

IBM ECM System Monitor V5.5.5.x – Switch from H2 to MSSQL or DB2

Switching database type and keeping the data

April 15th, 2021

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Introduction

Overview

This guide describes in detail, how to switch the database to MSSQL or DB2 during the update process to ESM 5.5.5.0-003.

Disclaimer

The content of this document is based on ESM in version 5.5.5.0-003. The descriptions and guidelines in this document are for informational purposes only. Up-to-dateness, content completeness, appropriateness and validity for all possible scenarios cannot be guaranteed. All information is provided on an as-is basis. The author is not liable for any errors or omissions in this document or any losses, injuries and damages arising from its use.

If you are planning to setup or configure ESM or to adjust an existing installation, it is absolutely necessary to take into account current security whitepapers, release notes and announcements from the official IBM ECM System Monitor product documentation website.

Description

ESM supports the usage of MSSQL (2016, 2017 and 2019) and DB2 (V10.5, V11.1 and V11.5) as configuration and monitoring database since Version 5.5.5.0-003. To use one of these several steps have to be taken.

Steps to be taken

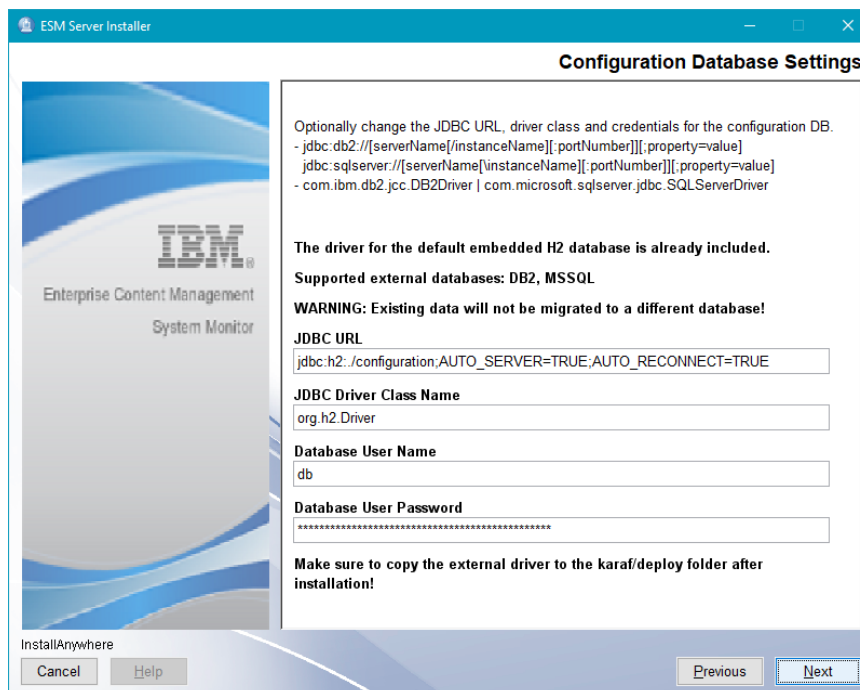
The following steps need to be performed to switch to a different database type during the update process.

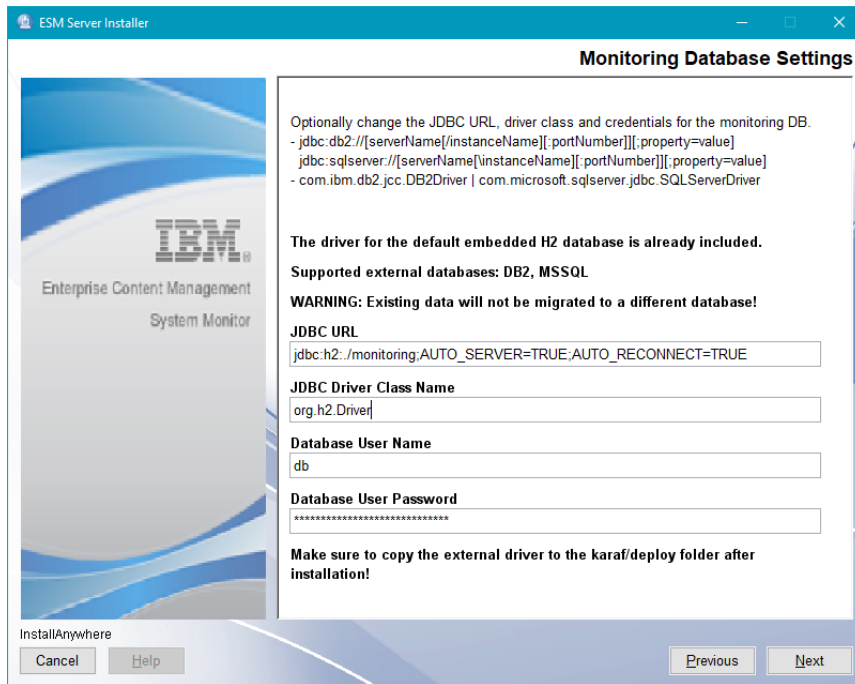
1. Prepare the new databases

Take a look into the installation guide of ESM 5.5.5.0-002 or later and follow the instructions to prepare the MSSQL or DB2 databases.

2. Update to ESM 5.5.5.0-003 or later – still use the H2 Database at this point

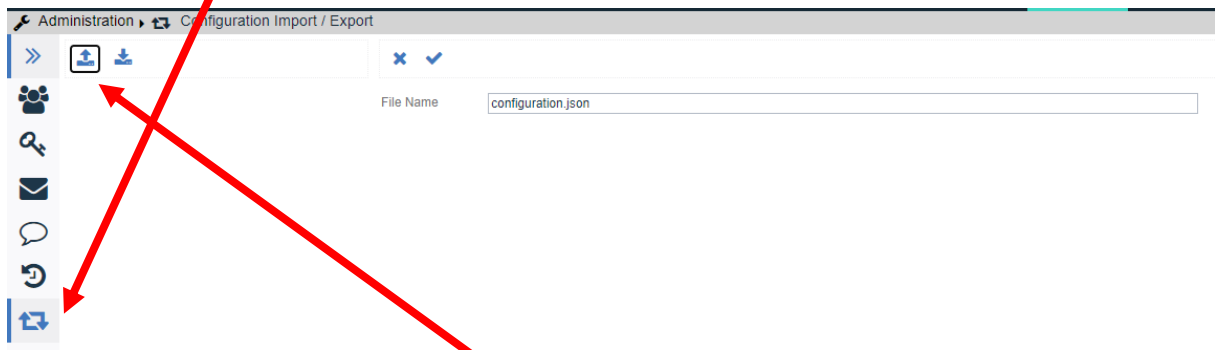
If not done yet, please update the ESM server software to version 5.5.5.0-003. Follow exactly the steps described in the readme document or in the Field Guide for upgrades. At the settings for the Configuration DB and Monitoring DB please keep the H2 settings at this time and complete the update process.





3. Export the configuration data and store it in a file

The whole configuration can be exported into a json file. For exporting the configuration switch to the administration dashboard and select the Configuration Export / Import feature from the sidebar on the left:



On the top you see two buttons. The left button is for the export. After clicking on it the export editor will open where you can specify a configuration file name. Once you click on the save button either the file is stored automatically to your preferred download directory or you are asked where the file should be stored. That depends on your browser setting.

4. Stop ESM Server and export the incidents and samples from monitoring database

Stop the ESM Software and open a command prompt or shell on the ESM Server. Switch to the folder <INSTALLATION>\karaf\server\dbmigration. The file dbmigration.jar is located here.

Execute the following command:

```
Shell: ../../../../jre/bin/java -jar dbmigration.jar  
CMD: ..\..\..\jre\bin\java -jar dbmigration.jar
```

Note: There are two usage options for the jar:

Usage:

```
-h, --help           Help page  
-s, --separator <arg>  Field separator for columns and values
```

If you do not specify the option `-s`, comma (,) will be used as default separator.

The exported files for the migration can be found in the folder <INSTALLATION>\karaf\server\export. You should have a total of 3 files one for each table:

- monitoring_INCIDENT_YYYY-MM-DD_HH-MM-SS.csv
- monitoring_INCIDENT_SAMPLEIDS_YYYY-MM-DD_HH-MM-SS.csv
- monitoring_SAMPLE_YYYY-MM-DD_HH-MM-SS.csv

Hand over the exported files to your DB administrator and keep a backup in a different location.

5. Re-Install the IF Version ESM 5.5.5.0-003 again – This time switch the DB settings

Start the update installer for ESM 5.5.5.0-003 again. Again please make sure to follow the readme. This time specify the connection details for your MSSQL or DB2 databases instead at this point.

The screenshot shows the 'Configuration Database Settings' window of the ESM Server Installer. The window title is 'ESM Server Installer'. On the left, there is a logo for IBM Enterprise Content Management System Monitor. The main content area contains the following text:

Optionally change the JDBC URL, driver class and credentials for the configuration DB.
- jdbc:db2://[serverName/[instanceName]][:portNumber][[:property=value]]
- jdbc:sqlserver://[serverName[instanceName]][:portNumber][[:property=value]]
- com.ibm.db2.jcc.DB2Driver | com.microsoft.sqlserver.jdbc.SQLServerDriver

The driver for the default embedded H2 database is already included.
Supported external databases: DB2, MSSQL
WARNING: Existing data will not be migrated to a different database!

JDBC URL
jdbc:h2:./configuration;AUTO_SERVER=TRUE;AUTO_RECONNECT=TRUE

JDBC Driver Class Name
org.h2.Driver

Database User Name
db

Database User Password

Make sure to copy the external driver to the karaf/deploy folder after installation!

At the bottom, there are buttons for 'Cancel', 'Help', 'Previous', and 'Next'. The text 'InstallAnywhere' is visible in the bottom left corner.

The screenshot shows the 'Monitoring Database Settings' window of the ESM Server Installer. The window title is 'ESM Server Installer'. On the left, there is a logo for IBM Enterprise Content Management System Monitor. The main content area contains the following text:

Optionally change the JDBC URL, driver class and credentials for the monitoring DB.
- jdbc:db2://[serverName/[instanceName]][:portNumber][[:property=value]]
- jdbc:sqlserver://[serverName[instanceName]][:portNumber][[:property=value]]
- com.ibm.db2.jcc.DB2Driver | com.microsoft.sqlserver.jdbc.SQLServerDriver

The driver for the default embedded H2 database is already included.
Supported external databases: DB2, MSSQL
WARNING: Existing data will not be migrated to a different database!

JDBC URL
jdbc:h2:./monitoring;AUTO_SERVER=TRUE;AUTO_RECONNECT=TRUE

JDBC Driver Class Name
org.h2.Driver

Database User Name
db

Database User Password

Make sure to copy the external driver to the karaf/deploy folder after installation!

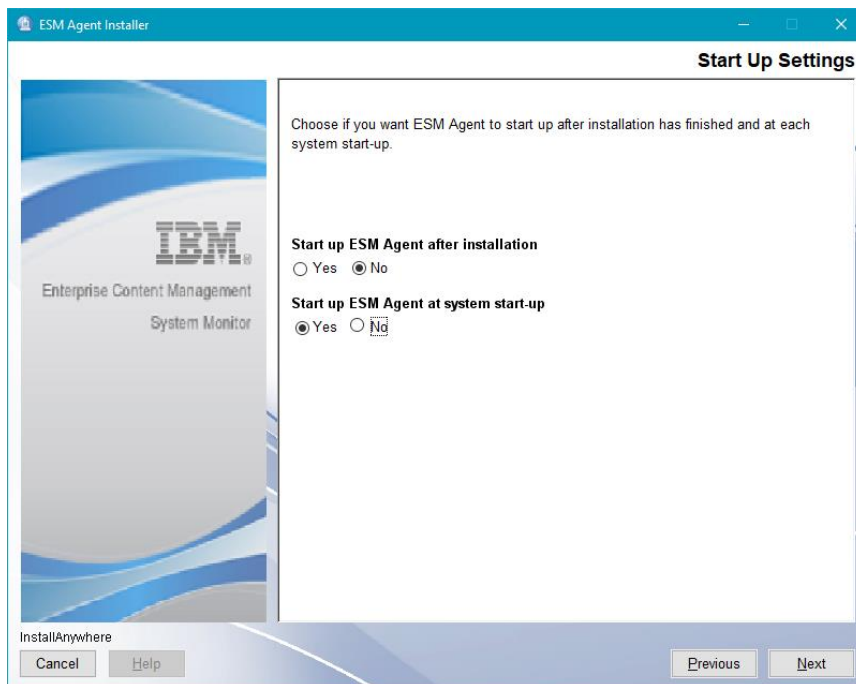
At the bottom, there are buttons for 'Cancel', 'Help', 'Previous', and 'Next'. The text 'InstallAnywhere' is visible in the bottom left corner.

Once asked, specify not to start the Software after the installation.

Background information: The Software should not be started after the installation as the next step (step 6) must be done before the software is started. This is mandatory because the databases are switched.

If you like you can also specify not to start it at the system start.

Note: In this case the service entry in Windows and the systemctl entry in Linux / Unix is not created.



Furthermore during the installation process you will be asked to copy the JDBC Driver jars to a certain location. Please follow the instructions.

6. Edit file for disabling automated basic monitoring

Note: This step is important.

Background information: Starting from ESM 5.5.5.0 there is a mechanism to automatically deploy basic probes (CPU, Memory and DiskSpace) for each newly connected agent. Since the DB was newly created, the already existing agents will behave like new agents at this time and the probes will be deployed once you start the ESM Server in the next step. The probes will continue to exist after the import process later on.

This is an unwanted behavior and can cause issues during the import process.

Edit the file “de.cenit.phoenix.server.services.agents.AgentBasicMonitoringInitializer.cfg”. The file is located in <Installation-Root>/karaf/etc of the ESM Server.

Change the content from

```
disable=false
```

to

```
disable=true
```

7. Start ESM Server - First time

Start the ESM Server Software. This can take some time, the database tables are created.

8. Stop the ESM after Login to console is possible

Open the ESM console and log in. You have to use admin/admin at this time, since the database was newly created. If the login was possible, please stop the ESM Server again. The database tables have now been created.

9. Import the incident and sample data

The operation can be performed with any db tool. You need to be connected to the database that should host the incidents and samples.

The following commands must be executed in the order as given below.

Example for DB2:

In this example DB2INST1 is the Schema Name of the Database and /home is the location of the files. DB2 command prompt is used.

```
db2 IMPORT FROM "/home/monitoring_INCIDENT_YYYY-MM-DD_HH-MM-SS.csv" OF DEL
MODIFIED BY DELPRIORITYCHAR COMMITCOUNT AUTOMATIC SKIPCOUNT 1 INSERT INTO
DB2INST1.INCIDENT

db2 IMPORT FROM "/home/monitoring_SAMPLE_YYYY-MM-DD_HH-MM-SS.csv" OF DEL
MODIFIED BY DELPRIORITYCHAR COMMITCOUNT AUTOMATIC SKIPCOUNT 1 INSERT INTO
DB2INST1.SAMPLE

db2 IMPORT FROM "/home/monitoring_INCIDENT_SAMPLEIDS_YYYY-MM-DD_HH-MM-
SS.csv" OF DEL MODIFIED BY DELPRIORITYCHAR COMMITCOUNT AUTOMATIC SKIPCOUNT
1 INSERT INTO DB2INST1.INCIDENT_SAMPLEIDS
```

DB2 is having a speciality:

https://www.ibm.com/support/knowledgecenter/en/SSEPGG_11.5.0/com.ibm.db2.luw.sql.ref.doc/doc/r0004200.html

https://www.ibm.com/support/knowledgecenter/en/SSEPEK_11.0.0/admin/src/tpc/db2z_rege neratemissingidentity.html

The sequence for the ID column in the table **INCIDENT** and **SAMPLE** must be set afterwards. The following is an example for the **INCIDENT** table – repeat it for the **SAMPLE** table:

```
Get latest MAX-ID: SELECT MAX (ID) + 1 FROM <schema>.INCIDENT;
```

```
Set new MAX-ID: ALTER TABLE <schema>.INCIDENT ALTER COLUMN ID RESTART WITH
<max-id>;
```

Example for MSSQL:

In this example /home is the location of the files.

```
BULK INSERT INCIDENT FROM '/home/monitoring_INCIDENT_YYYY-MM-DD_HH-MM-
SS.csv' WITH ( FORMAT = 'CSV', FIRSTROW=2 );

BULK INSERT SAMPLE FROM '/home/monitoring_SAMPLE_YYYY-MM-DD_HH-MM-SS.csv'
WITH ( FORMAT = 'CSV', FIRSTROW=2 );

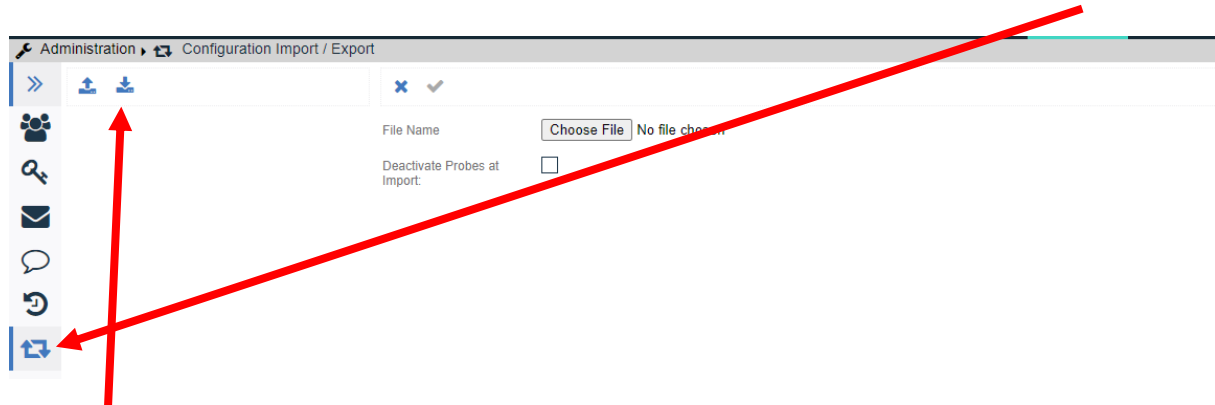
BULK INSERT INCIDENT_SAMPLEIDS FROM
'/home/monitoring_INCIDENT_SAMPLEIDS_YYYY-MM-DD_HH-MM-SS.csv' WITH ( FORMAT
= 'CSV', FIRSTROW=2 );
```

10. Start the ESM Server Software – Second time

Start the ESM Server Software. This can take some time. Wait until you are able to login. Still use admin/admin at this point.

11. Import the configuration data

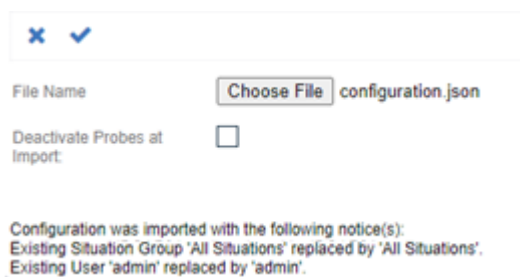
For importing the configuration to your new database, please switch to the administration dashboard of the ESM server and select the Configuration Export / Import on the left:



The right button is for the import. After clicking on it the import editor will open where you can select the configuration file that you want to import via the Choose File button. Also you can specify whether the probes should be deactivated or not after the import. Please have them activated (unchecked). Click on the Choose File button, the browsers file explorer opens and you can search for the correct file.

Click on the Save button at the top to start the import.

Note: The console is not showing any information until the import is completed, so please be patient and wait a moment. Information about the successful import is listed in the browser window.



If you were using a different password than admin for the admin account this was also restored at this point.

12. End

Your ESM server is back in business now. It is using the new databases and the Monitoring and Configuration DB are migrated. You can continue to upgrade your agents with the same version.