



Red Hat Application Migration Toolkit

4.0.Beta4

Eclipse Plugin Guide

Simplify Migration of Java Applications

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Abstract

This guide describes how to use the Red Hat Application Migration Toolkit Eclipse plugin to simplify migration of Java applications.

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CHAPTER 1. INTRODUCTION

1.1. ABOUT THE ECLIPSE PLUGIN GUIDE

This guide is for engineers, consultants, and others who want to use the Eclipse plugin for Red Hat Application Migration Toolkit (RHAMT) to assist with migrating applications.



NOTE

This guide uses *Eclipse* to refer to an installation of Eclipse or JBoss Developer Studio.

1.2. ABOUT RED HAT APPLICATION MIGRATION TOOLKIT

What is Red Hat Application Migration Toolkit?

Red Hat Application Migration Toolkit (RHAMT) is an extensible and customizable rule-based tool that helps simplify migration of Java applications.

RHAMT examines application artifacts, including project source directories and application archives, then produces an HTML report that highlights areas needing changes. RHAMT can be used to migrate Java applications from previous versions of *Red Hat JBoss Enterprise Application Platform* from other containers, such as *Oracle® WebLogic Server* or *IBM® WebSphere® Application Server*.

How Does Red Hat Application Migration Toolkit Simplify Migration?

Red Hat Application Migration Toolkit looks for common resources and highlights technologies and known trouble spots when migrating applications. The goal is to provide a high-level view into the technologies used by the application and provide a detailed report organizations can use to estimate, document, and migrate enterprise applications to Java EE and Red Hat JBoss Enterprise Application Platform.

How Do I Learn More?

See the [Getting Started Guide](#) to learn more about the features, supported configurations, system requirements, and available tools in the Red Hat Application Migration Toolkit.

1.3. ABOUT THE ECLIPSE PLUGIN

The Eclipse plugin for Red Hat Application Migration Toolkit provides assistance directly in Eclipse and Red Hat JBoss Developer Studio for developers making changes for a migration or modernization effort. It analyzes your projects using RHAMT, marks migration issues in the source code, provides guidance to fix the issues, and offers automatic code replacement when possible.

1.4. SUPPORTED CONFIGURATIONS

The Eclipse plugin is tested in following development environments.

- Eclipse 4.7 (Oxygen)
- Red Hat JBoss Developer Studio 11.0

CHAPTER 2. INSTALL THE ECLIPSE PLUGIN

Review the [supported configurations](#) to make sure that you are using a development environment that is compatible with the Eclipse plugin.

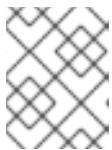


NOTE

If you are running macOS, it is recommended to set the maximum number of user processes, `maxproc`, to at least **2048**, and the maximum number of open files, `maxfiles`, to **100000**.

Install the Plugin

1. If you do not already have an existing installation, download [Eclipse](#) or [JBoss Developer Studio](#) and install it.



NOTE

This guide uses *Eclipse* to refer to an installation of Eclipse or JBoss Developer Studio.

2. Launch Eclipse.
3. From the menu bar, select **Help** → **Install New Software**.
4. Add the RHAMT update site.
 - a. Next to the **Work with** field, click **Add**.
 - b. In the **Name** field, enter **RHAMT**.
 - c. In the **Location** field, enter `http://download.jboss.org/jbosstools/oxygen/development/updates/rhamt/composite/` and press **OK**.
 - d. Select all of the checkboxes under **JBoss Tools - RHAMT** and press **Next**.
5. Review the installation details and press **Next**.
6. Accept the terms of the license agreement and press **Finish** to install the plugin.
7. Restart Eclipse for the changes to take effect.

CHAPTER 3. ACCESS THE RHAMT ECLIPSE TOOLS

Once the plugin is installed, the RHAMT Eclipse tools are available in the RHAMT perspective. To open the RHAMT perspective, navigate to **Window** → **Perspective** → **Open Perspective** → **Other**. Select **RHAMT** and press **OK**.

Review the [plugin components](#) and then get started [identifying and resolving migration issues](#). You can also view the embedded help for the plugin by selecting **Help** → **Getting Started** in Eclipse.

3.1. ECLIPSE PLUGIN COMPONENTS

The following components are available in the RHAMT perspective when using the Eclipse plugin to analyze projects.

Issue Explorer

This view allows you to explore the RHAMT issues for projects that have been analyzed.

If this view is not visible in the RHAMT Perspective, you can open it by selecting **Window** → **Show View** → **Issue Explorer**.

RHAMT Server

The RHAMT server is a separate process that executes the RHAMT analysis, flags the migration issues, and generates the reports.

You can start, stop, and view the status of the RHAMT server from the Issue Explorer.

Issue Details

This view shows detailed information about the selected RHAMT issue, including the hint, severity, and any additional resources.

If this view is not visible in the RHAMT Perspective, you can open it by selecting **Window** → **Show View** → **Issue Details**.

RHAMT Report


This view shows the HTML reports that are generated when RHAMT is executed. From the report landing page you can navigate to detailed reports, such as Application Details, Issues, and Dependencies.

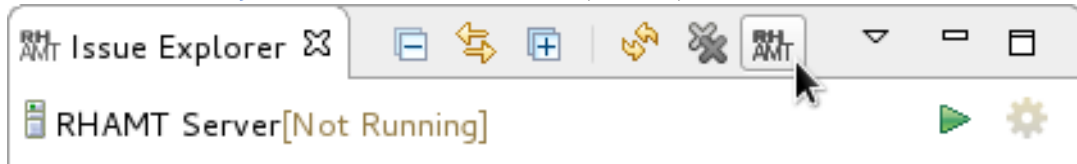
Note that the RHAMT run configuration used must have the **Generate Report** option selected in order for the RHAMT reports to be generated.

If this view is not visible in the RHAMT Perspective, you can open it by selecting **Window** → **Show View** → **RHAMT Report**.


CHAPTER 4. IDENTIFY AND RESOLVE MIGRATION ISSUES

Follow these steps to use the Eclipse plugin to identify and resolve migration issues.


1. Import the project to analyze into Eclipse.
2. [Create a run configuration](#). From the Issue Explorer, press the RHAMT button ().



At a minimum, select the project to analyze. Set additional options as needed.

3. Click **Run** to [execute RHAMT](#).
4. [Review RHAMT issues](#) listed in the Issue Explorer.
5. [Resolve RHAMT issues](#) by manually updating code or by using quick fixes when available.
6. Run RHAMT again as necessary. Use the drop down next to the **Run** button () to run an existing configuration.

4.1. CREATE A RHAMT RUN CONFIGURATION

RHAMT run configurations can be created using the RHAMT button (). A run configuration specifies the project to analyze, migration path, and additional options for the execution. You can create multiple run configurations, and each must have a unique name.

Input

Migration Path

Select a migration path, which determines which RHAMT rulesets are used. The migration path defaults to **Anything to EAP 7**, but can be changed to any supported migration path.

Projects

Select one or more projects to analyze. Hold the **Ctrl** key to select multiple projects in the list.

Packages

Select one or more packages to scan. It is recommended to select only those packages that you need to analyze to reduce the overall RHAMT execution time. If no packages are selected, all packages in the project will be scanned. Hold the **Ctrl** key to select multiple packages in the list.

Options

Report

Check the **Generate Report** checkbox if you want to generate the RHAMT HTML report. The report will be shown in the **RHAMT Report** tab and can be found in the Issue Explorer when you group by **File**.

Options

Set additional RHAMT options. Any option that is a boolean flag, such as `enableTattletale`, should use `true` as the value.

See the [RHAMT Command-line Arguments](#) section of the *CLI Guide* for a description of each RHAMT argument.


Rules

Custom Rules Repositories

Add a custom rules directory if you have any custom RHAMT rules.

4.2. EXECUTE RHAMT

Once a run configuration has been created, you can execute RHAMT using that configuration in one of the following ways:

- Select the run configuration from the **Run Configurations** dialog and click **Run**.
- Select a recent run configuration from the drop down next to the **Run** button ().

If the RHAMT server is not currently running, it will start once a run configuration is executed.



NOTE

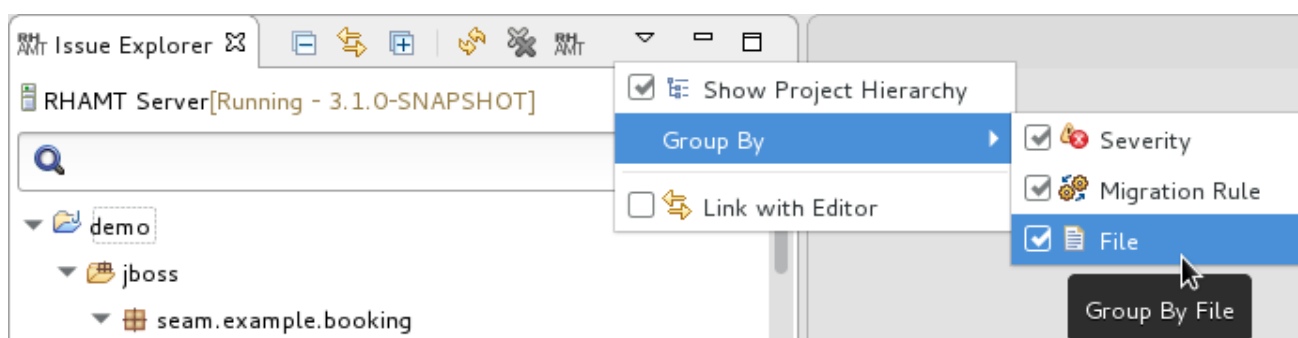
If you do not plan on running RHAMT in the near future, it is recommended to stop the RHAMT server to conserve memory on your machine.

Once execution is complete, the Issue Explorer will be populated with RHAMT issues.

4.3. REVIEW RHAMT ISSUES

Use the Issue Explorer to review migration issues identified by RHAMT. Different [icons](#) indicate the issue's severity and state.

Change how issues are grouped by adjusting the **Group By** selections: Severity, Migration Rule, and File.





Double-click the RHAMT issue in the Issue Explorer to open the associated line of code in an editor. Right-click and select **Issue Details** to view information about the RHAMT issue, including its severity and how to address it.

4.4. RESOLVE RHAMT ISSUES

You can resolve RHAMT issues by updating the code manually or by applying a quick fix when available.

4.4.1. Resolve an Issue Manually

Review the RHAMT issue details and additional resources and update the source code as necessary. When you update a line of code marked as a RHAMT issue, the RHAMT issue will be marked with the stale icon () until the next time that RHAMT is run on the project.

You can also manually mark a RHAMT issue as fixed, which will mark the issue with the resolved icon () until the next time that RHAMT is run on the project. To mark an issue as fixed, right-click the RHAMT issue in the Issue Explorer and select **Mark as Fixed**.

4.4.2. Resolve an Issue Using a Quick Fix

Some RHAMT issues provide a quick fix, which assists in making the necessary edits to address the issue. See the [icon legend](#) to see the icons that indicate the RHAMT issue has a quick fix available.

Preview a Quick Fix

Right-click the issue and select **Preview Quick Fix**. This will bring up a window that allows you to preview the change. From here, you can apply the fix or close the window.

Apply a Quick Fix









Right-click the issue and select **Apply Quick Fix**. This will update the source code as required and will mark the RHAMT issue as resolved.

APPENDIX A. REFERENCE MATERIAL

A.1. RHAMT ISSUE ICON LEGEND

In the Issue Explorer and file editors, RHAMT issues use an icon to indicate their severity level and status. The following table describes the meaning of the various icons.

Table A.1. RHAMT Issue Icons

Icon	Description
	The issue is mandatory to fix for a successful migration.
	The issue is optional to fix for migration.
	The issue may potentially be an issue during migration.
	The issue has been resolved.
	The issue is stale because the code marked as an issue has been modified since the last time that RHAMT was run on the project.
	A quick fix is available for this issue, which is mandatory to fix for a successful migration.
	A quick fix is available for this issue, which is optional to fix for migration.
	A quick fix is available for this issue, which may potentially be an issue during migration.

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