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| ONESOURCE™ Certificate Manager |

Installation Guide

Microsoft SQL Server Database and JBoss

2.2.x.x

Document Version 1

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DOCUMENT HISTORY

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Introduction

Certificate Manager controls all aspects of the exemption certificate lifecycle and is tightly integrated with ONESOURCE Determination to reduce operating costs, mitigate risks, and increase tax accuracy.

This guide explains how to install Certificate Manager version 2.2.x.x at your business. For information about cloud installations of Certificate Manager, contact your sales representative.

Who Should Read This Guide?

The installation requires the coordination of people in various roles. If you are responsible for overseeing the installation, make this guide available to the following contributors:

* Database administrator
* Application server administrator
* IT administrator
* Tax professional

Upgrade From Tax Certificate Manager 1.x

Certificate Manager 2.x is a new product offering that does not support a seamless, out-of-the-box upgrade path for existing Tax Certificate Manager 1.x implementations.

For more information about upgrading from Tax Certificate Manager 1.x to Certificate Manager 2.x, please contact ONESOURCE Professional Services or your account representative.

Architecture

Before starting the installation, review selected architectural considerations and the system layout:

Workflow: Data flows only from Certificate Manager to Determination. Users change customer, contact, and certificate information in Certificate Manager—not directly in the Determination user interface.

User Accounts: Certificate Manager uses Determination users and roles.

Installation Environment:

Certificate Manager cannot be installed without access to an instance of Determination.

Certificate Manager cannot be installed in the same application server instance as Determination.

A best practice is to install Certificate Manager and Data File Integrator in separate application server instances.

If you have multiple ONESOURCE products on the same server, change ports to avoid conflicts.

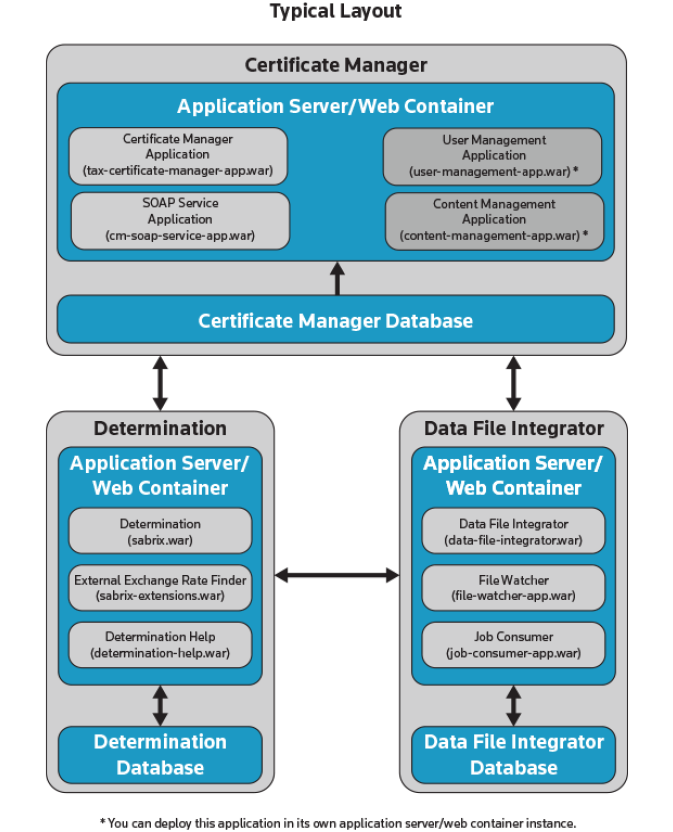
Certificate Manager is composed of several applications (see below). The typical layout is to deploy all the applications in a single application server/web container instance. However, you can deploy the User Management Application or the Content Management Application in separate instances.

Certificate Manager Application (tax-certificate-manager-app.war)

SOAP Service Application (cm-soap-service-app.war)

User Management Application (user-management-app.war)

Content Management Application (content-management-app.war)



Resources

Several resources help you become familiar with ONESOURCE Indirect Tax Certificate Manager and master its features. Help is installed with the application. All documents are posted on the [ONESOURCE Customer Center](https://tax.thomsonreuters.com/support/onesource/customer-center/). To locate documents specific to your application, enter the search term "Certificate Manager documentation."

| Certificate Manager Resources | |
| --- | --- |
| Resource | Description |
| Help | This Help system gives assistance within Certificate Manager. Use Help after Certificate Manager is installed and configured. |
| Installation Guide | This guide is intended for technical users and contains complete details about how to install and configure Certificate Manager. |
| Platform Support | This describes the combinations of operating systems, databases, and application servers on which Certificate Manager operates. |
| Product Support Lifecycle | This lists the end-of-life dates for products in the ONESOURCE Indirect Tax Suite. |

Still can't find what you're looking for? Try these additional resources:

| ONESOURCE Resources | |
| --- | --- |
| Resource | Description |
| ONESOURCE Customer Center  <https://tax.thomsonreuters.com/support/onesource/customer-center/> | Search for answers in the Knowledge Base, enter product support tickets, and track support ticket history for you and your organization. |
| Indirect Tax Customer Center  <https://customercenter.sabrix.com/> | Download ONESOURCE Indirect Tax software. |
| Other ONESOURCE Indirect Tax Products and Services  <https://tax.thomsonreuters.com/products/brands/onesource/indirect-tax/> | Browse descriptions of other ONESOURCE Indirect Tax products and services. |
| Documentation Feedback  [onesource.indirect.tax.fb@thomsonreuters.com](http://onesource.indirect.tax.fb@thomsonreuters.com/) | Send feedback about ONESOURCE Indirect Tax documentation. |

Style Conventions

Thomson Reuters uses the following formatting throughout this guide:

Bold text indicates most user interface elements, such as:

* Data you are expected to enter, such as in a text field
* Pages, buttons, tabs, and field names
* Dialog boxes, drop-down lists, selections within lists, and check box titles
* Windows
* Menu items

Italic text indicates the following:

* File and folder names
* Java classes, PL/SQL objects and executable files
* Document titles

CAPITAL text indicates keyboard commands, such as ENTER, or database components.

Courier text indicates command-line input/output.

<brackets> indicate user entry. For example, <host> indicates you should replace the text and angle brackets with your server name.

Book titles are shown in italics and sections within a book are in quotation marks, such as “Starting the Installation” in the ONESOURCE Indirect Tax Certificate Manager Installation Guide.

|  |
| --- |
| This pencil symbol indicates suggestions or additional information. |

|  |
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| This warning symbol indicates important text that you should review before proceeding. |

 This carriage return symbol indicates that a single line of code is divided into multiple lines so you can read it. If you copy and paste code with these symbols, be sure to keep the code before and after the carriage return on the same line.

1. /\* Some code snippets may have numbered lines with a gray background. \*/
   1. /\* If you copy lines from code snippets that include line numbers, be sure to remove those line numbers. \*/

JBoss Checklists

Use the checklists below to track your progress through the installation.

Prerequisites

| Prerequisites | |
| --- | --- |
| Task | Complete? |
| [Review System Requirements](#_Ref-1219869639) |  |
| [Gather Administrative Information](#_Ref-576299449) |  |
| [Download the Software](#_Ref432135788) |  |

Installation

| JBoss Configuration | |
| --- | --- |
| Task | Complete? |
| Download the Microsoft JDBC Driver for SQL Server (page 17) |  |
| Create the Database (page 20) |  |
| Set Environment Variables (page 22) |  |
| Configure JDBC in JBoss (page 23) |  |
| Configure Memory (page 23) |  |
| Set SERVER\_OPTS Parameters (page 25) |  |
| Set Log Level (page 27) |  |
| Set Logging Provider (page 27) |  |
| Change JBoss Ports (page 29) |  |
| Create Data Sources (page 30) |  |
| Remove Subsystem Setting (page 35) |  |
| Install Logback Module (page 36) |  |
| Add Dependencies (page 36) |  |
| Insert Logback Module (page 36) |  |
| Deploy Certificate Manager under JBoss (page 38) |  |

Post-Installation Tasks

| Prerequisites | |
| --- | --- |
| Task | Complete? |
| Certificate Manager: General Configuration (page 39) |  |
| Certificate Manager: Email Configuration (page 41) |  |
| Certificate Manager: Remove the Installer (page 42) |  |
| Determination: Determination Roles (page 42) |  |
| Determination: Determination Configuration Parameter (page 48) |  |
| Certificate Manager and Determination: Additional Configurations (page 49) |  |

Prerequisites

Complete the following tasks before you install and configure Certificate Manager:

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| Certificate Manager requires a working installation of Determination 5.6.2.4 or higher. |

Review System Requirements

Gather Administrative Information

Download the Software

Review System Requirements

ONESOURCE Certificate Manager has detailed requirements for the following:

* Computer hardware
* Operating system
* Database
* Application server/web container

To confirm you are using supported components, review platform support and product support lifecycle information listed in the [ONESOURCE Customer Center](https://tax.thomsonreuters.com/support/onesource/customer-center/).

Gather Administrative Information

Before installing Certificate Manager, record your administrative information below:

| Type | Where to Find | Your Values |
| --- | --- | --- |
| Customer Center credentials | Thomson Reuters Customer Support |  |
| Server name and port for your Certificate Manager database | Your Database Administrator (DBA) |  |
| Service or instance name for your Certificate Manager database | Your DBA |  |
| Administrative credentials for your Certificate Manager database | Your DBA |  |
| Server name and port for your Determination database | Your DBA |  |
| Service or instance name for your Determination database | Your DBA |  |
| Tax user credentials for your Determination database (for example, SBXTAX) | Your DBA |  |
| Server name and port for your Certificate Manager application server or web container | Your application server administrator |  |
| Determination URL | Your Determination administrator |  |

Download the Software

Download Certificate Manager from the [ONESOURCE Customer Center](https://tax.thomsonreuters.com/support/onesource/customer-center/). If you plan to do bulk uploads of customers and certificates, also download Data File Integrator.

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| To install Certificate Manager, you must use a version of Oracle Java that is appropriate to your application server. See the [ONESOURCE Customer Center](https://tax.thomsonreuters.com/support/onesource/customer-center/) for additional information. |

Certificate Manager

Download Certificate Manager and a ONESOURCE forms file.

1. Log on to Customer Center by entering the user name and password assigned by Customer Support.
2. Under Available Products, locate ONESOURCE Indirect Tax Certificate Manager.
3. For Current Installed Version, select None.
4. Click Download, and then save this file to a directory on the system hosting Certificate Manager or to a networked folder that can be accessed by that system.
5. Unzip the ONESOURCEIDTCertificateManager\_22xx.zip file.
6. Back in the Customer Center, locate Certificate Manager Forms Content under Available Products.
7. For Current Installed Version, select None.
8. Click Download, and then save the forms .zip file to the same location as the Certificate Manager software.

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| Do not unzip the forms content file. |

Data File Integrator

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| You can install Data File Integrator on the same computer as Certificate Manager, but it is best to keep them in separate application server instances. See the ONESOURCE Indirect Tax Data File Integrator Installation Guide for instructions about getting started. |

1. Continue in the Customer Center and locate Data File Integrator under Available Products.
2. For Current Installed Version, select None.
3. Click Download, and then save this file to a directory on the system hosting Data File Integrator or to a networked folder that can be accessed by that system.
4. Unzip Data File Integrator in a separate directory from Certificate Manager.

Configure the Database

This guide covers the installation of Certificate Manager in Microsoft SQL Server. After you confirm that you are using the correct database version, review the following sections.

Download the Microsoft JDBC Driver for SQL Server

The Microsoft JDBC Driver for SQL Server is used to enable communication with the Microsoft SQL Server database. The Certificate Manager software uses various versions of the JDBC Driver, depending on your Java version.

| Driver Version | JAVA Version | SQL Server Version |
| --- | --- | --- |
| sqljdbc42.jar | 7 | SQL Server 2012 |
| mssql-jdbc-7.0.0.jre8.jar | 8 | SQL Server 2016 |
| mssql-jdbc-9.4.0.jre8.jar | 9 | SQL Server 2019 |

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| Be sure to use the correct driver for the Java version used in your installation. This guide uses mssql-jdbc-7.0.0.jre8.jar in all examples, but this may not be correct for your installation. Depending upon your Java version, change the jreS.jar file. |

**Note: *mssql-jdbc-11.2.0.jre17.jar* and *mssql-jdbc-12.8.1.jre11.jar* are recommended for Certificate Manager 2.2.6.0 version**

To download the driver:

1. Open a browser and go to the [Microsoft](http://www.microsoft.com/) web site.
2. In the search field, enter Microsoft JDBC Driver 7.0.0.
3. Select the article containing the JDBC download.
4. Click Download and select the .exe file.

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| The executable contains both versions of the driver. |

1. Click Next.
2. If the file does not automatically download, save the file to a temporary location on your hard drive.
3. Run the executable you downloaded to extract a copy of mssql-jdbc-7.0.0.jre8.jar.
4. Make a note of the location of mssql-jdbc-7.0.0.jre8.jar because you will use this later during the installation.

Create the Database

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| From Certificate Manager version 2.2.6.0 onwards we need to use SqlServer 2019 & SqlServer 2022Set Mixed Mode Authentication in Microsoft SQL Server before you run the script below. |

Create the required database and database user:

1. Go to the following directory where you unzipped the Certificate Manager software: Docs/database-creation-scripts/sql-server.
2. Copy CreateSqlServerUserAndDatabase.bat, and then insert it in a working directory on the server that is hosting Microsoft SQL Server.
3. Double-click CreateSqlServerUserAndDatabase.bat.
4. To accept the default values in square brackets [ ], press ENTER, or type your own values:

| Prompt | Description |
| --- | --- |
| Enter the name or IP address of the server hosting SQL Server | Enter the name of the system hosting SQL Server. |
| Enter the SQL Server instance name (leave blank for a default instance) [null] | Leave blank for a default instance. |
| Use WINDOWS authentication during database creation [N]? | If you enter y, Windows authentication is used during database creation, and you skip the following two prompts. If you enter n (default), the next two prompts ask you to enter the user name and password of a user with database creation privileges. |
| Enter the name of the user with System Administrator privileges that will create the databases [sa]: | Enter a user with sufficient permissions to create databases (the sysadmin or dbcreate roles). The default is sa. |
| Enter the password for that user [Password1]: | Replace Password1 with the password of the user specified above. |
| Enter the path to your preferred SQL Server datafile directory: | Enter the full directory path to the datafile directory.   |  | | --- | | If the directory does not exist, an error message will appear. Either create the directory and try again, or enter a different path and try again. | |
| Enter the name of the SQL Server Certificate Manager database to be created [CERTMGR]: | Enter a name for the Certificate Manager database. The default is CERTMGR. |
| Enter the name of the LOGIN user to associate with this database [certmgr]: | Enter a name for the login user associated with the Certificate Manager database. |
| Enter the name of the user to associate with this database [certmgr]: | Enter a user to be granted permissions on the Certificate Manager database. |
| Enter the database password for this user in the Certificate Manager database [certmgr]: | Enter the password for the Certificate Manager database user. |

When the script finishes, press ENTER.Configure JBoss**From Certificate Manager version 2.2.6.0 onwards we need to use JBOSS 8.**

When JBoss is installed and ready for Certificate Manager configuration, complete the following:

Set Environment Variables 22

Configure JDBC in JBoss 23

Configure Memory 23

Set SERVER\_OPTS Parameters 25

Edit standalone.xml 26

Install Logback Module 36

JBossTo deploy Certificate Manager:Start JBoss by executing standalone.sh or standalone.bat in the following directory:JBOSS\_HOME/binGo to the WarFiles directory where you unzipped the Certificate Manager software.Copy installer.war, and then paste it into JBOSS\_HOME/standalone/deployments.Open a browser and check the status at the installation URL (http://<host>:<port>/installer). The initial installation may take a few minutes and is finished when you see the notification installer ok in the browser window.Return to the WarFiles directory where you unzipped the Certificate Manager software, and copy the following files: tax-certificate-manager-app.waruser-management-app.warcm-soap-service-app.warcontent-management-app.warInsert these additional .war files into JBOSS\_HOME/standalone/deployments/, and wait until you see \*.deployed files for each .war file in the directory.Open a browser and go to the Certificate Manager Login page (http://<host>:<port>/tax-certificate-manager-app).Log on to Certificate Manager using the built-in administrative user: User name: installerPassword: passwordRemain in Certificate Manager, and go to the instructions in Post-Installation Tasks (page 1). 38

Set Environment Variables

Create the following environment variables:

JBoss

Create these JBoss environment variables and point them to the top level of your JBoss Enterprise directory structure (for example, /jboss-eap-6.3):

* JBOSS\_HOME
* EAP\_HOME

|  |
| --- |
| Do not include a trailing slash. |

Java

Ensure that you have a JAVA\_HOME variable pointing to the Java installation directory.

Configure JDBC in JBoss

Copy the mssql-jdbc-7.0.0.jre8.jar file you located in Download the Microsoft JDBC Driver for SQL Server (page 17)), and then paste it into the following directory:

JBOSS\_HOME/standalone/deployments

Configure Memory

Set memory for Certificate Manager by editing the following JBoss file:

JBOSS\_HOME/bin/standalone.conf.bat

Use the values in the table as a guide, and see the example below.

| JAVA Option | Value | Description |
| --- | --- | --- |
| -Xms | 512m | This is the recommended starting memory allocation in megabytes.  Increase this value if your loads require more memory. |
| -Xmx | 1024m | This is the recommended maximum memory allocation in megabytes.  Increase this value if your loads require more memory. |

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| The example below spans multiple lines to fit on the page. Ensure your updated entries remain on a single line. |

In standalone.conf.bat, find the original line containing JAVA\_OPTS=, and then update the line with the values from the table above:

Original

set "JAVA\_OPTS=-Xms1G -Xmx1G -XX:MaxPermSize=256M"

Updated

set "JAVA\_OPTS=-Xms512m -Xmx1024m"

Set SERVER\_OPTS Parameters

Set SERVER\_OPTS parameters for Certificate Manager by editing the following JBoss file:

JBOSS\_HOME/bin/standalone.bat

Use the values in the table as a guide, and see the examples below.

| Parameter | Value | Description |
| --- | --- | --- |
| SERVER\_OPTS= | -Dtcm.default\_schema=certmgr-Ddetermination.default\_schema=sbxtax  -Dlogback.configurationFile= ../standalone/configuration/logback.xml  -Dhibernate.dialect=com.thom sonreuters.ositax.content management.common.util.CustomSQL ServerDialect | Replace certmgr with your Certificate Manager schema name, and replace sbxtax with your Determination tax schema name. |

|  |
| --- |
| The example below spans multiples lines to fit on the page. Keep your entry on a single line. |

In standalone.sh, find the original line containing SERVER\_OPTS=, and then update the line with the values in bold. The example below uses certmgr and sbxtax:

Original

set "SERVER\_OPTS=%\*"

Updated

set "SERVER\_OPTS=%\* -Dtcm.default\_schema=certmgr -Ddetermination.default\_schema=sbxtax -Dlogback.configurationFile=../standalone/configuration/logback.xml -Dhibernate.dialect=com.thomsonreuters.ositax.contentmanagement.common.util.CustomSQLServerDialect"

For Java17

JBOSS 8 doesn’t support Logback.

set “SERVER\_OPTS=%\* -Dtcm.default\_schema=certmgr -Ddetermination.default\_schema=sbxtax -Dhibernate.dialect=com.thomsonreuters.ositax.contentmanagement.common.util.CustomSQLServerDialect"

Edit standalone.xml

Complete the following changes in the JBoss file standalone.xml:

[Set Log Level](#736757105)

Set Logging Provider (page 27)

Change JBoss Ports (page 29)

Create Data Sources (page 30)

Remove Subsystem Setting (page 35)

Set Log Level

Change the default log level:

1. Go to the following directory: JBOSS\_HOME/standalone/configuration
2. Open standalone.xml in a text editor.
3. Find the section that starts with <root-logger>.
4. Change the level to the following: <level name="ERROR"/>.
5. Remain in the file, and then continue to the next section.

Set Logging Provider

Set slf4j as the logging provider:

1. Locate the final </extensions> tag.
2. Insert the following snippet following </extensions>:

|  |
| --- |
| Keep the content of the following code sample on the same line. |

<system-properties>

<property name="org.jboss.logging.provider" value="slf4j" />

</system-properties>

1. Remain in the file, and then continue to the next section.

Change JBoss Ports

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| --- |
| Skip this step if you are not running other ONESOURCE products in JBoss on this server. |

If you are running other ONESOURCE products in a separate JBoss instance on the same server, change your ports for Certificate Manager to avoid conflicts. The ports to change are all in standalone.xml.

The table below has ports that could conflict with other ONESOURCE products:

| port Name | Alternative Port Number Examples |
| --- | --- |
| socket-binding name="ajp" | port="8019" |
| socket-binding name="http" | port="8088" |
| socket-binding name="https" | port="8444" |
| socket-binding name="remoting" | port="7777" |

Remain in standalone.xml, and continue to the next section.

Create Data Sources

Create data sources by inserting ONESOURCE snippets in standalone.xml and then editing the values.

Insert Data Source Snippets

Use the data source snippets from the Certificate Manager .zip file:

1. Go to the following directory where you unzipped the Certificate Manager software:  
   Docs/application-server-files/jboss
2. Open certificate-manager-data-source-mssql-jboss.txt in a text editor.
3. Copy all the data source snippets (the entire contents of the file).
4. In standalone.xml, insert the data source snippets immediately above the closing tag </datasources>.
5. Save standalone.xml and remain in the file.
6. Complete the steps in the next sections for editing each data source:  
    Edit Tax Certificate Manager Data Source (page 30)  
    Edit User Management Service Data Source (page 32)  
    Edit Content Management Service Data Source (page 34)

Edit Tax Certificate Manager Data Source

In standalone.xml, find the <datasource> element that contains jdbc/TaxCertificateManagerDataSource.

<datasource jndi-name="java:/jdbc/TaxCertificateManagerDataSource" pool-name="TaxCertificateManagerDataSource" enabled="true" use-java-context="true">

<connection-url>jdbc:sqlserver://host:port;databaseName=database</connection-url>

<driver>mssql-jdbc-7.0.0.jre8.jar</driver>

<security>

<user-name>user name</user-name>

<password>password</password>

</security>

<validation>

<valid-connection-checker class-name="org.jboss.jca.adapters.jdbc.extensions.mssql.MSSQLValidConne

ctionChecker"/><br /><exception-sorter class-name="org.jboss.resource.adapter.jdbc.vendor.MSSQLExceptionSorter"/>

</validation>

</datasource>

**Note:**

1. From Certificate Manager version 2.2.6.0 onwards we need to add ‘encrypt=true’ and ‘trustServerCertificate=true’ as below:

*<connection-url>jdbc:sqlserver://host:port;databaseName=name;encrypt=true;trustServerCertificate=true</connection-url>*

1. mssql-jdbc-11.2.0.jre17.jar and mssql-jdbc-12.8.1.jre11.jar are recommended for Certificate Manager 2.2.6.0 version

**Example:** *<driver>mssql-jdbc-11.2.0.jre17.jar</driver>*

Change the values in the snippet that correspond to the elements in jdbc/TaxCertificateManagerDataSource as shown in the table below:

| Element | Description |
| --- | --- |
| <connection-url>jdbc:sqlserver://host:port;databaseName=database;</connection-url> | Replace the following with values for your implementation:   * host: The name of the system hosting the Certificate Manager database. * port: The Certificate Manager database port (default 1433). * database: The name of the Certificate Manager database. |
| <user-name>user name</user-name> | Replace user name with the Certificate Manager database user name (for example, certmgr). |
| <password>password</password> | Replace password with the Certificate Manager database user password (for example, certmgr). |

Save standalone.xml, and remain in the file to complete additional edits in the next section.

Edit User Management Service Data Source

|  |
| --- |
| This data source points to the Determination database, not to the Certificate Manager database. |

In standalone.xml, find the <datasource> element that contains jdbc/UserManagementServiceDataSource.

<datasource jndi-name="java:/jdbc/UserManagementServiceDataSource" pool-name="UserManagementServiceDataSource" enabled="true" use-java-context="true">

<connection-url>jdbc:sqlserver://host:port;databaseName=database</connection-url>

<driver>mssql-jdbc-7.0.0.jre8.jar</driver>

<security>

<user-name>user name</user-name>

<password>password</password>

</security>

<validation>

<valid-connection-checker class-name="org.jboss.j

ca.adapters.jdbc.extensions.mssql.MSSQLValidConnectionChecker"/>

<exception-sorter class-name="org.jboss.resource.adapter.jdbc.vendor.MSSQLExceptionSorter"/>

</validation>

</datasource>

**Note:**

1. From Certificate Manager version 2.2.6.0 onwards we need to add ‘encrypt=true’ and ‘trustServerCertificate=true’ as below:

*<connection-url>jdbc:sqlserver://host:port;databaseName=name;encrypt=true;trustServerCertificate=true</connection-url>*

1. mssql-jdbc-11.2.0.jre17.jar and mssql-jdbc-12.8.1.jre11.jar are recommended for Certificate Manager 2.2.6.0 version

**Example:** *<driver>mssql-jdbc-11.2.0.jre17.jar</driver>*

Change the values in the snippet that correspond to the elements in jdbc/UserManagementServiceDataSource as shown in the table below:

| Element | Description |
| --- | --- |
| <connection-url>jdbc:sqlserver://host:port;databaseName=database;</connection-url> | Replace the following with values for your implementation:   * host: The name of the system hosting the Determination database. * port: The Determination database port (default 1433). * database: The name of the Determination database. |
| <user-name>user name</user-name> | Replace user name with the user name of the Determination Tax schema (for example, sbtax). |
| <password>password</password> | Replace password with the password of the Determination Tax schema (for example, sbtax). |

Save standalone.xml, and remain in the file to complete additional edits in the next section.

Edit Content Management Service Data Source

|  |
| --- |
| This data source points to the Determination database, not to the Certificate Manager database. |

In standalone.xml, find the <datasource> element that contains jdbc/ContentManagementServiceDataSource.

<datasource jndi-name="java:/jdbc/ContentManagementServiceDataSource" pool-name="ContentManagementServiceDataSource" enabled="true" use-java-context="true">

<connection-url>jdbc:sqlserver://host:port;databaseName=database</connection-url>

<driver>mssql-jdbc-7.0.0.jre8.jar</driver>

<security>

<user-name>user name</user-name>

<password>password</password>

</security>

<validation>

<valid-connection-checker class-name="org.jboss.jca.adapters.jdbc.extensions.mssql.MSSQLValidConnectionChecker"/>

<exception-sorter class-name="org.jboss.resource.adapter.jdbc.vendor.MSSQLExceptionSorter"/>

</validation>

</datasource>

**Note:**

1. From Certificate Manager version 2.2.6.0 onwards we need to add ‘encrypt=true’ and ‘trustServerCertificate=true’ as below:

*<connection-url>jdbc:sqlserver://host:port;databaseName=name;encrypt=true;trustServerCertificate=true</connection-url>*

1. mssql-jdbc-11.2.0.jre17.jar and mssql-jdbc-12.8.1.jre11.jar are recommended for Certificate Manager 2.2.6.0 version

**Example:** *<driver>mssql-jdbc-11.2.0.jre17.jar</driver>*

Change the values in the snippet that correspond to the elements in jdbc/ContentManagementServiceDataSource as shown in the table below:

| Element | Description |
| --- | --- |
| <connection-url>jdbc:sqlserver://host:port;databaseName=database;</connection-url> | Replace the following with values for your implementation:   * host: The name of the system hosting the Determination database. * port: The Determination database port (default 1433). * database: The name of the Determination database. |
| <user-name>user name</user-name> | Replace user name with the user name of the Determination Tax schema (for example, sbtax). |
| <password>password</password> | Replace password with the password of the Determination Tax schema (for example, sbtax). |

Save standalone.xml, and remain in the file to complete additional edits in the next section.

Remove Subsystem Setting

1. Remove the subsystem setting in standalone.xml:
2. Locate and remove the following three lines:

<subsystem xmlns="urn:jboss:domain:jpa:1.1">

<jpa default-datasource="" default-extended-persistence-inheritance="DEEP"/>

</subsystem>

Save and close standalone.xml

Install Logback Module

Note: Skip this section for CM 2.2.6.0 as JBOSS 8 doesn’t support LOGBACK

Complete the following steps to install the logback module:

Insert Logback Module (page 36)

Add Dependencies (page 36)

Insert Logback File (page 37)

Insert Logback Module

1. Create the following directory path in JBoss:  
   JBOSS\_HOME/modules/system/layers/base/ch/qos/logback/main
2. Go to the following directory where you unzipped the Certificate Manager software:  
   Docs/application-server-files/jboss/logback/main
3. Copy module.xml, logback-classic-1.1.2.jar, and logback-core-1.1.2.jar.
4. Paste all three files into your new JBoss directory.
5. Go to the following directory where you unzipped the Certificate Manager software:  
   Docs/application-server-files/jboss/
6. Copy logback.xml, and then paste it into the same directory as module.xml, logback-classic-1.1.2.jar, and logback-core-1.1.2.jar.

Add Dependencies

1. Go to the following directory in JBoss:  
   JBOSS\_HOME/modules/system/layers/base/org/jboss/logging/main/
2. Open module.xml in a text editor.
3. Replace the <dependencies> block with the following:  
   <dependencies>  
   <module name="org.slf4j"/>  
   <module name="ch.qos.logback"/>  
   </dependencies>
4. Save and close the file.
5. Change to the following directory:  
   JBOSS\_HOME/modules/system/layers/base/org/slf4j/main/
6. Open module.xml in a text editor.
7. Replace the <dependencies> block with the following:  
   <dependencies>  
   <module name="ch.qos.logback"/>  
   </dependencies>
8. Save and close the file.

Insert Logback File

1. Go to the following directory where you unzipped the Certificate Manager software:  
   Docs/application-server-files/jboss/
2. Copy logback.xml
3. Paste logback.xml into the following directory:  
   JBOSS\_HOME/standalone/configuration

For Java 17

Insert jakarta.jws-api-3.0.0.redhat-00002 File

Please download the jakarta.jws-api-3.0.0.redhat-00002.jar from maven site.

After downloading completed. Please create a folder like below in jboss 8

1. Create a jws folder in this path jboss-eap-8.0\modules\system\layers\base\jakarta\
2. Again, Create api folder in this path jboss-eap-8.0\modules\system\layers\base\jakarta\jws\
3. Again, Create a main folder in this path jboss-eap-8.0\modules\system\layers\base\jakarta\jws\api

Finally, please copy the jakarta.jws-api-3.0.0.redhat-00002 jar in the main folder and create module.xml file with below details.

<!--

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~ distribution for a full listing of individual contributors.

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~ Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA

~ 02110-1301 USA, or see the FSF site: http://www.fsf.org.

-->

<module name="jakarta.jws.api" xmlns="urn:jboss:module:1.9">

<resources>

<resource-root path="jakarta.jws-api-3.0.0.redhat-00002.jar"/>

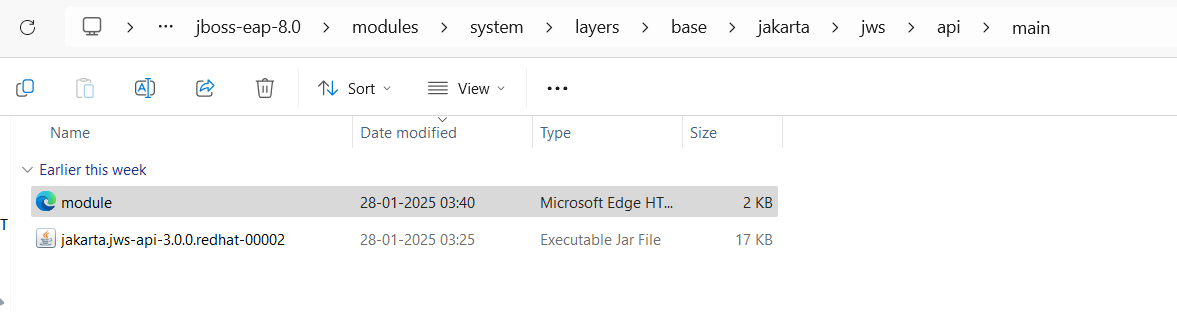
</resources>

<dependencies>

<module name="javax.api"/>

</dependencies>

</module>



|  |
| --- |
| JBoss  To deploy Certificate Manager:   1. Start JBoss by executing standalone.sh or standalone.bat in the following directory: JBOSS\_HOME/bin 2. Go to the WarFiles directory where you unzipped the Certificate Manager software. 3. Copy installer.war, and then paste it into JBOSS\_HOME/standalone/deployments. 4. Open a browser and check the status at the installation URL (http://<host>:<port>/installer). The initial installation may take a few minutes and is finished when you see the notification installer ok in the browser window. 5. Return to the WarFiles directory where you unzipped the Certificate Manager software, and copy the following files:    * tax-certificate-manager-app.war    * user-management-app.war    * cm-soap-service-app.war    * content-management-app.war 6. Insert these additional .war files into JBOSS\_HOME/standalone/deployments/, and wait until you see \*.deployed files for each .war file in the directory. 7. Open a browser and go to the Certificate Manager Login page (http://<host>:<port>/tax-certificate-manager-app). 8. Log on to Certificate Manager using the built-in administrative user:    * User name: installer    * Password: password 9. Remain in Certificate Manager, and go to the instructions in Post-Installation Tasks (page 39). |

Post-Installation Tasks

After you finish the application deployment, complete the tasks in the following sections:

Certificate Manager (page 39)

Determination (page 42)

Additional Configurations (page 49)

Data File Integrator (page 50)

Certificate Manager

The following configurations require you to be logged on to Certificate Manager. If you are logged on, continue with General Configuration (page 39).

If you have not logged on yet, complete the following:

1. Open a browser and go to the Certificate Manager logon page (http://<host>:<port>/tax-certificate-manager-app).
2. Log on to Certificate Manager using the built-in administrative user:
   * User name: installer
   * Password: password

General Configuration

On the System Configuration page, click General Configuration, and then complete the following settings that affect connectivity and validation:

| Field | Description |
| --- | --- |
| Determination Base URL | Enter the URL of the Determination instance you want to connect to Certificate Manager. Use the following format: http://<host>:<port>/sabrix/services |
| Connector Base URL | |  | | --- | | Leave this field blank if you are doing a standard installation where all the services of Certificate Manager run in the same web container or application server instance. |   Connector Base URL is the location of the User Management Service that enables Certificate Manager users to use Determination roles. Only change this if you are doing a custom installation where you deploy user-management-app.war in a separate instance: http://<host>:<port>/user-management-app/services/ |
| Content Service Base URL | |  | | --- | | Leave this field blank if you are doing a standard installation where all the components of Certificate Manager run in the same web container or application server instance. |   Content Service Base URL is the location of the Content Management Service that provides tax content to Certificate Manager. If you are doing a custom installation where you deploy content-management-app.war in a separate instance, insert the URL for that instance using this format: http://<host>:<port>/content-management-app/services/contentManagementService/ |
| Content Management Password | This password controls access to tax content information, such as lists of states.   |  | | --- | | You do not need to change this unless you want to change the default encrypted password. To change this password, see "Changing the Content Management Password" in the Help documentation. | |
| Enable SOAP Logging | Select this option to add SOAP messages to Certificate Manager logs. Use this for troubleshooting SOAP connections to other software, such as to Determination. |
| Form Validation | Select Enable Form Validation if you want Certificate Manager to validate your entries for certificates. |
| Google Analytics | Select Enable Google Analytics to help Thomson Reuters improve your experience with Certificate Manager. Ensure that a port is open in your firewall that allows incoming and outgoing network traffic to the site [google.com/analytics](http://google.com/analytics). |

Email Configuration

Click Email Configuration to expand that section, and then complete the fields for sending notifications to your customers about their certificates.

|  |
| --- |
| If you are unsure about the correct email settings, insert dummy values and skip the email test. |

1. Complete each of the fields in the following table:

| Field | Required | Description |
| --- | --- | --- |
| Host Name | Yes | Enter the name of the computer hosting your email server. |
| User Name | Yes | Enter the user name for the email account used to send notifications. |
| Sender Name | Yes | Enter the name of the sender of the email notification, for example, Avery Smith. |
| Email Server Port | Yes | Enter the number of the outgoing email port (SMTP). |
| Password | Yes | Enter the password for the email user. |
| Sender Email Address | Yes | Enter the email address of the sender; for example, avery@acme.com. |

1. Click Test email configurations.
2. To test your configuration, enter a valid email address.
3. Click Send.
4. When you finish the email test, click Save System Configuration in the bottom left.

Remove the Installer

Return to the file system and complete the following:

1. Go to JBOSS\_HOME/standalone/deployments.
2. Delete the following files:
   * JBOSS\_HOME/standalone/deployments/installer.war.deployed
   * JBOSS\_HOME/standalone/deployments/installer.war

Determination

Complete the following configurations directly in Determination. Go to your instance (http://<host>:<port>/sabrix), and log on as a user with administrative privileges.

Determination Roles

Certificate Manager users log on using their Determination user names and passwords, but they use special roles for Certificate Manager. Complete the steps in the sections below for Certificate Manager roles.

Creating New Roles

|  |
| --- |
| Skip this task if you are using Determination 5.7.0.0 or later. |

Certificate Manager requires four new Determination roles shown in the following tables. Each table indicates the name, description, application, and permissions for the role. Instructions for adding each role are below the tables.

| ROLE: Certificate Manager Admin | | | | |
| --- | --- | --- | --- | --- |
| DESCRIPTION: Full access to the entire Certificate Manager application and required Determination web services. | | | | |
| Application | Create | Modify | Delete | View |
| Home |  |  |  | X |
| Display Error |  |  |  | X |
| Company Data |  |  |  | X |
| Change Password | X | X | X | X |
| Web Services |  |  |  | X |
| Web Services: Company Service | X | X | X | X |
| Web Services: Customer Service | X | X | X | X |
| Web Services: Exemption Certificate Service | X | X | X | X |
| Web Services: User Service | X | X | X | X |

| ROLE: Certificate Manager Super User | | | | |
| --- | --- | --- | --- | --- |
| DESCRIPTION: Full access to Certificate Manager and required Determination web services, with the exception of Certificate Manager system configuration. | | | | |
| Application | Create | Modify | Delete | View |
| Home |  |  |  | X |
| Display Error |  |  |  | X |
| Company Data |  |  |  | X |
| Change Password | X | X | X | X |
| System |  |  |  | X |
| Web Services |  |  |  | X |
| Web Services: Company Service | X | X | X | X |
| Web Services: Customer Service | X | X | X | X |
| Web Services: Exemption Certificate Service | X | X | X | X |
| Web Services: User Service | X | X | X | X |

| ROLE: Certificate Manager User | | | | |
| --- | --- | --- | --- | --- |
| DESCRIPTION: Partial access to Certificate Manager for adding or editing customers and certificates and for running reports. | | | | |
| Application | Create | Modify | Delete | View |
| Home |  |  |  | X |
| Display Error |  |  |  | X |
| Company Data |  |  |  | X |
| Change Password | X | X | X | X |
| Web Services |  |  |  | X |
| Web Services: Company Service | X | X | X | X |
| Web Services: Customer Service | X | X | X | X |
| Web Services: Exemption Certificate Service | X | X | X | X |
| Web Services: User Service | X | X | X | X |

| ROLE: Certificate Manager View Only | | | | |
| --- | --- | --- | --- | --- |
| DESCRIPTION: Partial access to Certificate Manager for searching customers, contacts, or certificates; and for running reports. | | | | |
| Application | Create | Modify | Delete | View |
| Home |  |  |  | X |
| Display Error |  |  |  | X |
| Company Data |  |  |  | X |
| Change Password | X | X | X | X |
| Web Services |  |  |  | X |
| Web Services: Company Service |  |  |  | X |
| Web Services: Customer Service |  |  |  | X |
| Web Services: Exemption Certificate Service |  |  |  | X |
| Web Services: User Service |  |  |  | X |

Refer to the four tables above as you complete the following steps to add each role:

1. Go to Menu > System > Roles.
2. Click Actions > Add.
3. In Role, enter the name from the first role table above: Certificate Manager Admin.

|  |
| --- |
| Role names are case sensitive. |

1. In Description, enter the following from the first role table: Full access to Certificate Manager and required Determination web services.
2. Click Submit.
3. Select the boxes under Create, Modify, Delete, or View according to the permissions shown in the first role table above.
4. Click Submit when you finish selecting permissions.
5. Repeat steps 2 through 7 to create the three additional roles shown in the other three tables above.
6. When you finish, confirm you have the following roles and descriptions in Determination:

| Role | Description |
| --- | --- |
| Certificate Manager Admin | Full access to the entire Certificate Manager application and required Determination Web Services. |
| Certificate Manager Super User | Full access to Certificate Manager and required Determination web services, with the exception of Certificate Manager system configuration. |
| Certificate Manager User | Partial access to Certificate Manager for adding or editing customers and certificates, and for running reports. |
| Certificate Manager View Only | Partial access to Certificate Manager for searching customers, contacts, or certificates, and for running reports. |

Assigning the Certificate Manager Admin Role

Designate one of your Determination users as a Certificate Manager administrator to complete the remaining steps of the configuration.

|  |
| --- |
| Later, after you complete these initial configurations, you can grant Certificate Manager roles to additional Determination users. |

1. Go to Menu > System > Users, and then click on the user to whom you want to assign the administrative role.
2. Click the Roles tab.
3. Click Actions > Attach Role.
4. Complete the fields listed in the User Roles table below:

| Field | Description |
| --- | --- |
| Role | Select the role Certificate Manager Admin. |
| Company | Select a Determination company. |
| Start Date | Enter the date the role becomes active. Use the format MM/DD/YYYY; for example, 01/01/2021. |
| End Date | Enter the date the role becomes inactive (optional). Use the format MM/DD/YYYY; for example, 12/31/2021. |
| Is Cascading | Select if you want this user's role to apply to child companies. |

1. Click Submit.
2. Remember the name of this Determination user because you will use it in Additional Configurations (page 49).
3. Remain in Determination and continue to the next section.

Determination Configuration Parameter

|  |
| --- |
| Skip this step if you are using Determination 5.6.x. |

Determination versions 5.7.0.0 and later allow you to link directly to the Certificate Manager Login page:

1. Log on to Determination.
2. Go to Menu > System > Configuration.
3. Click Actions > Add.
4. Insert the following in the Name column: CERTIFICATE\_MANAGER\_URL.
5. Insert the Certificate Manager URL in the Value column (for example, http://<host>:<port>/tax-certificate-manager-app).
6. Click Submit.

Additional Configurations

The basic installation of Certificate Manager is complete, but you need to make some additional configurations in Determination and Certificate Manager before you can use the software.

Determination

* Assign Certificate Manager roles to Determination users
* Configure certificate settings for companies in Determination

Certificate Manager

* Import forms
* Configure custom properties
* Configure default certificate status
* Configure exempt reasons
* Disable installer user

The instructions for these settings are in the Certificate Manager Help:

1. Log on to Certificate Manager using the Determination user who has the role Certificate Manager Admin.
2. In the upper-right corner of any page, click Help.
3. In the upper-right corner of Help, click the hamburger menu:



1. Go to Introduction > Initial Configurations.
2. Complete all the tasks in the Initial Configurations topic.

Data File Integrator

If you plan to perform bulk uploads of customer and certificate data, see the overview topic about Data File Integrator in Certificate Manager Help:

1. In the upper-right corner, click the hamburger menu:



1. Go to Supporting Software > Data File Integrator.

Data File Integrator installation instructions are available in the [Knowledge Base](https://www.onesourceidtsupport.com/).