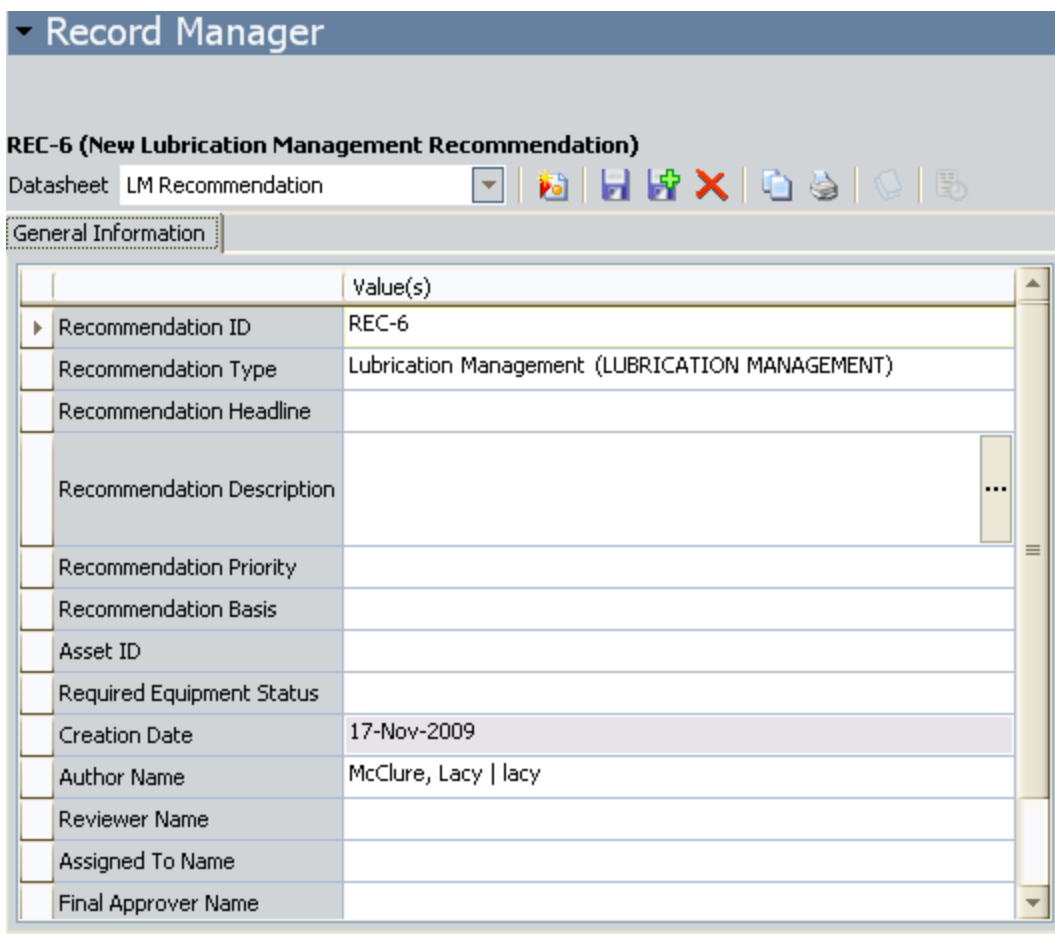
4. Complete the fields on the datasheet as desired.

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

    The Lubrication Management Recommendation record is saved.

Accessing the Lubrication Management Reports Page

You can use the **Lubrication Management Reports** page to [open the reports](#) that are stored in the Catalog folder \\Public\Meridium\Modules\Lubrication Management\Reports and view them in the Report Viewer.

To access the Lubrication Management Reports page:

- On the **Lubrication Management Start Page**, click the **Run Reports** link.

  The **Lubrication Management Reports** page appears.
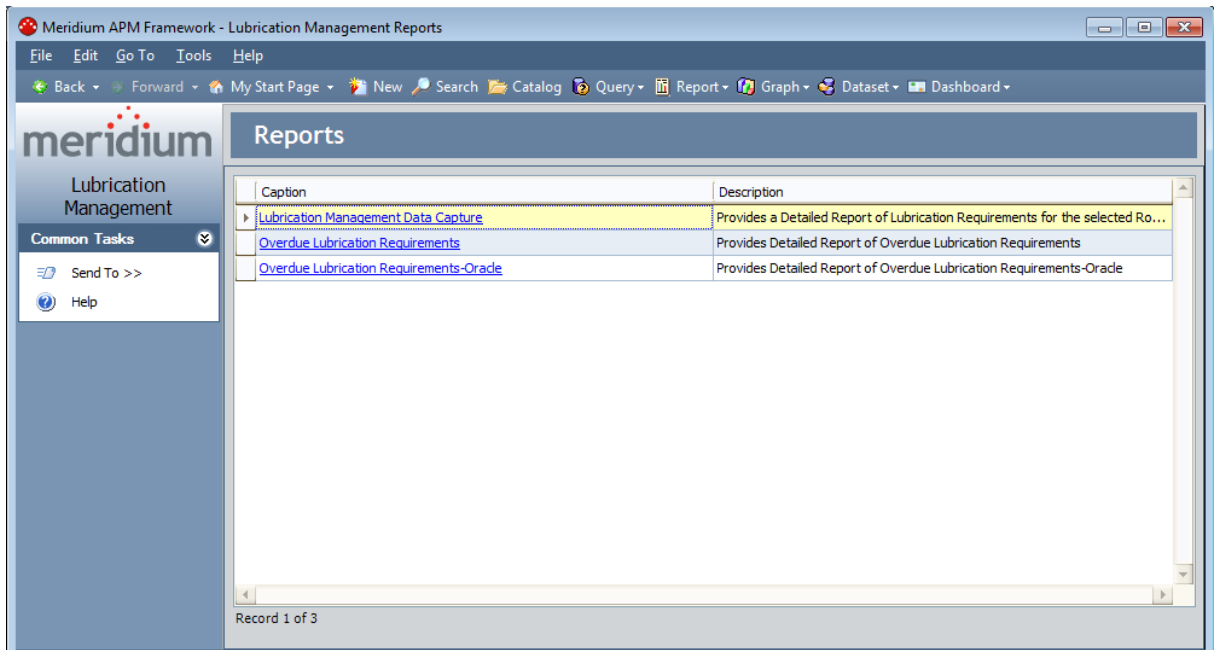
Aspects of the Lubrication Management Reports Page

The **Lubrication Management Reports** page contains a grid that displays one row for each report that is stored in the Catalog folder \\Public\Meridium\Modules\Lubrication Management\Reports.
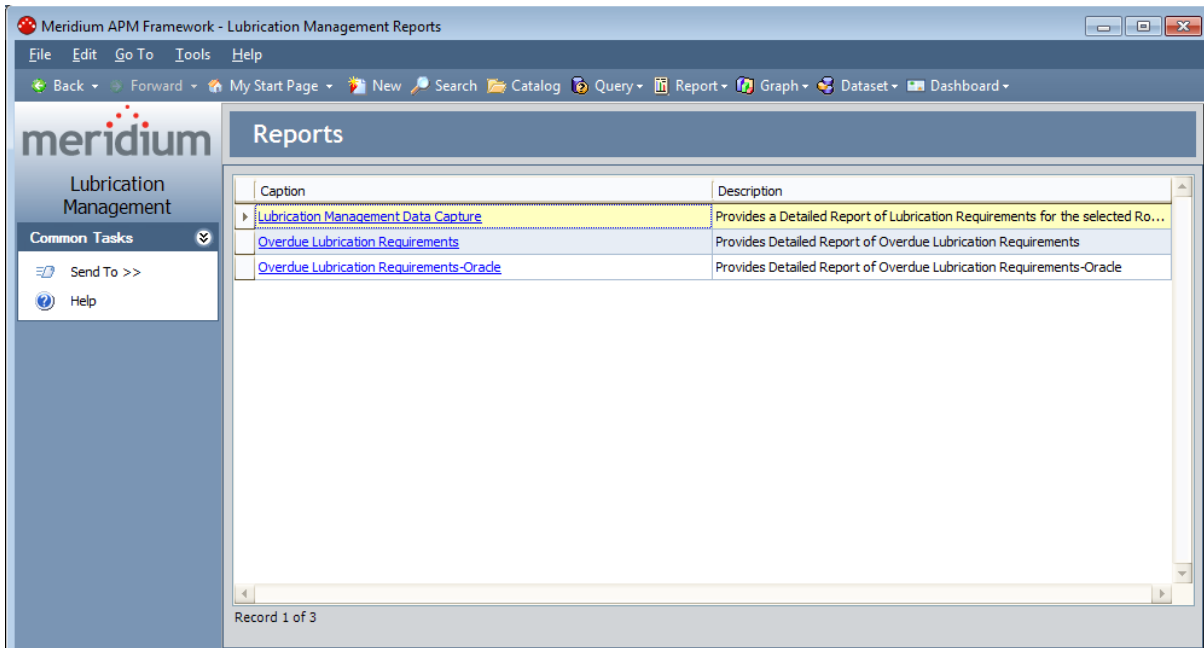
The grid contains the following columns:

- **Caption:** Displays the hyperlinked report caption, which you can click to open the report.
- **Description:** Displays the report description.

The **Lubrication Management Reports** page contains one task menu, **Common Tasks**.

Common Tasks Menu
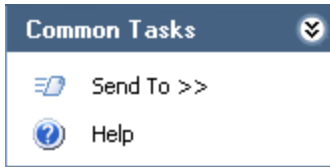
The **Common Tasks** menu on the **Lubrication Management Reports** page contains the following links:

- **Send To:** Displays a submenu with options that let you send a link to the current page to your desktop (create shortcut), in an email message, or a Home Page.

- **Help:** Displays the context-sensitive Help topic for the **Lubrication Management Reports** page.

Opening Reports from the Lubrication Management Report Page

To open a report from the Lubrication Management Reports page:

- In the grid on the **Lubrication Management Report** page, click the hyperlinked caption of the report that you want view.

> **Note:** If the report is based on a query that contains prompts, the **Enter Query Parameters** dialog box will appear. After you select the desired values, click **OK** to view the report.

The selected report appears on the Report Viewer page, where you can view the report and perform various tasks related to the report. If you want, you can print the report for users to reference when completing a checkpoint.

About the Lubrication Management Folder Structure

The Catalog folder \\Public\Meridium\Modules\Lubrication Management contains the following subfolders that contain items that are used by Lubrication Management:

- Explorers
- Queries
- Reports

The information in this section of the documentation is intended to serve as a quick reference to details that are provided elsewhere in the specific Lubrication Management instructions.

> **Note:** All of the Public folders exist by default. Any baseline item in the Baseline folder is also available in the corresponding Public folder. Throughout this documentation, however, we refer to items in the Public folder.

Explorers Folder

The following table lists the configured explorer that is stored in the Catalog location \\Public\Meridium\Modules\Lubrication Management\Explorers. The configured explorer name is listed in the table. The configured explorer name and caption are the same.

Configured Explorer	Behavior and Usage
LM Explorer	You can use the LM Explorer to create or open Route records instead of the standard **Record Explorer** pane. The difference between the **LM Explorer** pane and the **Record Explorer** pane is that the **LM Explorer** pane displays only Route, Lubrication Requirement, Reading, and Reference Document records. Since Lubrication Requirement records are linked to Equipment or Functional Location records, the standard **Record Explorer** pane will display those Equipment or Functional Location records. The **LM Explorer** pane, however, will not display these Equipment or Functional Location records or any other records that are linked to the records listed above.

Queries Folder

The Catalog location \\Public\Meridium\Modules\Lubrication Management\Queries contains the Report Queries folder. The following table lists the queries that are stored in the Report Queries folder. The reports are listed by name in the table. The query name and caption are the same unless otherwise noted.

Query	Behavior and Usage
Lubrication Management Data Capture	Displays a prompt asking you to select a Route record, and then returns all Lubrication Requirement records that are linked to the specified Route record.
Overdue Lubrication Requirements	Displays a prompt asking you to select a Route record, and then returns all overdue Lubrication Requirement records that are linked to that Route record. Each row in the results represents a Lubrication Requirement record whose Schedule value indicates that the checkpoint is overdue for maintenance.
Overdue Lubrication Requirements-Oracle	Displays the same results as the Overdue Lubrication Requirements query. This query, however, works on an Oracle schema only.

Reports Folder

The following table lists the reports that are stored in the Catalog location \\Public\Meridium\Modules\Lubrication Requirement\Reports. The reports are listed by name in the table. The report name and caption are the same unless otherwise noted.

Report	Behavior and Usage
Lubrication Requirement Data Capture	Displays a prompt asking for a Route record, and then displays a formatted version of the results from the Lubrication Requirement Data Capture query for the selected Route record. You can print this report and record reading values at the associated checkpoint. A link to this report appears on the **Lubrication Management Reports**page.
Overdue Lubrication Requirements	Displays a prompt asking for a Route record, and then displays a formatted version of the results from the Overdue Lubrication Requirements query for the selected Route record. A link to this report appears on the **Lubrication Management Reports**page.
Overdue Lubrication Requirements-Oracle	Displays the same results as the Overdue Measurement Locations report. This report, however, works on an Oracle schema only.

Lubrication Requirement

Lubrication Requirement records store details about the checkpoints for a Route. The following table provides an alphabetical list and description of the fields that exist for the Lubrication Requirement family and that are available on the **Identification** tab of the Lubrication Requirement datasheet. The information in the table reflects the baseline state and behavior of these fields. This list is not comprehensive.

Field	Data Type	Description	Behavior and Usage
ATG	Logical	This field is used by the Meridium APM system.	This field does not appear on any datasheet by default. The value is set automatically by the Meridium APM system.
Asset Description	Character	A description of the Equipment or Functional Location record to which you want to link the Lubrication Requirement record.	On the datasheet, this field appears as a text box labeled **Asset Description**. If you entered in the Asset ID field a value that is stored in the database, after you save the Lubrication Requirement record, the **Asset Description** cell will be populated automatically with the value in the Asset Description field of the associated record (as long as the field ID of the Asset Description field for that entity family is exactly ASSET_DESC_CHR).
			If you do not want Meridium APM to populate the field automatically, you can enter a description for the equipment or location to which you want to link the Lubrication Requirement record directly in the **Asset Description** cell. You are not required to type the description exactly as it is stored in the database.

Field	Data Type	Description	Behavior and Usage
Capacity	Number	A number representing the amount of lubricant that the component will hold.	On the datasheet, this field appears as a text box labeled **Capacity** in which you can enter the desired value.
Capacity Unit of Measure	Character	A value representing the UOM associated with the value in the Capacity field.	On the datasheet, this field appears as a text box. You can enter a value directly in the **Capacity Unit of Measure** cell.
Component	Character	The part of the equipment that requires lubrication (e.g., axle or bearing).	On the datasheet, this field appears as a text box. You can enter a value directly in the **Component** cell.
Last Date	Date	The date on which the last reading was recorded for this checkpoint.	On the datasheet, this field appears as a text box labeled **Last Date** and is populated automatically based on the defined schedule and the current date.
Lubricant	Character	The lubricant that is required for this checkpoint.	On the datasheet, this field appears as a list labeled **Lubricant** and is populated with the values stored in the Lubricant field in the existing Lubricant records. In addition, this list is filtered by the value that you select in the **Lubricant Manufacturer** list. You can select a value in the list.

Field	Data Type	Description	Behavior and Usage
Lubricant Manufacturer	Character	The company that manufactures the lubricant that users should use when completing this checkpoint.	On the datasheet, this field appears as a list labeled **Lubricant Manufacturer** and is populated with the values stored in the Lubricant Manufacturer field in the existing Lubricant records. In addition, this list is filtered by the value that you select in the **Method** list. You can select a value in the list.
LR Type	Character	The type of data that users can enter when creating a Reading record linked to the Lubrication Requirement record.	On the datasheet, this field appears as list labeled **LR Type** and contains the following values: • Check Off • Change Out • Tracking You can select a value from the list. This field is required.
Method	Character	The method that users should use when applying a lubricant at this checkpoint.	On the datasheet, this field appears as a list labeled **Method** and is populated with the values stored in the Method field in the existing Lubricant records. You can select a value from the list.
Next Date	Date	The date on which the next reading is due for this checkpoint.	On the datasheet, this field appears as a text box labeled **Next Date** and is populated automatically based on the values stored in the Schedule and Last Date fields.

Field	Data Type	Description	Behavior and Usage
Number of Points	Number	The number of points on the component that requires lubrication.	On the datasheet, this field appears as a text box labeled **Number of Points** in which you can enter the desired number of points. For example, if you typed `axle` in the **Component** cell, you might type **2** in the **Number of Points** cell.
Priority	Character	A value representing the priority associated with the lubrication requirement.	On the datasheet, this field appears as a text box. You can enter a value directly in the **Priority** cell.
Related Asset ID	Character	The ID of the Equipment or Functional Location record to which you want to link the Lubrication Requirement record.	On the datasheet, this field appears as a text box labeled **Asset ID**. You can enter an ID directly in this cell. If the Equipment or Functional Location family has been configured as specified in the Configuration Manager and you type a valid ID, after you save the Lubrication Requirement record, the Lubrication Requirement record will be linked to the record identified by the ID that you typed. You must type the ID exactly as it is stored in the database.
Schedule	Character	The schedule by which you want to complete this checkpoint.	On the datasheet, this field appears as a text box labeled **Schedule** and contains a ⋯ button, which you can click to view the **Schedule** window where you can define the desired schedule.

Field	Data Type	Description	Behavior and Usage
Sequence	Number	A number indicating the order in which the checkpoint should be completed relative to other checkpoints along the same Route.	On the datasheet, this field is disabled and populated automatically.
Status	Character	The status of the Lubrication Requirement record. By default, this field contains the value *Active*.	On the datasheet, this field appears as a list labeled **Status** and contains the following values: • Active • Inactive You can select a value in the list.
Template	Character	The ID of the Lubrication Requirement Template record that you want to use to populate fields in the Lubrication Requirement record.	On the datasheet, this field appears as a list labeled **Template** and contains the values stored in the Template ID fields in the Lubrication Requirement Template records that exist in the database. You can select a value from the list. When you do so, the remaining fields will be populated automatically with the values in the corresponding Lubrication Requirement Template record. Note that if you later remove the selection from the **Template** list, the fields that were populated automatically will remain populated.

Field	Data Type	Description	Behavior and Usage
Unit of Measure	Character	The unit of measure that users can specify when entering a reading value for this checkpoint.	On the datasheet, this field appears as a list labeled **Unit of Measure**. You can select a value from the list. This field is disabled if the LR Type field contains the value *Check Off*.

Lubrication Requirement Template

Lubrication Requirement Template records can be used to create Lubrication Requirement records and contain all the fields included in Lubrication Requirement records, with the exception of the Template field in the Lubrication Requirement record. In addition, Lubrication Requirement Template records include the additional field *Template ID*, which stores the ID for the template. This value appears in the Template field in the Lubrication Requirement record.

System Code Tables Used by Lubrication Management

The following System Code Tables are used by Lubrication Management.

Table ID	Table Description	Function
MI_FDC_STATUS_TYPE	Status types for Checkpoint families	Unknown
MI_RECOMMENDATION_TYPE	CORE, Recommendation Type	Used to populate the **Recommendation Type** list in Recommendation records. Note that the Recommendation Type field is not included on the baseline LM Recommendation datasheet.
MI_LM_LUBR_REQ_TYPE	Types of Lubrication Requirement	Used to populate the **LR Type** list on the Lubrication Requirement record.
MI_LM_REFERENCES	List of references for Lubrication Management	Used to populate the **Unit of Measure** list in Lubrication Requirement records.

Lubrication Management URLs

The following table lists and describes the paths for accessing features in Lubrication Management. Note that to construct a valid URL, you must prepend **meridium://** to the path.

Note: Lubrication Management URLs do not accept any parameters.

Feature	Path	Description
Lubrication Management Start Page	LM	Displays the **Lubrication Management Start Page**.
Lubrication Management Route Management	LM/RouteManagement	Displays the **Lubrication Management Route Management** page.
Lubrication Management Template Management	LM/TemplateManagement	Displays the **Lubrication Management Template Management** page.
Lubrication Management Reports	LM/Reports	Displays the **Lubrication Management Reports** page.
Lubrication Management Recent Routes	LM/RecentRoute	Displays the **Lubrication Management Recently Modified Routes** page.
Lubrication Management Manage Lubricants	LM/ManageLubricants	Displays the **Lubrication Management Manage Lubricants** page.