Informatica® Multidomain MDM
10.3

Installation Guide for IBM DB2 with Red Hat JBoss

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Preface

The *Multidomain MDM Installation Guide* is written for database administrators, system administrators, and implementers who are responsible for installing and setting up the Informatica® MDM Hub. This guide assumes that you have knowledge of operating systems, database environments, and your application server.

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CHAPTER 1

Installation Overview

This chapter includes the following topics:

Multidomain MDM Installation

Multidomain MDM is a master data management solution that enhances data reliability and data maintenance procedures. Multidomain MDM is also referred to as the MDM Hub. You can access the MDM Hub features through the Hub Console.

The MDM Hub consists of multiple components. You can install the MDM Hub in the graphical mode, the console mode, or the silent mode.

Core Components

The following table describes the core installation components:

Component	Description
MDM Hub Master Database	A schema that stores and consolidates business data for the MDM Hub. Contains the MDM Hub environment configuration settings, such as user accounts, security configuration, Operational Reference Store registry, and message queue settings. You can access and manage an Operational Reference Store from an MDM Hub Master Database. The default name of an MDM Hub Master Database is CMX_SYSTEM, but you can use a custom name.
Operational Reference Store	A schema that stores and consolidates business data for the MDM Hub. Contains the master data, content metadata, and the rules to process and manage the master data. You can configure separate Operational Reference Store databases for different geographies, different organizational departments, and for the development and production environments. You can distribute Operational Reference Store databases across multiple server machines. The default name of an Operational Reference Store is CMX_ORS.
Hub Server	A J2EE application that you deploy on an application server. The Hub Server processes data stored within the MDM Hub and integrates the MDM Hub with external applications. The Hub Server manages core and common services for the MDM Hub.

Component	Description
Process Server	A J2EE application that you deploy on an application server. The Process Server processes batch jobs such as load, recalculate BVT, and revalidate, and performs data cleansing and match operations. The Process Server interfaces with the cleanse engine that you configure to standardize and optimize data for match and consolidation.
Provisioning tool	A tool to build business entity models, and to configure the Entity 360 framework for Data Director. After you build business entity models, you can publish the configuration to the MDM Hub.
Informatica ActiveVOS ®	A business process management (BPM) tool that is required internally by the MDM Hub for processing data. Informatica ActiveVOS supports automated business processes, including change-approval processes for data. You can also use Informatica ActiveVOS to ensure that changes to master data undergo a review-and-approval process before inclusion in the best version of the truth (BVT) records. When you install ActiveVOS Server as part of the Hub Server installation, you install the ActiveVOS Server, ActiveVOS Console, and Process Central. Also, you install predefined MDM workflows, tasks, and roles.
Data Director (IDD)	A user interface to master and manage the data that is stored in the MDM Hub. In IDD, data is organized by business entities, such as customers, suppliers, and employees. Business entities are data groups that have significance for organizations.

Optional Components

The following table describes the optional installation components:

Component	Description
Resource Kit	Set of samples, applications, and utilities to integrate the MDM Hub into your applications and workflows. You can select the Resource Kit components that you want to install.
Informatica platform	An environment that comprises the Informatica services and Informatica clients that you use to cleanse and transfer source data to the MDM Hub. You can use Informatica platform instead of the cleanse functions available in the MDM Hub to cleanse data. When you install the Informatica platform as part of the Hub Server installation, you install the Data Integration Service, Model Repository Service, and Informatica Developer (the Developer tool).
Dynamic Data Masking	A data security tool that operates between the MDM Hub and databases to prevent unauthorized access to sensitive information. Dynamic Data Masking intercepts requests sent to databases and applies data masking rules to the request to mask the data before it is sent back to the MDM Hub.
Informatica Data Controls (IDC)	Applicable to Informatica Data Director (IDD) based on the subject area data model only. IDC is a set of user interface controls that expose the MDM Hub data in third-party applications that are used by business users.
Zero Downtime (ZDT) module	A module to ensure that applications have access to data in the MDM Hub during the MDM Hub upgrade. In a ZDT environment, you duplicate the databases: source databases and target databases. During the MDM Hub upgrade, the ZDT module replicates the data changes in the source databases to the target databases. To buy the ZDT module, contact your Informatica sales representative. For information about installing a zero downtime environment, see the *Multidomain MDM Zero Downtime Installation Guide* for the database.

Installation Topology

Before you install the MDM Hub, decide on the installation topology. Usually, infrastructure planners and Master Data Management solution architects determine on the topology to implement.

You can install the MDM Hub in multiple environments, such as development, test, and production. The requirements and priorities for each type of environment are unique. Therefore, the installation topology differs for each environment.

The following table describes the MDM Hub installation topologies that you can use:

Topology	Description
Standalone application server instance	All the MDM Hub components are installed on a standalone application server instance.
Multiple application server instances	The MDM Hub components are installed on multiple application server instances.
Application server cluster	The MDM Hub components are installed in an application server cluster.

For more information about installation topologies, see the *Multidomain MDM Infrastructure Planning Guide*.

Note: All the components of the MDM Hub implementation must have the same version. If you have multiple versions of the MDM Hub, install each version in a separate environment.

Installation Tasks

Complete the preinstallation tasks before you install the MDM Hub components. After the installation, complete the post-installation tasks.

To install the MDM Hub, perform the following tasks:

1. Complete the preinstallation tasks. To ensure that you can successfully run the installers for the Hub Server and the Process Server and create the Hub Store, complete the pre-installation tasks.

2. Create the MDM Hub Master Database. Create the MDM Hub Master Database before you install the Hub Server and the Process Server.

    Use the setup script provided with the MDM Hub distribution to create the MDM Hub Master Database.

3. Create the Operational Reference Store. Create Operational Reference Stores at any time after you complete the preinstallation tasks.

    Use the setup script provided with the MDM Hub distribution to create the Operational Reference Store.

4. Install the Hub Server. Use the MDM Hub installer to install the Hub Server.

5. Install the Process Server. Use the MDM Hub installer to install the Process Server.

6. Perform the post-installation configuration tasks. Test the database connections. To ensure that you can use the MDM Hub features, configure the Hub Server and the Process Server.

CHAPTER 2

Pre-Installation Tasks

This chapter includes the following topics:

Prepare for Installation

Before you install the MDM Hub, prepare for the installation.

The following table describes the preparatory tasks for the installation:

Task	Description
Read the Release Notes	Read the latest *Multidomain MDM Release Notes* for updates to the installation and upgrade process. **Important:** Some versions of application servers and databases have known limitations when running Multidomain MDM. Ensure that you perform all suggested workarounds.
Read the Product Availability Matrix	Read the Product Availability Matrix (PAM) for information about product requirements and supported platforms. You can access PAMs at https://network.informatica.com/community/informatica-network/product-availability-matrices.
Understand the MDM infrastructure and architecture plan	Acquire and understand the plan for the MDM infrastructure and architecture from the infrastructure planners or the MDM solution architects in your organization. For more information about infrastructure planning and MDM architecture, see the *Multidomain MDM Infrastructure Planning Guide*.
Download and extract the installer files	Download the installation files from the Informatica Electronic Software Download site to a directory on your machine. To extract the compressed files, use an extraction utility that also extracts empty folders. Download and extract the following installation files: - MDM Hub installer for the operating system - Database files - ActiveVOS Server installer for the operating system If you intend to install Informatica platform, download the following files: - Informatica platform server installation files for the operating system - Informatica platform client installation files

Task	Description
Verify license key	Verify that you have the license key, which is in an email message from Informatica. Copy the license key file to a directory accessible to the user account that installs the product. If you do not have a license key, contact Informatica Global Customer Support.
Create an installation documentation directory	Create a directory to store copies of installation files, such as the validation results, environment reports, database debug logs, and log files. For example, create the directory install_doc. To troubleshoot the installation, you can create an archive file of the installation documentation directory and send it to Informatica Global Customer Support for analysis.

Prepare the Environment

Before you install the MDM Hub, prepare the installation environment.

The following table describes the tasks you perform to prepare the environment for the installation:

Task	Description
Verify minimum system requirements	Verify that the machines meet the hardware and software requirements for the MDM Hub installation. The hardware requirements are dependent on the data, processing volumes, and business rules. To install the MDM Hub, the machines must meet the following minimum requirements: - Disk space. 4.9 GB - RAM for the development environment. 4 GB To verify the run-time physical memory requirements of the MDM Hub components, use the following formula: `Total run-time memory requirement for MDM Hub components = JDK JVM max heap size of the application server + operating system native heap size`
Install Java Development Kit (JDK)	Install a supported version of the JDK on the machine on which you want to install the MDM Hub. The JDK is not bundled with the MDM Hub installers. **Note:** Use the same Java version on the application server machines and on the machines on which you want to launch the Hub Console. If you want to install Informatica platform on HP-UX, install the supported version of the JDK on the HP-UX machine. The JDK is not bundled with the Informatica platform installer for HP-UX. The JDK is bundled with the Informatica platform installers for all other platforms.
Install Visual C++ Redistributable for Visual Studio 2015 on Windows only	On Windows systems, Multidomain MDM requires Visual C++ Redistributable for Visual Studio 2015 to support the name search feature and the matching feature.

Task	Description
Set environment variables	Set the environment variables for the MDM Hub installation. To use the correct JDK, set the following environment variables to point to the JDK directory: - JAVA_HOME. Required - PATH. Required - INFA_JDK_HOME. Optional. Required if you want to install Informatica platform on AIX or HP-UX. If you want to install Informatica platform with security enabled for the domain, set the INFA_TRUSTSTORE environment variable to point to the following directory: `<Informatica platform installation directory>/Client/clients/shared/security`
Set the operating system locale	Set the same operating system locale for the Hub Server, the MDM Hub Master Database, Operational Reference Store, and the Hub Console.
Set up the X Window System on UNIX	If you want to run the installer in graphical mode on UNIX, set up an X Window System. An X Window System is a graphics display server. For more information about setting up an X Window System, see the documentation for your operating system.
Disable access to the root welcome page for your application server	To improve security, disable access to the root welcome page for your application server. For instructions, see the documentation for your application server.
Disable insecure TLS cipher suites	To improve security, in the Java runtime environment that is used with Multidomain MDM, disable insecure TLS cipher suites. 1. Open the following file: `../jdk<version>/jre/lib//security/java.security` 2. Find the property `jdk.tls.disabledAlgorithms` and update the value to include the following list of insecure cipher suites: `jdk.tls.disabledAlgorithms = SSLv3, RC4, MD5withRSA, DH keySize < 1024, EC keySize < 224, DES40_CBC, RC4_40, 3DES_EDE_CBC, EDH-RSA-DES-CBC3-SHA, ECDHE-RSA-DES-CBC3-SHA, DES-CBC3-SHA` For more information about the property, see the documentation for your JDK.

For more information about product requirements and supported platforms, see the Product Availability Matrix on Informatica Network:
https://network.informatica.com/community/informatica-network/product-availability-matrices

Set Up the Database Environment

Before you create an MDM Hub Master Database and Operational Reference Store, set up the database environment.

To set up the database environment, perform the following tasks:

1. Install and configure IBM DB2.

2. Create a database and tablespaces.

3. Bind packages on the database server.

4. Create the ActiveVOS® schema.

Step 1. Install and Configure IBM DB2

You can install and configure IBM DB2 according to the instructions in the IBM DB2 documentation.

The following table describes the IBM DB2 installation and configuration tasks:

Tasks	Description
Install IBM DB2	Install the supported version of IBM DB2.
Install clients and utilities	Install the IBM DB2 client and utilities software to communicate with the MDM Hub and run the MDM Hub processes. On each machine where you want to run the Hub Server or Process Server, install the following software: - DB2 client - DB2 Java utilities for the DB2 client Ensure that you catalog the IBM DB2 database from each DB2 client.
Configure IBM DB2 drivers	To configure IBM DB2 drivers, copy the `db2jcc.jar` and `db2jcc_license_cu.jar` driver files from the source to the target directory: Source: `<IBM DB2 installation directory>/java` Target: `<MDM Hub distribution directory>/database/lib`
Create the MDM Hub schema users	Create users to access the following MDM Hub schemas: - MDM Hub Master Databases - Operational Reference Stores

Step 2. Create a Database and Tablespaces

After you install and configure IBM DB2, create and configure a database and tablespaces.

The following table describes the tablespaces that you require for the MDM Hub schemas:

Tablespace Name	Description
CMX_DATA	Default tablespace for the Operational Reference Store schema. Contains the metadata and user data of the MDM Hub.
CMX_INDX	Tablespace to contain indexes that the MDM Hub creates and uses.
CMX_TEMP	Tablespace to contain temporary tables that the MDM Hub creates and uses.
CMX_REPOS	Tablespace to contain the Operational Reference Store objects.
CMX_USER_TEMP	Temporary tablespace to contain operational temporary tables.
CMX_SYS_TEMP	Temporary tablespace for SQL operations.

Use one of the following procedures to create a database and tablespaces:

- Manually create the database and tablespaces
- Use a script to create the database and tablespaces

Manually Create a Database and Tablespaces

You can manually create a database and tablespaces. Ensure that you create the database with the compatibility vector turned on and with the `UTF-8 TERRITORY US` locale.

Set the DB2 Environment and DB2 Registry Variables

If you create the database manually, set the DB2 environment and DB2 registry variables that the MDM Hub requires.

Use the following commands to set the DB2 environment and DB2 registry variables:

```
db2set DB2CODEPAGE=1208
db2set DB2_COMPATIBILITY_VECTOR=
db2set DB2_DEFERRED_PREPARE_SEMANTICS=YES
db2set DB2_RESTORE_GRANT_ADMIN_AUTHORITIES=ON
db2set DB2_HASH_JOIN=YES
db2set DB2_ANTIJOIN=YES
db2set DB2_INLIST_TO_NLJN=NO
db2set DB2_SELECTIVITY=ALL
db2set DB2_SKIPINSERTED=YES
db2set DB2_SKIPDELETED=YES
db2set DB2_EXTENDED_OPTIMIZATION=ON,ENHANCED_MULTIPLE_DISTINCT,IXOR,SNHD
db2set DB2NTNOCACHE=ON
db2set DB2_REDUCED_OPTIMIZATION=REDUCE_LOCKING
```

Set the Database Manager Configuration for the Database Instance

You need to optimize the database manager configuration for the database instance.

Use the following commands to optimize the database manager configuration:

```
db2 update dbm cfg using MON_HEAP_SZ AUTOMATIC
db2 update dbm cfg using JAVA_HEAP_SZ 2048
db2 update dbm cfg using AGENT_STACK_SZ 256
db2 update dbm cfg using SHEAPTHRES 0
db2 update dbm cfg using INTRA_PARALLEL YES
```

Note: The values specified in the commands are minimum requirements for the MDM Hub.

Set Database Configuration Parameters

Set the configuration parameters for the database.

Use the following commands to set the database configuration parameters:

```
db2 update db cfg using LOCKLIST AUTOMATIC
db2 update db cfg using MAXLOCKS AUTOMATIC
db2 update db cfg using PCKCACHESZ 128000
db2 update db cfg using DBHEAP AUTOMATIC
db2 update db cfg using CATALOGCACHE_SZ 25000
db2 update db cfg using LOGBUFSZ 4096
db2 update db cfg using UTIL_HEAP_SZ 50000
db2 update db cfg using BUFFPAGE 250
db2 update db cfg using STMTHEAP AUTOMATIC
db2 update db cfg using APPLHEAPSZ AUTOMATIC
db2 update db cfg using APPL_MEMORY AUTOMATIC
db2 update db cfg using STAT_HEAP_SZ AUTOMATIC
db2 update db cfg using LOGFILSIZ 128000
db2 update db cfg using LOGPRIMARY 10
db2 update db cfg using LOGSECOND 200
db2 update db cfg using auto_reval deferred_force
db2 update db cfg using decflt_rounding round_half_up
db2 update db cfg using SHEAPTHRES_SHR AUTOMATIC
db2 update db cfg using DFT_DEGREE 1
```

Note: The values specified in the commands are minimum requirements for the MDM Hub.

Grant Privileges to SYSIBMADM Modules

You must grant privileges to UTL_DIR, UTL_FILE, and DBMS_SQL SYSIBMADM modules.

Use the following commands to grant privileges to modules:

```
GRANT EXECUTE ON MODULE SYSIBMADM.UTL_DIR TO PUBLIC WITH GRANT OPTION
GRANT EXECUTE ON MODULE SYSIBMADM.UTL_FILE TO PUBLIC WITH GRANT OPTION
GRANT EXECUTE ON MODULE SYSIBMADM.DBMS_SQL TO PUBLIC WITH GRANT OPTION
```

Define Buffer Pools for the Database Manager

Define the REPOS_POOL and CMX_POOL buffer pools.

Use the following commands to define buffer pools:

```
CREATE BUFFERPOOL REPOS_POOL IMMEDIATE SIZE 1500 PAGESIZE 32 K
CREATE BUFFERPOOL CMX_POOL IMMEDIATE SIZE 3000 PAGESIZE 32 K
```

Create Tablespaces

You need to create tablespaces that the MDM Hub schemas require.

Create the tablespaces in the following sequence:

1. CMX_DATA
2. CMX_INDX
3. CMX_REPOS
4. CMX_TEMP
5. CMX_USER_TEMP
6. CMX_SYS_TEMP

Use the following statements to create tablespaces for the MDM Hub schemas:

```
CREATE TABLESPACE CMX_DATA PAGESIZE 32 K
    MANAGED BY DATABASE USING ( FILE 'c:\dbhub9x\CMX_DATA\cmx_data01.dat' 500 M )
    EXTENTSIZE 16
    AUTORESIZE YES
    OVERHEAD 10.5
    PREFETCHSIZE 16
    BUFFERPOOL CMX_POOL

CREATE TABLESPACE CMX_INDX PAGESIZE 32 K
    MANAGED BY DATABASE USING ( FILE 'c:\dbhub9x\CMX_INDX\cmx_indx01.dat' 500 M )
    EXTENTSIZE 16
    AUTORESIZE YES
    OVERHEAD 10.5
    PREFETCHSIZE 16
    BUFFERPOOL CMX_POOL

CREATE TABLESPACE CMX_REPOS PAGESIZE 32 K
    MANAGED BY DATABASE USING ( FILE 'c:\dbhub9x\CMX_REPOS\cmx_repos01.dat' 500 M )
    EXTENTSIZE 16
    AUTORESIZE YES
    OVERHEAD 10.5
    PREFETCHSIZE 16
    BUFFERPOOL REPOS_POOL

CREATE TABLESPACE CMX_TEMP PAGESIZE 32 K
    MANAGED BY DATABASE USING ( FILE 'c:\dbhub9x\CMX_TEMP\cmx_temp01.dat' 500 M )
    EXTENTSIZE 16
    AUTORESIZE YES
    OVERHEAD 10.5
    PREFETCHSIZE 16
    BUFFERPOOL CMX_POOL
```

```
CREATE USER TEMPORARY TABLESPACE CMX_USER_TEMP PAGESIZE 32 K
    MANAGED BY DATABASE USING ( FILE 'c:\dbhub9x\USER_TEMP\cmx_user_temp01.dat' 500 M )
    EXTENTSIZE 16
    AUTORESIZE YES
    OVERHEAD 10.5
    PREFETCHSIZE 16
    BUFFERPOOL CMX_POOL

CREATE SYSTEM TEMPORARY TABLESPACE CMX_SYS_TEMP PAGESIZE 32 K
    MANAGED BY DATABASE USING ( FILE 'c:\dbhub9x\SYSTEM_TEMP\cmx_sys_temp01.dat' 500 M )
    EXTENTSIZE 16
    AUTORESIZE YES
    OVERHEAD 10.5
    PREFETCHSIZE 16
    BUFFERPOOL CMX_POOL
```

Optionally, to create tablespaces with the dropped table recovery feature enabled, add the following clause to the `CREATE TABLESPACE` statement:

```
DROPPED TABLE RECOVERY ON
```

Use a Script to Create a Database and Tablespaces

The MDM Hub distribution includes a script to create the database and associated tablespaces. To run the script, you need administrative privileges with write and execute permissions to the DB2 data directory.

On UNIX, before you create the database, update the `db2.storage.path` property in the `database.properties` file with the correct database storage path. The `database.properties` file is in the following directory:

```
<MDM Hub distribution directory>/database/bin/db2
```

1. Open a command prompt, and change to the following directory:

    ```
    <MDM Hub distribution directory>/database/bin
    ```

2. To create the database, run the following command:

    On UNIX. `./sip_ant.sh create_db`

    On Windows. `sip_ant.bat create_db`

3. Answer the prompts described in the following table:

Prompt	Description
Enter the database type (ORACLE, MSSQL, DB2)	Database type. Specify DB2.
Enter the database instance name [db2]	Name of the database instance. Default is `db2`.
Enter the database name [SIP97]	Name of the database. Default is `SIP97`.
Enter the database storage path [C: \DB2DATA]	Path to the directory where the database must be stored. Default is `C: \DB2DATA`. **Note:** On UNIX, accept the default value. The database storage path that you specify in the `database.properties` file will be used.

Prompt	Description
Enter the DBA user name [DB2ADMIN]	User name of the administrative user. Default is `DB2ADMIN`.
Enter the DBA password	Password of the administrative user.

The script creates the database and the following tablespaces:

- CMX_DATA
- CMX_INDX
- CMX_TEMP
- CMX_REPOS
- CMX_USER_TEMP
- CMX_SYS_TEMP

To verify that the database was created successfully, review the `sip_ant.log` file in the `<MDM Hub distribution directory>/database/bin` directory.

Step 3. Bind Packages on the Database Server

To ensure that the IBM DB2 client can connect to the database server to run DB2 commands, bind packages on the database server.

1. Open an IBM DB2 command window, and change to the following directory:

   `<IBM DB2 installation directory>/SQLLIB/bnd`

2. Connect to the database by running the following command:

   `db2 connect to <database name> user <database user> using <database user password>`

   Note: The database user must have the bind permission.

3. Run the following bind command:

   `db2 bind @db2cli.lst blocking all grant public sqlerror continue CLIPKG 10`

   The required packages are bound to the database server.

Step 4. Create the ActiveVOS Schema

If you want to install ActiveVOS, you need to create the ActiveVOS database schema. To create the schema, run the `create_bpm` script.

1. Open a command prompt and change to the following directory:

   `<MDM Hub distribution directory>/database/bin`

2. Run the following command:

   On UNIX. `./sip_ant.sh create_bpm`

   On Windows. `sip_ant.bat create_bpm`

3. Answer the prompts that appear.

   The prompt displays default text in brackets. Press **Enter** to use the default value and go to the next prompt.

Note: IBM DB2 data sources are case-sensitive. To avoid issues related to case-sensitivity, Informatica recommends that you use uppercase letters to define names, such as those for schemas, columns, and triggers.

Property	Description
Database Type	Type of database to use. For IBM DB2, specify `DB2`. The database type must be the same as the database type selected for the MDM Hub Master Database and the Operational Reference Stores.
ActiveVOS Database Host Name	Name of the machine that hosts the database.
ActiveVOS Database TCP/IP Port	Port number that the database listener uses.
ActiveVOS Database Name	Name of the database.
ActiveVOS Database Schema/User Name	User name of the ActiveVOS Server administrative user.
ActiveVOS User Password	Password of the administrative user.
DBA User Name	User name of the database administrative user.
DBA Password	Password of the administrative user.
ActiveVOS Tablespace Name	The name of the tablespace that contains the records that are involved in MDM workflows.

4. After you create the schema, review the `sip_ant.log` file in the following directory:

    `<MDM Hub distribution directory>/database/bin`

    The `sip_ant.log` file logs any errors that might occur when you run the `sip_ant` script to create the ActiveVOS database schema.

Set Up the Application Server Environment

You can install the MDM Hub in a JBoss cluster environment or on standalone JBoss instances. Install and configure JBoss according to the instructions in the JBoss documentation. Whether you install the MDM Hub in a JBoss cluster environment or on standalone JBoss instances, install the JBoss standalone configuration, and use the full profile of the configuration.

A JBoss cluster consists of one or more cluster nodes on one or more machines. Install and configure JBoss on all machines on which you want cluster nodes. In a cluster environment, ensure that the directory structure of the JBoss installations is the same on all the cluster nodes.

Note: Install the application server in the same time zone as the database server.

Configure Java Virtual Machines

To configure a Java Virtual Machine (JVM), set Java options by using the JAVA_OPTS environment variable.

You can set the Java options in the following file:

On UNIX. `<JBoss installation directory>/bin/standalone.conf`

On Windows. `<JBoss installation directory>\bin\standalone.conf.bat`

The following table describes the Java options settings:

Java Options	Description
-server	Results in a slower startup but subsequent operations are faster.
-Ddb2.jcc.charsetDecoderEncoder	Required to use the MDM Hub Sample Operational Reference Store. Enables the JDBC driver to return the Unicode replacement character (U+FFFD) in place of a sequence of bytes that is not a UTF-8 string. Set to `3`.
-Djava.net.preferIPv4Stack	Specifies whether Java uses Internet Protocol version 4 (IPv4). If the operating system uses Internet Protocol version 6 (IPv6), set to `true`.
-Djboss.as.management.blocking.timeout	Time in seconds to wait for JBoss to deploy. To ensure that JBoss does not fail to start, you can set the value to `5000`. Adjust the time period based on your environment. Default is `300`. If you do not configure the parameter, you might encounter a JBoss deployment timeout.
-Djavax.net.ssl.trustStore=<Security certificate key file path> -Djavax.net.ssl.trustStorePassword=<keystore password>"	Imports the security certificate. Required if you want to configure the HTTPS protocol for the MDM Hub communications and for the ActiveVOS communications with the MDM Hub. Before you configure the property, use the Java `keytool` command to generate a keystore and an alias. If you use a certificate chain, the alias of the end-user certificate must be the same as the application server host name.
-Djgroups.bind_addr	Interface on which JGroup must receive and send messages. Required in multinode or cluster environments. Ensure that each node binds to its own network interface.
-DFrameworksLogConfigurationPath	Path to the `log4j.xml` file.
-Dmdm.node.groupid	Specifies a group ID for Java Virtual Machines in the MDM Hub implementation. Required only if you want logical groupings of Hub Servers and Process Servers.
-Dfile.encoding -Dorg.apache.catalina.connector.URI_ENCODING	Required if you want to use Informatica Data Director and use REST APIs to search for records. Set both the Java options to `UTF-8` to ensure that you can find and save records that contain UTF-8 characters.

Java Options	Description
-Dorg.apache.coyote.http11.Http11Protocol.MAX_HEADER_SIZE	Maximum size of the HTTP headers, in bytes. The smart search requests might fail if the header size is low. Set to `16384`.
-Dtask.pageSize=<maximum number of tasks>	Specifies the maximum number of ActiveVOS tasks that are retrieved for each request. Default is `5000`. Increase the number if your environment has a large number of tasks.
-Dstricttransportsecurity.flag	Specifies whether web browsers must convert all attempts to access Informatica Data Director using the HTTP requests to the HTTPS requests instead. Set to `true`.
-Xms	Initial heap size. Set to `2048m`.
-Xmx	Maximum JVM heap size. Set to 4 GB or higher. For example, to set the `-Xmx` to `4096m`, use the following JAVA_OPTIONS environment variable setting: `set "JAVA_OPTIONS=-server ... -Xmx4096m"`
XX:+UseCodeCacheFlushing	Specifies whether the JVM disposes of compiled code when the code cache is full.
-XX:ReservedCodeCacheSize	JIT code cache size. To enhance the performance of the MDM Hub environment, set to `512m`.

Logical Grouping of Java Virtual Machine Example

By grouping Java Virtual Machines (JVMs), you get a logical group of Hub Servers and Process Servers. When you deploy the Hub Server and Process Server applications in a logical JVM group, all communication between the applications stays within the group. To group JVMs, you assign a group ID to each JVM in the MDM Hub environment.

Note: Process Server grouping is applicable to the cleanse and match process only. A Process Server that is enabled as a Zookeeper server and is enabled for smart search is available to all the groups for indexing and search processing.

The following table shows an example of logical JVM groups:

JVM Group	JVM	Hub Server	Process Server
Group1	JVM1	Yes	Yes
Group1	JVM4	-	Yes
Group2	JVM2	Yes	Yes
Group3	JVM3	-	Yes

For JVM1, add the following Java option in the startup script:

```
-Dmdm.node.groupid=Group1
```

For JVM2, add the following Java option in the startup script:

```
-Dmdm.node.groupid=Group2
```

For JVM3, add the following Java option in the startup script:

```
-Dmdm.node.groupid=Group3
```

For JVM4, add the following Java option in the startup script:

```
-Dmdm.node.groupid=Group1
```

After you configure the JVMs, and deploy the Hub Servers and Process Servers, the groups have the following characteristics:

- Group1 has two Process Servers, Group2 has one Process Server, and Group3 has one Process Server.

- All cleanse and batch calls stay in their own group with the exception of smart search. For example, any real-time call on the Hub Server in Group1 affects only the Group1 Process Servers (JVM1 and JVM4).

Configure Server Properties for the Full Profile

Configure the server properties for the full profile of the standalone mode in the `standalone-full.xml` file.

The `standalone-full.xml` file is in the following directory:

```
<JBoss installation directory>/standalone/configuration
```

The following table describes the server properties configuration for the full profile:

Configuration	Description
Transaction timeout	Ensures that the MDM Hub transactions complete. In the `subsystem` with the name `urn:jboss:domain:transactions:<n.n>`, set `default-timeout=3600` for the `coordinator-environment` element.

HTTPS protocol	Required if you want to configure the HTTPS protocol for the MDM Hub communications and for ActiveVOS communications with the MDM Hub.
	Note: Before you configure the HTTPS protocol, use the Java `keytool` command to generate a keystore and an alias. Note the key alias and keystore password that you create.
	To configure the HTTPS protocol, in the `subsystem` with the name `urn:jboss:domain:web:<n.n>`, add the following `connector` configuration:
	
	`<connector name="https" protocol="HTTP/1.1" scheme="https" socket-binding="https" secure="true">`
	`    <ssl name="ssl" key-alias="<Key alias>" password="<keystore password>" certificate-key-file="<Security certificate key file path>" protocol="TLSv1" verify-client="false"/>`
	`</connector>`

HornetQ Security	If HornetQ security is enabled for the JBoss server, disable it. In the `hornetq-server` element, set the `security-enabled` configuration to `false` as shown in the following example: `<security-enabled>`**`false`**`</security-enabled>`

Configuration	Description
Remoting-connector security	Configures remoting-connector security. To log in to the Hub Console from a remote machine, disable the remoting-connector security. In the `subsystem` with the name `urn:jboss:domain:remoting:<n.n>`, remove the `security-realm` attribute from the following `connector` configuration: ``` <connector name="remoting-connector" socket-binding="remoting" security-realm=<"security realm name">/> ```
Asynchronous handling of loggers	If the JBoss environment runs on Java 1.7, and you want to use Informatica Data Director, configure asynchronous handling of loggers. In the `subsystem` with the name `urn:jboss:domain:logging:<n.n>`, add the following `async-handler` configuration: ``` <async-handler name="ASYNC"> <level name="INFO"/> <queue-length value="1024"/> <overflow-action value="BLOCK"/> <subhandlers> <handler name="FILE"/> <handler name="CONSOLE"/> </subhandlers> </async-handler> ``` Also, add the `<handler name="ASYNC"/>` element to the `root-logger` configuration.
Port configuration for JBoss instances	If you want to install multiple MDM Hub instances on the same machine, you deploy each MDM Hub instance on a separate JBoss instance. To avoid port conflicts, for each JBoss instance, set the `port-offset` attribute of the `socket-binding-group` element to a different value.
Access to the JBoss root welcome page	Disable access to the JBoss root welcome page. For instructions, see the JBoss documentation.

Create the ActiveVOS Console Administrative User

If you want to use ActiveVOS, create the ActiveVOS Console administrative user with the `abAdmin` role. If you do not create an administrative user, the Hub Server deployment fails. Use the ActiveVOS Console administrative user name and password when the Hub Server installer prompts you to enter the administrative user credentials for the ActiveVOS Console.

1. Change to the following directory:

   `<JBoss installation directory>/bin`

2. To run the add-user utility, use the following script:

   On UNIX. `add-user.sh`

   On Windows. `add-user.bat`

3. Answer the prompts that appear.

The following table describes the values to specify for each prompt:

Prompt	Value to Specify
What type of user do you wish to add? a) Management User or b) Application User	To select Application User, enter `b`.
Realm (ApplicationRealm)	Realm name. Enter the realm name that you specified in the `login-module` that you added to the `standalone-full.xml` file.
Username	ActiveVOS Console administrator name.
Password	Password that complies with the JBoss password standard.
What roles do you want this user to belong to?	`abAdmin`.
About to add user <user name> for realm <realm name>. Is this correct?	To add the user, enter `yes`.
Is this new user going to be used for one AS process to connect to another AS process?	`yes`.

Start JBoss

Before you install the Hub Server and the Process Server, start the JBoss application server. Based on your environment, you either start standalone JBoss instances or JBoss cluster nodes.

Starting Standalone JBoss Instances

If you use standalone JBoss instances, start each instance on which you want to install the MDM Hub components.

1. Navigate to the following directory:

    ```
    <JBoss installation directory>/bin
    ```

2. To start a JBoss instance, run the following command:

    On UNIX. `standalone.sh -c standalone-full.xml -b 0.0.0.0 - Djboss.as.management.blocking.timeout=5000`

    On Windows. `standalone.bat -c standalone-full.xml -b 0.0.0.0 - Djboss.as.management.blocking.timeout=5000`

    JBoss starts on the available network interfaces and listens for the current host that is defined in the hosts file in the `/etc/hosts` directory. Adjust the timeout interval based on your environment.

3. If you have multiple JBoss instances on the same machine, to start the second and any subsequent JBoss instances, add the following argument to the startup command:

    ```
    -Djboss.service.binding.set=ports-01
    ```

Starting JBoss Cluster Nodes

If you use a JBoss cluster environment, start the cluster nodes on which you want to install the MDM Hub components.

1. Navigate to the following directory:

   ```
   <JBoss installation directory>/bin
   ```

2. To start a JBoss cluster node, run the following command on machines that have cluster nodes:

   On UNIX. `standalone.sh -c standalone-full.xml -b 0.0.0.0 -Djboss.node.name=<Name of the cluster node> -Djboss.server.base.dir=../<node path> -Djboss.as.management.blocking.timeout=5000 -u <multicast address> -Djgroups.bind_addr=<bind address> -Djboss.socket.binding.port-offset=<port offset value> -Djboss.partition.name=<Partition name>`

   On Windows. `standalone.bat -c standalone-full.xml -b 0.0.0.0 -Djboss.node.name=<Name of the cluster node> -Djboss.server.base.dir=../<node path> -Djboss.as.management.blocking.timeout=5000 -u <multicast address> -Djgroups.bind_addr=<bind address> -Djboss.socket.binding.port-offset=<port offset value> -Djboss.partition.name=<Partition name>`

   Set the port offset value if multiple cluster nodes run on the same machine. Use the default partition name or ensure that the partition name is the same for all nodes that belong to a cluster. Adjust the timeout interval based on your environment.

Configure the Properties Files for Silent Installation

If you want to install the Hub Server and the Process Server without user interaction in silent mode, configure the installation properties files. You might want to perform a silent installation if you need multiple installations, or if you need to install on a machine cluster. A silent installation does not show any progress or failure messages.

The installer reads the silent installation properties file to determine the installation options. Ensure that you provide correct settings in the properties file because the silent installation process might complete successfully even if the settings are incorrect.

You can configure the following silent installation properties files:

- Informatica platform. Required to install Informatica platform as part of the MDM Hub installation.
- Hub Server. Required to install the Hub Server in silent mode.
- Process Server. Required to install the Process Server in silent mode.

Note: If you do not want to manually configure the silent installation properties file, you can use the `-r` command-line option during installation to generate the silent installation properties file.

Configuring the Informatica Platform Properties File

If you want to install Informatica platform as part of the MDM Hub installation, configure the Informatica platform properties file. Specify the options for the installation in the properties file, and save the file with the name `SilentInput.properties`.

1. Find the `SilentInput.properties` file in the following directory: `<Distribution directory>/Informatica platform>`

2. Create a backup copy of the file.

3. Open the `SilentInput.properties` file in a text editor.

4. Configure the values of the installation parameters, and save the file.

Configuring the Hub Server Properties File

If you want to install the Hub Server in silent mode, configure the Hub Server properties file. Specify the options for the installation in the properties file, and save the file with a new name.

1. Find the `silentInstallServer_sample.properties` file in the following directory: `/silent_install/mrmserver`

2. Create a backup copy of the `silentInstallServer_sample.properties` file.

3. Open the file in a text editor, and configure the values of the installation parameters.

4. Save the properties file with a new name such as `silentInstallServer.properties`.

Configuring the Process Server Properties File

If you want to install the Process Server in silent mode, configure the Hub Server properties file. Specify the options for the installation in the properties file, and save the file with the new name.

1. Find the `silentInstallCleanse_sample.properties` file in the following directory: `/silent_install/mrmcleanse`

2. Create a backup copy of the `silentInstallCleanse_sample.properties` file.

3. Open the file in a text editor, and configure the values of the installation parameters.

4. Save the properties file with a name such as `silentInstallCleanse.properties`.

CHAPTER 3

Hub Store Installation

This chapter includes the following topics:

Create the MDM Hub Master Database

After you install IBM DB2, create an MDM Hub Master Database. The default name of the MDM Hub Master Database is `CMX_SYSTEM`, but you can use a custom name.

Note: If you change the folder names in the distribution directory, metadata import fails.

1. Open a command prompt, and navigate to the following directory:

   ```
   <MDM Hub distribution directory>/database/bin
   ```

2. To create the MDM Hub Master Database, run the following command:

   On UNIX. `./sip_ant.sh create_system`

   On Windows. `sip_ant.bat create_system`

3. Answer the prompts described in the following table:

   Note: The prompt displays default text in brackets. Press **Enter** to use the default value and go to the next prompt.

Prompts	Description
Enter the database type (ORACLE, MSSQL, DB2)	Database type. Specify `DB2`. **Note:** DB2 datasources are case-sensitive. To avoid issues related to case-sensitivity, Informatica recommends that you use uppercase letters to define names, such as the schema names, column names, and triggers.
Enter the database host name [localhost]	Name of the host that runs the database. Default is `localhost`. **Important:** In cluster environments, specify the absolute host name or the IP address to avoid caching issues.

Prompts	Description
Enter the database port number [50000]	Port number that the database listener uses. Default is `50000`. **Note:** You cannot create the DB2 database if the port number is not the default 50000. You must manually change the port number in the DB2 properties file.
Enter the database instance name [SIP97]	Name of the database instance. Default is `SIP97`.
Enter master database name [cmx_system]	Name of the MDM Hub Master Database schema. Default is `cmx_system`.
Enter master user name [cmx_system]	User name to access the MDM Hub Master Database. Default is `cmx_system`.
Enter master database user password	Password to access the MDM Hub Master Database.
Enter locale name from the list: de, en_US, fr, ja, ko, zh_CN. [en_US]	Operating system locale. Default is `en_US`.
Enter the DBA user name [DB2ADMIN]	User name of the administrative user. Default is `DB2ADMIN`.
Enter the DBA password	Password of the administrative user.

4. To verify that the MDM Hub Master Database was created successfully, review `sip_ant.log` in the following directory:

   `<MDM Hub distribution directory>/database/bin`

   The `sip_ant.log` file logs any errors that might occur when you run the `sip_ant` script to create the MDM Hub Master Database.

5. If you intend to configure single sign-on authentication for other applications such as Salesforce, increase the BLOB column length. Run the following command on the MDM Hub Master Database:

   `SET SCHEMA CMX_SYSTEM; ALTER TABLE C_REPOS_SAM_PROVIDER_FILE ALTER COLUMN PROVIDER_FILE SET DATA TYPE BLOB (10240000); CALL ADMIN_CMD('REORG TABLE C_REPOS_SAM_PROVIDER_FILE');`

Create an Operational Reference Store

After you complete the preinstallation tasks, create an Operational Reference Store (ORS). The default name of the ORS is `CMX_ORS`.

Note: If you change the folder names in the distribution directory, metadata import fails.

1. Open a command prompt, and navigate to the following directory:

   `<MDM Hub distribution directory>/database/bin`

2. To create an ORS, run the following command:

   On UNIX. `./sip_ant.sh create_ors`

   On Windows. `sip_ant.bat create_ors`

3. Answer the prompts described in the following table:

    Note: The prompts display default text in brackets. Press **Enter** to use the default value and go to the next prompt.

Prompts	Description
Enter the database type (ORACLE, MSSQL, DB2)	Database type. Specify `DB2`. **Note:** DB2 datasources are case-sensitive. To avoid issues related to case-sensitivity, Informatica recommends that you use uppercase letters to define names, such as the schema names, column names, and triggers.
Enter the Operational Reference Store schema host name [localhost]	Name of the host that is running the database. Default is `localhost`.
Enter the Operational Reference Store schema port number [50000]	Port number that the database listener uses. Default is `50000`.
Enter the Operational Reference Store database instance name [SIP97]	Name of the database instance. Default is `SIP97`.
Enter the Operational Reference Store schema name [cmx_ors]	Name of the Operational Reference Store database. Default is `cmx_ors`.
Enter the Operational Reference Store database user name [cmx_ors]	User name to access the Operational Reference Store. Default is `cmx_ors`. **Note:** If you need to specify a user name that is different from the schema name, you must configure the user as a proxy user.
Enter the Operational Reference Store database user password	Password to access the Operational Reference Store.
Enter locale name from the list: de, en_US, fr, ja, ko, zh_CN. [en_US]	Operating system locale.
Enter the DBA user name [DB2ADMIN]	User name of the administrative user. Default is `DB2ADMIN`.
Enter the DBA password	Password of the administrative user.

4. To verify that the ORS was created successfully, review `sip_ant.log` in the following directory:

    `<MDM Hub distribution directory>/database/bin`

    The `sip_ant.log` file logs any errors that might occur when you run the `sip_ant` script to create the ORS.

Import the Metadata into the MDM Hub Master Database

After you create the MDM Hub Master Database, import the initial metadata into the MDM Hub Master Database. The initial metadata includes repository tables and other objects that the MDM Hub requires in the Hub Store.

Note: If you change the folder names in the distribution directory, metadata import fails.

1. Open a command prompt, and navigate to the following directory:

   `<MDM Hub distribution directory>/database/bin`

2. To import the initial metadata, run the following command:

   On UNIX. `./sip_ant.sh import_system`

   On Windows. `sip_ant.bat import_system`

3. Answer the prompts described in the following table:

   Note: The prompts display default text in brackets. Press **Enter** to use the default value and go to the next prompt.

Prompts	Description
Enter the database type (ORACLE, MSSQL, DB2)	Database type. Specify `DB2`.
Enter the database host name [localhost]	Name of the host that is running the database.
Enter the database port number [50000]	Port number that the database listener uses. Default is `50000`.
Enter the database instance name [SIP97]	Name of the database. Default is `SIP97`.
Enter master database name [cmx_system]	Name of the MDM Hub Master Database schema. Default is `cmx_system`.
Enter master user name [cmx_system]	User name to access the MDM Hub Master Database. Default is `cmx_system`. **Note:** On UNIX, ensure that you use a user name with 8 characters or less.
Enter master database user password	Password to access the MDM Hub Master Database.
Enter locale name from the list: de, en_US, fr, ja, ko, zh_CN. [en_US]	Operating system locale. Default is `en_US`.
Connect URL [jdbc:db2://localhost:50000/ SIP97:currentSchema=CMX_SYSTEM;]	Connect URL for IBM DB2. Default is `jdbc:db2:// localhost:50000/ SIP97:currentSchema=CMX_SYSTEM`.

4. After you import the initial metadata, review the following log files for errors:

   - `seed.log`. Contains database errors.
     The `seed.log` file is in the following directory: `<MDM Hub installation directory>/ database/bin/db2`

- `sip_ant.log`. Contains user input errors.

   The `sip_ant.log` file is in the following directory: `<distribution directory>/database/bin`

Import the Metadata into the Operational Reference Store

After you create the Operational Reference Store, import the initial metadata into the Operational Reference Store. The initial metadata includes repository tables and other objects that the MDM Hub requires in the Hub Store.

Note: If you change the folder names in the distribution directory, metadata import fails.

1. Open a command prompt, and navigate to the following directory:

   `<MDM Hub distribution directory>/database/bin`

2. To import the initial metadata, run the following command:

   On UNIX. `./sip_ant.sh import_ors`

   On Windows. `sip_ant.bat import_ors`

3. Answer the prompts described in the following table:

   Note: The prompts display default text in brackets. Press **Enter** to use the default value and go to the next prompt.

Prompts	Description
Enter the database type (ORACLE, MSSQL, DB2)	Database type. Specify `DB2`.
Enter the Operational Reference Store database host name [localhost]	Name of the host that is running the database.
Enter the Operational Reference Store database port number [50000]	Port number that the database listener uses. Default is `50000`.
Enter the database name [SIP97]	Name of the database. Default is `SIP97`.
Enter the Operational Reference Store database name [cmx_ors]	Name of the Operational Reference Store database. Default is `cmx_ors`.
Connect URL. [jdbc:db2://<host name>:<port>/<database name>]	Connect URL for the master database. Default is `jdbc:db2://<host name>:<port>/<database name>`.
Enter the Operational Reference Store database user name [cmx_ors]	User name to access the Operational Reference Store. Default is `cmx_ors`.
Enter the Operational Reference Store database user password	Password to access the Operational Reference Store.

Prompts	Description
Enter locale name from the list: de, en_US, fr, ja, ko, zh_CN. [en_US]	Operating system locale. Default is `en_US`.
Enter the integer code of Operational Reference Store Timeline Granularity: Year 5, Month 4, Day 3, Hour 2, Minute 1, Second 0 [3]	Specify timeline units to use. Default is days. **Note:** The timeline granularity that you configure cannot be modified later. For more information about timeline, see the *Multidomain MDM Configuration Guide*.

4. After you import the initial metadata, review the following log files for errors:

- `seed.log`. Contains database errors.
  The `seed.log` file is in the following directory: `<MDM Hub installation directory>/database/bin/db2`

- `sip_ant.log`. Contains user input errors.
  The `sip_ant.log` file is in the following directory: `<MDM Hub distribution directory>/database/bin`

CHAPTER 4

Hub Server Installation

This chapter includes the following topics:

Hub Server Installation Modes

You can use any of the following modes to install the Hub Server:

- Graphical mode
- Console mode
- Silent mode

Installing the Hub Server in Graphical Mode

You can install the Hub Server in graphical mode.

You must use the same user name to install the Hub Server and the Process Server.

1. Start the application server.
2. Open a command prompt, and navigate to the Hub Server installer in the distribution directory.

   By default, the installer is in the following directory:
   ```
   <MDM Hub distribution directory>/<operating system name>/mrmserver
   ```
3. Run the following command:

   On UNIX. `./hub_install.bin`

   On Windows. `hub_install.exe`
4. Select the language for the installation, and then click **OK**.

The **Introduction** window appears.

5. Click **Next**.

   The **License Agreement** window appears.

6. Select the **I accept the terms of the License Agreement** option, and then click **Next**.

   The **Choose an Install Folder** window appears.

7. Select the location of the Hub Server installation.

   - To choose the default location, click **Next**.
   - To enter a path, type the path to the installation folder, and click **Next**.

     Note: The installation fails if you specify a path that has spaces in the directory or folder names.

   - To choose another location, click **Choose**, and then click **Next**.

8. On UNIX, choose a link folder or select the option to not create links and click **Next**. On Windows, select the location to create a product icon or select the option not to create a product icon.

9. Click **Next**.

   The **Enter the location of the license file** window appears.

10. Click **Choose** to select a license file, and click **Next**.

    The **Advanced Security** window appears.

11. Select the security configuration for the MDM Hub.

    - Optionally, in the **Customer hash key** field, enter a hashing key up to 128 bits.
    - To choose the default configuration, click **Next**. The **Hub Certificate Provider** window appears.
    - To choose a custom security configuration for the MDM Hub, select **Custom** and click **Next**.

12. If you selected Custom in the preceding step, the **Hashing Algorithm** page appears.

    - To accept the default hashing algorithm for password hashing in the MDM Hub, click **Next**. The **Hub Certificate Provider** window appears.
    - To choose a custom hashing algorithm, select **Other**, and then click **Next**.

13. If you selected Other in the preceding step, provide the following information for the custom hashing algorithm, and then click **Next**:

    - Hashing algorithm name
    - Location of the hashing algorithm archive.

      Note: The hashing algorithm archive must be a ZIP file. If the archive contains multiple JAR files and other supporting files, ensure they are all in the ZIP file.

    - Canonical class name of the hashing algorithm implementation.

      Note: For example, enter `$HASHING_CLASS_NAME$`.

    The **Hub Certificate Provider** window appears.

14. To select the certificate provider for the MDM Hub to authenticate trusted applications, choose one of the following options:

    - To choose the default certificate provider, click **Next**. The **Application Server** window appears.
    - To choose a custom certificate provider, select **Custom**.

15. If you selected Custom in the preceding step, provide the following information for the custom certificate provider:

    a. Enter the location of the certificate provider archive.

       Note: The certificate provider archive must be a ZIP file. If you use a custom certificate provider, ensure the `<MDM Hub installation directory>/server/resources/certificates` directory is empty.

    b. Enter the class name of the certificate provider, and then click **Next**.

    The **Application Server** window appears.

16. Select **JBoss**, and then click **Next**.

    The **JBoss Application Server Home** window appears.

17. Configure the following JBoss settings:

    a. Specify the application server installation directory, and then click **Next**.

       The **JBoss Application Server Configuration Name** window appears.

    b. Specify the Configuration Name, and then click **Next**.

       The default value is `standalone`.

       The **JBoss Application Server Port** window appears.

    c. Specify the remote port.

       Note: The JBoss port can conflict with the default database server port. If ports conflict, change one of the ports to resolve the conflict. For more information on changing ports, see the JBoss documentation.

18. Click **Next**.

    The **Database Selection** window appears.

19. Select IBM DB2 UDB 9, and click **Next**.

    The **DB2 Database Information** window appears.

20. Enter the following settings for the IBM DB2 database to which you want to connect, and click **Next**:

Field Name	Description
Server	Host name of the MDM Hub Master Database server.
Port	Port number of the MDM Hub Master Database.
Database Name	Name of the database that you created.
System Schema	Name of the MDM Hub Master Database.
System Schema User Name	The IBM DB2 database user that you use to access the system schema. **Note:** Use the same user that you used to import seed into the MDM Hub Master Database.
System Schema Password	Password of the user used to connect to the system schema.

The **Install ActiveVOS** window appears.

21. If you want to install the bundled, licensed version of Informatica ActiveVOS, select **Yes** and perform the following substeps. Otherwise, select **No**, and click **Next**.

    a. On the **Choose ActiveVOS Installation Folder** page, accept the default installation path or specify a preferred location. Click **Next**.

    b. On the **Database Information** page, enter the database details that you specified when you created the ActiveVOS database schema, and click **Next**.

    c. On the **Application Server Web URL** page, accept the default URL or specify the URL that you want to use to call ActiveVOS web services. Ensure the URL contains the correct port number for the connection to the application server. Click **Next**.

       The post installation setup script uses the URL to call ActiveVOS web services, deploy the predefined MDM workflows to ActiveVOS, and create the URN mapping.

    d. On the **ActiveVOS Installer** page, click **Choose** and browse to the ActiveVOS_Server installation file in the distribution package. Click **Next**.

    e. Enter the administrative user name and password to create an administrative user for the ActiveVOS Console.

       Important: The user name and password must be the same as the ActiveVOS Console user name and password that was created in the application server.

    f. Click **Next**.

22. Select one of the following Informatica platform installation options:

    - **Yes**. Install Informatica platform.

    - **No**. Does not install Informatica platform.

23. If you select **Yes** in the preceding step, click **Choose** and browse to the following Informatica platform file locations:

    - Installation response file

    - Platform installation file

24. On the Product Usage Toolkit page, select the industry to which the organization belongs and the environment type.

25. If you want to use a proxy server, select **Yes**, and enter the proxy server details. Otherwise, select **No**.

    You can enter the following proxy server details:

    - Proxy server name/IP

    - Proxy server port

    - Proxy server domain name. Leave blank if not applicable.

    - Proxy server user name. Leave blank if not applicable.

    - Proxy server password. Leave blank if not applicable.

26. Click **Next**.

    The Deploy page appears.

27. Select one of the following `postInstallSetup` script options:

    - **Yes, run the script during this installation**. Runs the `postInstallSetup` script during the installation.

    - **No, I will run it later**. Does not run the `postInstallSetup` script during the installation. After the installation, you must run the `postInstallSetup` script or manually deploy the Hub Server applications.

    The `postInstallSetup` script repackages and deploys the Hub Server applications. Also, the script creates data sources and configures JMS message queues.

28.   Click **Next**.

The **Pre-Installation Summary** window appears.

29.   After the Pre-Installation Summary window displays the options you want, click **Install** to start the installation process.

When the installation completes, the **Install Complete** window appears.

30.   Click **Done** to exit the Hub Server installer.

Installing the Hub Server in Console Mode

You can install the Hub Server in console mode on UNIX.

1.   Start the application server.

2.   Open a command prompt, and navigate to the following directory in the MDM Hub distribution:

`<MDM Hub distribution directory>/<operating system name>/mrmserver`

3.   Run the following command:

`./hub_install.bin -i console`

4.   Enter the number of the locale you want to choose for the installation, and then press **Enter**.

The introduction information about the installation appears.

5.   Press **Enter**.

The license agreement appears.

6.   Read the License Agreement. Type **Y** to accept the terms of the license agreement, or type **N** if you do not want to accept the license agreement and want to exit the installation program.

7.   Press **Enter**.

If you entered **Y** in the preceding step, information about the installation folder appears.

8.   Choose a folder for the Hub Server installation.

- To choose the default folder, press **Enter**.

- To change the path, type the absolute path of the installation folder, and press **Enter**.

9.   Confirm the location of the installation folder. Type **Y** to confirm the installation folder, or type **N** to change the installation folder.

10.   Press **Enter**.

A list of link location options appears.

11.   Enter the number of a link location option.

The prompt for the license file location appears.

12.   Enter the absolute path of the license file, and press **Enter**.

A list of advanced security options appears.

13.   Choose a security configuration for the MDM Hub.

- To choose the default configuration, press **Enter**.

- To choose a custom security configuration for the MDM Hub, type `Custom`, and press **Enter**.

- When prompted for a customer hash key, you can enter a value up to 128 bits.

14.   If you typed Custom in the preceding step, choose one of the following options:

- To accept the default hashing algorithm for password hashing in the MDM Hub, press **Enter**.
- To choose a custom hashing algorithm, type `Other`, and press **Enter**.

15. If you typed Other in the preceding step, provide the following information for the custom hashing algorithm:

    - Hashing algorithm name
    - Location of the hashing algorithm archive.

      Note: The hashing algorithm archive must be a ZIP file. If the archive contains multiple JAR files and other supporting files, ensure they are all in the ZIP file.

    - Canonical class name of the hashing algorithm implementation.

      Note: For example, enter `$HASHING_CLASS_NAME$`.

    A list of certificate provider options appears.

16. To select the certificate provider for the MDM Hub to authenticate trusted applications, choose one of the following options:

    - To choose the default certificate provider, press **Enter**.
    - To choose a custom certificate provider, type `Custom` and press **Enter**.

17. If you typed Custom in the preceding step, provide the following information for the custom certificate provider:

    a. Enter the location of the certificate provider archive.

       Note: The certificate provider archive must be a ZIP file. If you use a custom certificate provider, ensure the `<MDM Hub installation directory>/server/resources/certificates` directory is empty. In a WebSphere environment, the MDM Hub user must also have access and write permissions for the certificates directory.

    b. Enter the class name of the certificate provider, and then press **Enter**.

    A list of application server options appears.

18. Enter the number for the application server that you want to select, and press **Enter**.

    The application server information appears.

19. Configure the JBoss settings.

    a. Specify the application server installation directory, and press **Enter**.

       The JBoss application server configuration name information appears.

    b. Specify the configuration name. The default value is `standalone`.

    c. Press **Enter**.

    d. Specify the remote port.

       Note: If the JBoss port conflicts with the default database port, then change one of the ports to resolve the conflict.

20. Press **Enter**.

    The database selection prompt appears.

21. Select DB2, and press **Enter**.

22. Specify the settings for the DB2 database to which you want to connect.

    Press **Enter** to accept the default values, or replace the defaults with the correct values.

The following table describes the prompts:

Prompt	Description
Server	Host name of the MDM Hub Master Database server.
Port	Port number of the MDM Hub Master Database.
Database Name	Name of the database that you created.
System Schema	Name of the MDM Hub Master Database.
System Schema User Name	User belonging to the DB2ADMNS user group that you use to access the system schema. **Note:** Use the same user that you used to import seed into the MDM Hub Master Database.
System Schema Password	Password of the user used to connect to the system schema.

23. Press **Enter**.

24. If you want to install the bundled, licensed version of the ActiveVOS Server, press **Enter** for Yes. Otherwise, type 2 for No and press **Enter**.

    If you selected Yes, the installer prompts you to provide information about your ActiveVOS installation.

    a. Specify the location where you want to install the ActiveVOS Server.

    b. Specify the URL that you want to use to call MDM and ActiveVOS web services.

    c. Enter information about the ActiveVOS database that you specified when you created the ActiveVOS schema.

    d. Specify the location of the ActiveVOS Server installation file.

    e. Enter a user name and password to create an administrative user for the ActiveVOS Server Administration Console.

       Important: The user name and password must be the same as the ActiveVOS Console user name and password that was created in the application server.

25. Press **Enter**.

    The Informatica platform installation prompt appears.

26. If you want to install the Informatica platform, press **Enter** for Yes. Otherwise, type 2 for No and press **Enter**.

    The prompts for the Informatica platform installation response file and archive file locations appear.

27. Enter the locations of the Informatica platform installation response file and archive file, and press **Enter**.

28. Specify the Product Usage Toolkit options.

    a. Enter the industry to which the organization belongs , and then press **Enter**.

    b. Enter the environment type. Type 1 for Production, type 2 for Test/QA, or type 3 for Development, and then press **Enter**.

29. Select whether you have a proxy server. Press **Enter** for Yes. Otherwise, type 2 for No and then press **Enter**.

You can enter the following proxy server details:

- Proxy server name/IP

- Proxy server port

- Proxy server domain name. Leave blank if not applicable.

- Proxy server user name. Leave blank if not applicable.

- Proxy server password. Leave blank if not applicable.

The summary of the installation choices appears.

30. Choose whether you want to run the `postInstallSetup` script as part of the installation, or run it manually later.

    Important: In a WebLogic 12.2.1.3 or later environment, if you decided to install ActiveVOS or if you decided to use the WebLogic T3S protocol, select **No, I will run it later**.

31. Verify the information in the pre-installation summary. If the information is correct, press **Enter** to start the installation.

    The Hub Server is installed according to the configuration information you provide. When the process is complete, the installation complete message appears.

32. Press **Enter** to exit the installer.

Generating a Silent Installation Properties File

You can generate a silent properties file that you can use to run a silent installation. To generate a silent properties file, use the `-r` command-line option.

1. Start the application server.

2. Open a command prompt, and run the following command:

    On UNIX. `./hub_install.bin -r <Path to response file location> installer.properties`

    On Windows. `hub_install.exe -r <Path to response file location> installer.properties`

    The `installer.properties` response file is generated at the specified location.

Installing the Hub Server in Silent Mode

You can install the Hub Server in silent mode. Before you start the silent installation, ensure that you configured the silent installation properties file.

1. Start the application server.

2. Open a command prompt, and run the following command:

    On UNIX. `./hub_install.bin -f <Path to the Hub Server silent installation properties file`

    On Windows. `hub_install.exe -f <Path to the Hub Server silent installation properties file>`

    The silent installer runs in the background. The process can take a while.

3. If you ran the `postInstallSetup` script for the Hub Server as part of the silent installation, check `postinstallSetup.log` to verify that the installation was successful.

    The log file is in the following directory: `<MDM Hub installation directory>/hub/server/logs`.

Installing the Hub Server on Nodes in a Cluster

In application server cluster environments, install the Hub Server on all the nodes of the cluster to which you must deploy the Hub Server application. You must complete the installation on one node of a cluster before you proceed to install on another node of a cluster.

For example, a JBoss cluster has two nodes that run in host1 and host2 and use RMI ports 4447 and 4448. You need to install the Hub Server on node1 and node2. You must complete the Hub Server installation on any one node, such as node2, before you start installation on the other node, node1.

Ensure that the directory structure of the Hub Server installation is the same on all the nodes.

1. Start the JBoss cluster nodes on which you want to install the Hub Server.
2. Open a command prompt, and navigate to the following directory:

    `<MDM Hub distribution directory>/<operating system name>/mrmserver`
3. To start the Hub Server installer on a cluster node, run the following command:

    On UNIX. `./hub_install.bin`

    On Windows. `hub_install.exe`
4. Select the language for the installation, and then click **OK**.

    The **Introduction** window appears.
5. Click **Next**.

    The **License Agreement** window appears.
6. Select the **I accept the terms of the License Agreement** option, and then click **Next**.

    The **Choose an Install Folder** window appears.
7. Select the location of the Hub Server installation.

    *   To choose the default location, click **Next**.
    *   To enter a path, type the path to the installation folder, and click **Next**.

        Note: The installation fails if you specify a path that has spaces in the directory or folder names.
    *   To choose another location, click **Choose**, and then click **Next**.
8. On UNIX, choose a link folder or select the option to not create links and click **Next**. On Windows, select the location to create a product icon or select the option not to create a product icon.
9. Click **Next**.

    The **Enter the location of the license file** window appears.
10. Click **Choose** to select a license file, and click **Next**.

    The **Advanced Security** window appears.
11. Select **JBoss**, and then click **Next**.

    The **JBoss Application Server Home** window appears.

12. Configure the following JBoss settings:

    a. Specify the application server installation directory, and then click **Next**.

       The **JBoss Application Server Configuration Name** window appears.

    b. Enter `standalone`, and then click **Next**.

       The default value is `standalone`.

       The **JBoss Application Server Port** window appears.

    c. Specify the remote port of the cluster node that is running on the machine.

       Note: The JBoss port can conflict with the default database server port. If ports conflict, change one of the ports to resolve the conflict. For more information on changing ports, see the JBoss documentation.

13. Click **Next**.

    The **Database Selection** window appears.

14. Select IBM DB2 UDB 9, and click **Next**.

    The **DB2 Database Information** window appears.

15. Enter the following settings for the IBM DB2 database to which you want to connect, and click **Next**:

Field Name	Description
Server	Host name of the MDM Hub Master Database server.
Port	Port number of the MDM Hub Master Database.
Database Name	Name of the database that you created.
System Schema	Name of the MDM Hub Master Database.
System Schema User Name	The IBM DB2 database user that you use to access the system schema. **Note:** Use the same user that you used to import seed into the MDM Hub Master Database.
System Schema Password	Password of the user used to connect to the system schema.

The **Install ActiveVOS** window appears.

16. If you want to install the bundled, licensed version of Informatica ActiveVOS, select **Yes** and perform the following substeps. Otherwise, select **No**, and click **Next**.

    a. On the **Choose ActiveVOS Installation Folder** page, accept the default installation path or specify a preferred location. Click **Next**.

    b. On the **Database Information** page, enter the database details that you specified when you created the ActiveVOS database schema, and click **Next**.

    c. On the **Application Server Web URL** page, accept the default URL or specify the URL that you want to use to call ActiveVOS web services. Ensure the URL contains the correct port number for the connection to the application server. Click **Next**.

       The post installation setup script uses the URL to call ActiveVOS web services, deploy the predefined MDM workflows to ActiveVOS, and create the URN mapping.

d. On the **ActiveVOS Installer** page, click **Choose** and browse to the ActiveVOS_Server installation file in the distribution package. Click **Next**.

e. Enter the administrative user name and password to create an administrative user for the ActiveVOS Console.

Important: The user name and password must be the same as the ActiveVOS Console user name and password that was created in the application server.

f. Click **Next**.

17. Select one of the following Informatica platform installation options:

- **Yes**. Install Informatica platform.

- **No**. Does not install Informatica platform.

18. If you select **Yes** in the preceding step, click **Choose** and browse to the following Informatica platform file locations:

- Installation response file

- Platform installation file

19. On the Product Usage Toolkit page, select the industry to which the organization belongs and the environment type.

20. If you want to use a proxy server, select **Yes**, and enter the proxy server details. Otherwise, select **No**.

You can enter the following proxy server details:

- Proxy server name/IP

- Proxy server port

- Proxy server domain name. Leave blank if not applicable.

- Proxy server user name. Leave blank if not applicable.

- Proxy server password. Leave blank if not applicable.

21. Click **Next**.

The Deploy page appears.

22. Select the **No, I will run it later** `postInstallSetup` script option.

The installer does not run the `postInstallSetup` script during the installation. Ensure that you manually deploy the Hub Server applications after the installation.

23. Click **Next**.

The **Pre-Installation Summary** window appears.

24. After the Pre-Installation Summary window displays the options you want, click **Install** to start the installation process.

When the installation completes, the **Install Complete** window appears.

25. Click **Done** to exit the Hub Server installer.

You can use any node in the JBoss cluster to access the Hub Server.

CHAPTER 5

Hub Server Post-Installation Tasks

This chapter includes the following topics:

Copy the Installation Log Files

The installation log files are useful for troubleshooting the Hub Server installation process. Copy the log files to the installation documentation directory. Informatica Global Customer Support might request copies of the log files if you contact them regarding installation issues.

The following table describes the different types of installation log files:

Log File Type	Description
Installation log	- **File name**. `Informatica_MDM_Hub_Server_Install_<timestamp>.xml` - **Location**. `<MDM Hub installation directory>/hub/server/UninstallerData/logs` - **Contents**. Directories and registry entries that are created, names of the files installed and commands run, and status for each installed file.
Installation prerequisites log	- **File name**. `installPrereq.log` - **Location**. `<MDM Hub installation directory>/hub/server/logs` - **Contents**. Logs of prerequisite checks performed by the installer.

Log File Type	Description
Debug log	- **File name.** `infamdm_installer_debug.txt` - **Location.** `<MDM Hub installation directory>/hub/server` - **Contents.** Detailed information about the choices that are made during the installation, and the actions performed by the installer.
Post-installation setup log	- **File name.** `postInstallSetup.log` - **Location.** `<MDM Hub installation directory>/hub/server/logs` - **Contents.** Summary of actions performed by the installer during the post-installation process and the errors in the post-installation process.
Hub Server log	- **File name.** `cmxserver.log` - **Location.** `<MDM Hub installation directory>/hub/server/logs` - **Contents.** Summary of the Hub Server operations.
JBoss log	- **File name.** `server.log` - **Location.** `<JBoss installation directory>/standalone/log` - **Contents.** JBoss event logs and error messages.

Verify the Version and Build Number

Ensure that the correct version and build number of the Hub Server is installed.

1. Open a command prompt, and navigate to the following directory: `<MDM Hub installation directory>/hub/server/bin`

2. To verify the Hub Server version and build number, run the following command:

    On UNIX. `versionInfo.sh`

    On Windows. `versionInfo.bat`

    Note: For AIX systems, change the `versionInfo.sh` script to run Java from the `<Java home>/jre/bin` directory.

Configure the MDM Hub Master Database Name

If the MDM Hub Master Database has a name other than `cmx_system`, configure the MDM Hub Master Database name in the `cmxserver.properties` file.

1. Open the `cmxserver.properties` file in the following directory:

    `<MDM Hub installation directory>/hub/server/resources`

2. Set the `cmx.server.masterdatabase.schemaname` property to the name that you specified for the MDM Hub Master Database.

    You specified the name for the MDM Hub Master Database when you created it.

Verify and Configure Application Server Settings (Conditional)

Verify and configure application server settings based on the requirements of the MDM Hub environment.

The following table describes the configuration tasks that you can perform:

Configuration Task	Description
Editing the application server settings	Required if you run the postInstallSetup script during the installation and the script fails because of incorrect application server settings.
Configuring the Hub Server for a JBoss multi-node or cluster environment	Required if you installed the Hub Server in a JBoss multi-node or cluster environment.

Editing the Application Server Settings

If you run the `postInstallSetup` script during the installation and the script fails because of incorrect application server settings, edit the `build.properties` file. Also, if you want to change any application server settings, edit the file.

1. Open `build.properties` file is in the following directory:

    `<MDM Hub installation directory>/hub/server/bin`
2. Edit the application server settings and save the file.

After you edit the `build.properties` file, ensure that you run the `postInstallSetup` script to deploy the Hub Server applications.

Configuring the Hub Server for a JBoss Multi-node or Cluster Environment

If you installed the Hub Server in a JBoss multi-node or a cluster environment, configure the Hub Server for the JBoss environment. To configure the Hub Server for the JBoss environment, configure the JBoss environment properties in the `cmxserver.properties` file.

For example, if a JBoss cluster or the multi-node environment has two nodes, which run on host1 and host2, configure the JBoss environment properties on both the nodes.

1. On all nodes in the environment, open the `cmxserver.properties` file in the following directory:

    `<MDM Hub installation directory>/hub/server/resources`

2. Configure the following JBoss environment properties:

Property	Description
jboss.cluster	Specifies whether EJB servers have multiple nodes or are clustered for the Hub Server. Add the `jboss.cluster` property, and set it to `true`.
cmx.appserver.hostname	Specifies machine names of the JBoss multi-node or the cluster environment. The machine names must be in the following format: `<host name>.<domain>.com` For example, if the cluster or the multi-node environment has two nodes that run on host1 and host2 and use RMI ports 4447 and 4448, set `cmx.appserver.hostname=host1.<domain>.com,host2.<domain>.com`
cmx.appserver.rmi.port	Specifies remote port numbers. For example, if the cluster or the multi-node environment has two nodes, which run on host1 and host2 and use RMI ports 4447 and 4448, set `cmx.appserver.rmi.port=4447,4448` **Note:** Separate the port numbers by a comma with no space between them. Ensure that the order of the port numbers corresponds to the order of the host names.

Deploy the Hub Server Applications (Conditional)

You must deploy the Hub Server applications on the same machine on which you install the Hub Server.

The Hub Server applications must be able to find the Hub Server installation from which you deploy them. Therefore, do not transfer the EAR files for deployment on another machine. For example, you install the Hub Server on a test machine, and then deploy the applications on the production machine. The applications that you deploy on the production machine cannot find the installation on the test machine for information such as logging configuration.

You need to deploy the Hub Server applications in any of the following scenarios:

- The installation is in an application server multi-node environment or cluster environment.
- The installation completes, but the `postInstallSetup` script that you run during the installation fails.
- You skipped the `postInstallSetup` script during the installation.

To deploy the Hub Server applications, use one of the following procedures described in the following table:

Procedure	Description
Using a script for deployment	You run the `postInstallSetup` script to deploy the Hub Server applications. Also, the script creates data sources and configures JMS message queues.
Manual deployment	You manually deploy the Hub Server applications. Also, you must manually create data sources and configure JMS message queues.

Important: If the installation is in an application server multi-node or a cluster environment, firstly deploy the Hub Server applications on one node. Before you deploy the Hub Server applications on the other nodes, copy all the files from the `certificates` directory on the node with the deployment to the `certificates` directory on all the other nodes. The `certificates` directory is in the following location: `<MDM Hub installation directory>/hub/server/resources`.

Using a Script for Deploying the Hub Server Applications (Conditional)

If you skipped the `postInstallSetup` script during the installation, run the script. The post-installation process deploys the Hub Server applications, creates data sources, and configures JMS message queues.

1. Open a command prompt, and change to the following directory:

    `<MDM Hub installation directory>/hub/server`

2. Run the `postInstallSetup` script.

    Note: If you did not install the ActiveVOS version that is bundled with the MDM Hub installer, do not include the ActiveVOS user names and passwords in the command.

    On UNIX.

    ```
    ./postInstallSetup.sh -Ddatabase.password=<MDM Hub Master database password>
    -Davos.username=<ActiveVOS Console username>
    -Davos.password=<ActiveVOS Console password>
    -Davos.jdbc.database.username=<ActiveVOS database username>
    -Davos.jdbc.database.password=<ActiveVOS database password>
    ```

    Note: If you include the exclamation mark (!) in your password, you must include a backslash before the exclamation mark. For example, if your password is !!cmx!!, enter the following password: \!\!cmx\!\!

    On Windows.

    ```
    postInstallSetup.bat
    -Ddatabase.password=<MDM Hub Master database password>
    -Davos.username=<ActiveVOS Console username>
    -Davos.password=<ActiveVOS Console password>
    -Davos.jdbc.database.username=<ActiveVOS database username>
    -Davos.jdbc.database.password=<ActiveVOS database password>
    ```

    The ActiveVOS Console credentials are the same credentials as the administrative user in the application server.

    The ActiveVOS database credentials are the same credentials that were used to run the `create_bpm` script.

Manually Deploying the Hub Server Applications (Conditional)

If you skipped the `postInstallSetup` script during the installation or the `postInstallSetup` script fails, you can manually deploy the Hub Server applications. Ensure that you deploy the Hub Server applications from the Hub Server installation directory.

To deploy the Hub Server applications, perform the following tasks:

1. Creating data sources
2. Configuring JMS message queues
3. Deploying the Hub Server applications
4. Configuring JMS message queues in the Hub Server
5. Configuring server resources for Informatica Data Director (IDD)

Step 1. Creating Data Sources

Before you manually deploy the Hub Server applications, create data sources. Also, if you want to configure multiple Process Servers or troubleshoot installation issues, create data sources.

1. Create the following directory structure under `<JBoss installation directory>/modules/`:

   `/com/informatica/mdm/jdbc/main`

2. In the `main` directory, create the `module.xml` file with the following content:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<module xmlns="urn:jboss:module:1.0" name="com.informatica.mdm.jdbc">
    <resources>
        <resource-root path="<JDBC driver file name>"/>
    </resources>
    <dependencies>
        <module name="javax.api"/>
        <module name="javax.transaction.api"/>
    </dependencies>
</module>
```

3. Download and copy the supported version of the JDBC drivers to the `main` directory.

4. Open the JBoss Management console, and click **Profile**.

   The **Datasources** page appears.

5. Click **Connector** > **Datasources**.

6. Click the **XA Datasources** tab.

   The **JDBC XA Datasources** page appears.

7. Click **Add**.

   The **Create XA Datasource** dialog box appears.

8. Enter values in the **Name** and **JNDI Name** fields, and click **Next**.

   The following table lists the syntax of the values to specify:

Field Name	Syntax of Value
Name	`jdbc/siperian-<IBM DB2 DB host name>-<database name>-<Operational Reference Store name>-ds`
JNDI Name	`java:jboss/datasources/jdbc/siperian-<IBM DB2 host name>-<database name>-<Operational Reference Store name>-ds`

   The **XA Datasource** page appears.

9. In the XA Datasource Class field, enter `com.informatica.mdm.jdbc`, and click **Next**.

   The **XA Properties** page appears.

10. Enter the key and value pairs, and click **Next**.

The following table lists the key value pairs:

Key	Value
DatabaseName	Name of the database that you create.
DeferPrepares	false
DriverType	4
PortNumber	50000
ServerName	IBM DB2 server name
fullyMaterializeInputStreams	true
fullyMaterializeLobData	true
progressiveStreaming	2

The **Connection Settings** window appears.

11. Enter values for the connection settings, and click **Done**.

   The following table describes the connection fields:

Field Name	Description
Username	Name of the Operational Reference Store
Password	Password to access the Operational Reference Store

The **JDBC XA Datasources** page appears.

12. In the Selection section, edit the properties under the **Pool** tab.

Property	Value
Min Pool Size	5
Max Pool Size	100
Strict Minimum	false
Prefill enabled	false
Flush Strategy	FailingConnectionOnly
Idle Timeout	0
Track Statements	false

13. In the Selection section, edit the properties under the **Validation** tab.

Property	Value
Valid Connection Checker	org.jboss.jca.adapters.jdbc.extensions.db2.DB2ValidConnectionChecker
Check Valid Sql	Not applicable
Validate On Match	false
Background Validation	false
Validation Millis	0
Stale Connection Checker	org.jboss.jca.adapters.jdbc.extensions.db2.DB2StaleConnectionChecker
Exception Sorter	org.jboss.jca.adapters.jdbc.extensions.db2.DB2ExceptionSorter

14. Select the data source that you added, and click **Enable**.

The data source that you added is enabled.

Step 2. Configuring JMS Message Queues

Before you manually deploy the Hub Server applications, configure JMS message queues. Also, to troubleshoot issues, you might need to manually configure JMS message queues. For example, if the automated queue creation process fails or the queues accidentally drop after installation, you need to manually configure message queues.

The Services Integration Framework (SIF) uses a message-driven bean on the JMS message queue to process incoming asynchronous SIF requests. Configure the message queue and the connection factory for the application server that you use for the MDM Hub implementation. When you configure a JMS message queue, you also create a connection factory.

To configure the JMS message queue, perform the following tasks:

1. Create a connection factory.
2. Create a JMS message queue for SIF requests.
3. Verify the JMS message queue

Step 1. Create a Connection Factory

You can manually create a connection factory.

1. Open the JBoss Management console.
2. Click **Profile** > **Messaging** > **Destinations**.

The **JMS Messaging Provider** page appears.
3. To view the settings of the **default** JMS messaging provider, click **View**.

The **Messaging Destinations** page appears.
4. Click the **Connection Factories** link.

The configured connection factories appear.
5. To add a connection factory, click **Add**.

The **Create Connection Factory** dialog box appears.

6. Enter connection factory details.

   The following table describes the connection factory details fields:

Field Name	Description
Name	Connection Factory name. Specify `java:/siperian.mrm.jms.xaconnectionfactory`.
JNDI Names	JNDI Name. Specify `java:/siperian.mrm.jms.xaconnectionfactory`.
Connector	Connector that you use to connect to the server. The following connectors are available: - in-vm. Use the in-vm connector to connect to a local server. - netty. Use the netty connector to connect to a remote server.

7. Click **Save**.

   The connection factory is created.

Step 2. Create a JMS Message Queue for SIF Requests

To create a JMS message queue, use the JBoss Management console.

1. Open the JBoss Management console.

2. Click **Profile** > **Messaging** > **Destinations**.

   The **JMS Messaging Provider** page appears.

3. Click **View** to view the settings of the **default** JMS messaging provider.

   The **JMS Queue destination** page appears.

4. Click **Add**.

   The **Create JMS Queue** dialog box appears.

5. Specify the following options:

Option	Value
Name	`java:/queue/siperian.sif.jms.queue`
JNDI Name	`java:/queue/siperian.sif.jms.queue`
Durable	Clear the **Durable** check box.

6. Click **Save**

   The queue is created.

Step 3. Deploying the Hub Server Applications

You can manually deploy the Hub Server applications. Ensure that you deploy the Hub Server applications from the Hub Server installation directory.

1. Stop the JBoss application server.
2. If you have any existing deployments, remove the following deployment files from the JBoss deployment directory:

Deployment File Name	Description
siperian-mrm.ear	Required. The Hub Server application.
provisioning-ear.ear	Required. The Provisioning tool application.
entity360view-ear.ear	Optional. The Entity 360 framework.
informatica-mdm-platform-ear.ear	Optional. The Informatica platform application.
ave_jboss.ear	Optional. The ActiveVOS server application.
activevos-central.war	Optional. The ActiveVOS Central application.

3. Copy the deployment files listed in the preceding step from the source to the target directories:

   Source: Hub Server installation directory

   Target: `<JBoss installation directory>\standalone\deployments`

4. Start the application server.

For more information about deploying applications, see the JBoss documentation.

Step 4. Configuring JMS Message Queues on the Hub Server

After you manually deploy the Hub Server applications, configure JMS message queues on the Hub Server.

To configure the JMS message queue on the Hub Server, perform the following tasks:

1. Start the Hub Console.
2. Add a message queue server.
3. Add a message queue.

Step 1. Start the Hub Console

To access the MDM Hub, start the Hub Console.

1. Open a browser window and enter the following URL:

   `http://<MDM Hub host>:<port number>/cmx/`

   Check with your administrator for the correct port number.

   The **Hub Console launch** window appears.
2. Launch the Hub Console.
3. Enter your user name and password, and then click **Log in**.

   Java Web Start downloads application files.

The **Informatica MDM Hub Login** dialog box appears.

4. Enter your user name and password, and click **OK**.

    The **Change database** dialog box appears.

5. Select the target database.

    The target database is the MDM Hub Master Database.

6. Select a language from the list, and click **Connect.**

    The Hub Console user interface appears in the language that you select. If you need to change the language in which the Hub Console user interface appears, restart the Hub Console with the language of your choice.

Step 2. Add a Message Queue Server

Before you add a message queue, you must add a message queue server to the MDM Hub implementation.

1. In the Hub Console, click **Message Queues** under the Configuration workbench.

2. Click **Write Lock** > **Acquire Lock**.

3. Right-click the middle pane of the Message Queues tool, and then click **Add Message Queue Server**.

    The **Add Message Queue Server** dialog box appears.

4. Enter the message queue server details.

    The following table describes the fields that you use to configure the JMS message queue server:

Field Name	Value
Connection Factory Name	Name of the connection factory. Specify `java:/siperian.mrm.jms.xaconnectionfactory.`
Display Name	Name of the message queue server that must appear in the Hub Console. Specify `java:/siperian.mrm.jms.xaconnectionfactory.`

5. Click **OK**.

    The message queue server is added.

Step 3. Add a Message Queue

You can add a message queue to a message queue server.

1. In the Hub Console, click **Message Queues** under the Configuration workbench.

2. Click **Write Lock** > **Acquire Lock**.

3. Right-click the message queue server in the middle pane of the Message Queues tool, and then click **Add Message Queue**.

    The **Add Message Queue** dialog box appears.

4. Enter JMS message queue details.

The following table describes the JMS message queue fields:

Field Name	Value
Queue Name	Name of the message queue. Specify `java:/queue/siperian.sif.jms.queue`.
Display Name	Name of the message queue that must appear in the Hub Console. Specify `java:/queue/siperian.sif.jms.queue`.

5. Click **OK**.

    The message queue is added to the message queue server.

6. In the right pane, select the **Use with message triggers** option.

7. Click **Test**.

    The result of the message queue test appears.

Step 5. Configuring Server Resources for Informatica Data Director

If you want to use Informatica Data Director (IDD), configure the JNDI URL resource.

1. Open the `standalone-full.xml` file in the following directory:

    `<JBoss installation directory>/standalone/configuration`

2. Add the `simple name` configuration as shown in the following code:

    In the subsystem with the name `urn:jboss:domain:naming:<n.n>`, add the following `simple name` configuration within the `bindings` element:

    ```
    <simple name="java:jboss/url/hubserver/home" value="file:///<Hub Server installation
    directory>" type="java.net.URL"/>
    ```

Configuring Metadata Caching (Optional)

Metadata caches manage items such as data objects, repository objects, and search tokens. The MDM Hub uses Infinispan for metadata caching. Infinispan is installed with the Hub Server. For the caches that the Hub Server uses, the Infinispan configuration file contains default attribute values.

Run the MDM Hub with the default attribute values for the caches. If you experience performance issues, you can fine-tune the attribute values to better suit your environment.

The following table summarizes the default attribute values:

Infinispan Element and Attribute	Default Value	Description
`locking acquire-timeout`	`60000`	Maximum time during which the Hub Server can try to acquire a lock.
`transaction stop-timeout`	`30000`	When a cache stops, this attribute sets the maximum time that Infinispan waits while the Hub Server finishes remote and local transactions.
`transport cluster`	`infinispan-cluster`	Name for the underlying group communication cluster.
`transport stack`	`UDP`	Type of configuration: UDP or TCP. The configurations are defined in the `jgroups-udp.xml` file and the `jgroups-tcp.xml` file.
`transport node-name`	`$node$`	Name of the current node. The Hub Server sets this attribute. The node-name defaults to a combination of the host name and a random number. The number differentiates multiple nodes on the same host.
`transport machine`	`$machine$`	ID of the machine where the node runs. The Hub Server sets this attribute.
`expiration lifespan`	--	Maximum lifespan of a cache entry in milliseconds. When a cache entry exceeds its lifespan, the entry expires within the cluster. If you need to optimize performance, increase the lifespan for the following caches: DISABLE_WHEN_LOCK, DATA_OBJECTS, and REPOS_OBJECTS. For example, you can increase the lifespan from one hour (3600000) to one day (86400000). Each cache has its own default value for this attribute. To find the default values, open the `inifinspanConfig.xml` file.
`expiration interval`	--	Maximum interval for checking the lifespan. If you need to optimize performance, increase the interval for the following caches: DISABLE_WHEN_LOCK, DATA_OBJECTS, and REPOS_OBJECTS. For example, you can increase the interval from five seconds (5000) to five minutes (300000). Each cache has its own default value for this attribute. To find the default values, open the `inifinspanConfig.xml` file.

Editing Infinispan Attributes

To configure metadata caching attributes, edit the `infinispanConfig.xml` file for the Hub Server. For help with the Infinispan configuration, see the Infinispan documentation.

Note: The Process Server also has an Infinispan configuration file. The default attribute values should be sufficient, however if you notice issues with the performance of the Process Server, you can fine-tune the attribute values.

1. Navigate to the following directory: `<MDM Hub installation directory>/hub/server/resources`
2. Make a backup copy of the following file: `infinispanConfig.xml`
3. Open the `infinispanConfig.xml` file and find the Infinispan version number, which appears in the `xsi:schemaLocation` attribute.

4. Review the documentation for the Infinispan version.

   Note: In the following URLs, substitute the version number wherever the path contains #.#.

   - To view the configuration schema, go to the URL that is contained in the `xsi:schemaLocation` attribute in the file.

   - To learn about the attributes, go to `https://docs.jboss.org/infinispan/<#.#.x>/configdocs/`

   - To learn about Infinispan, go to `http://infinispan.org/docs/<#.#.x>/` and select the "Frequently Asked Questions" link.

5. Edit the file and save it.

Starting the Hub Console

To access the MDM Hub, start the Hub Console. Use an HTTP or HTTPS connection to start the Hub Console.

Ensure that you have a user name and password set up before you start the Hub Console.

1. Open a browser window and enter the following URL:

   ```
   http://<MDM Hub host>:<port number>/cmx/
   ```

   Check with your administrator for the correct port number.

   The **Hub Console launch** window appears.

2. Launch the Hub Console.

3. Enter your user name and password, and then click **Log in**.

   Java Web Start downloads application files.

   The **Informatica MDM Hub Login** dialog box appears.

4. Enter your user name and password, and click **OK**.

   The **Change database** dialog box appears.

5. Select the target database.

   The target database is the MDM Hub Master Database.

6. Select a language from the list, and click **Connect.**

   The Hub Console user interface appears in the language that you select. If you need to change the language in which the Hub Console user interface appears, restart the Hub Console with the language of your choice.

Registering an Operational Reference Store

After you create an Operational Reference Store, you must register it through the Hub Console. Register an Operational Reference Store with a single MDM Hub Master Database.

1. Start the Hub Console.

   The **Change database** dialog box appears.

2. Select **MDM Hub Master Database**, and click **Connect**.

3. Under the **Configuration** workbench, click the **Databases** tool.

4. From the **Write Lock** menu, click **Acquire Lock**.

5. In the Databases pane, click the **Register database** button.

    The **Informatica MDM Hub Connection Wizard** appears.

6. Select the IBM DB2 database type option, and click **Next**.

7. Configure connection properties for the database.

    a. Specify the connection properties, and click **Next**.

        The following table lists and describes the connection properties:

Property	Description
Database Display Name	Name for the Operational Reference Store that must appear in the Hub Console.
Machine Identifier	Prefix given to keys to uniquely identify records from the Hub Store instance.
Database server name	IP address or name of the server that hosts the IBM DB2 database.
Database name	Name of the database that you create.
Port	Port of the IBM DB2 database. The default is 50000.
Schema Name	Name of the Operational Reference Store.
User name	User name for the Operational Reference Store. By default, this is the user name that you specify in the script that you use to create the Operational Reference Store. This user owns all the Operational Reference Store database objects in the Hub Store. **Note:** If you created a proxy user, use the proxy user name instead of the Operational Reference Store user name.
Password	Password associated with the user name for the Operational Reference Store. For IBM DB2, the password is case sensitive. By default, this is the password that you specify when you create the Operational Reference Store.
DDM connection URL	Optional. URL to connect to the Dynamic Data Masking application. The URL is similar to the URL that you use to connect to the database, except that the Dynamic Data Masking application URL uses the Dynamic Data Masking host name and port number.

        Note: The **Schema Name** and the **User Name** are both the names of the Operational Reference Store that you specified when you created the Operational Reference Store. If you need this information, consult your database administrator.

        The **Summary** page appears.

    b. Review the summary, and specify additional connection properties.

The following table lists additional connection properties that you can configure:

Property	Description
Connection URL	Connect URL. The Connection Wizard generates the connect URL by default. The following example shows the format of the connect URL: `jdbc:db2://database_host:port/db_name`
Create data source after registration	Select to create the data source on the application server after registration. Select to create the data source on the application server after registration. If you do not select the option, you must manually configure the data source. **Note:** In application server cluster environments, manually create the data sources and connection pools for the Operational Reference Stores.

8. Click **Finish**.

   The **Registering Database** dialog box appears.

9. Click **OK**.

   The MDM Hub registers the Operational Reference Store.

10. Select the Operational Reference Store that you registered, and click the **Test database connection** button.

    The Test Database dialog box displays the result of the database connection test.

11. Click **OK**.

    The Operational Reference Store is registered, and the connection to the database is tested.

Additional Application Server Configuration (Optional)

Perform additional JBoss configuration based on the requirements of the MDM Hub environment.

The following table describes the configurations that you can perform:

Configuration	Description
Configuring JBoss for standalone Process Server instances	Required to configure JBoss for standalone Process Server instances in the following scenarios: - You want to install a Process Server instance on a JBoss instance on which you do not have the Hub Server installed. - You want to install multiple, standalone Process Server instances.
Configuring EJB security	Required if you want to configure EJB security at the JBoss application server level.

Configuring JBoss for Standalone Process Server Instances

To install a Process Server instance on a JBoss instance on which you do not have the Hub Server installed, configure the JBoss instance. Also, if you want to install multiple Process Server instances, configure a separate JBoss instance for each additional Process Server.

▶   Copy the JDBC files from the JBoss instance of the Hub Server to the JBoss instance on which you want to deploy the Process Servers.

The JDBC files are in the following directory: `<JBoss installation directory>/modules/com/informatica/mdm/jdbc/main`

Configuring EJB Security

You can configure EJB security at the JBoss application server level or at the Hub Server level to prevent unauthorized access to data and other resources in the MDM Hub. To configure EJB security at the JBoss application server level, enable the JBoss remoting-connector security.

1. Log in to the Hub Console and change the Hub Console password to a password that adheres to the JBoss password policy.

    Note: Ensure that the password that you set adheres to the JBoss password policy and the configured MDM Hub global password policy. This is important because the same password needs to be set for the Hub Console and for JBoss.

    For information about the MDM Hub global password policy, see the *Multidomain MDM Configuration Guide*.

    a. Disable remoting-connector security.

    b. Change the Hub Console password to adhere to the JBoss password policy.

        1. Log in to the Hub Console, change the database to the MDM Hub Master Database, and click **Connect**.

        2. Select the **Users** tool under **Configuration** workbenches and acquire a write lock.

        3. Select the `admin` user under the **User** tab, and click the **Change password** icon.

            The **Change Password** dialog box appears.

        4. Change the password to adhere to the JBoss password policy, and click **OK**.

2. Enable the remoting-connector security in the `standalone-full.xml` file.

    a. Open the `standalone-full.xml` file in the following directory:

        `<JBoss installation directory>/standalone/configuration`

    b. Add the `security-realm` attribute as shown in the following code:

        In the subsystem with the name `urn:jboss:domain:remoting:<n.n>`, add the following attribute to the `remoting-connector` configuration:

            security-realm=<"<security realm name>">

3. In JBoss, register the MDM Hub users that must have access to the Hub Server.

    a. Run the following script to register the MDM Hub users:

        On UNIX. `<JBoss installation directory>/bin/add-user.sh`

        On Windows. `<JBoss installation directory>\bin\add-user.bat`

b. Answer the prompts in the following table:

Prompt	Value
What type of user do you wish to add? a) Management User (mgmt-users.properties) b) Application User (application-users.properties)	Specify the option b.
Realm (ApplicationRealm)	Use the name of the security realm. Default is `ApplicationRealm`.
Username	User name of the MDM Hub user.
Password	Password of the MDM Hub user that adheres to JBoss password policy.
What roles do you want this user to belong to?	You must specify `hubconsole`.

4. Enable JBoss security on the Hub Server.

    a. Open `cmxserver.properties` in the following directory:

    `<MDM Hub installation directory>/hub/server/resources`

    b. Uncomment the following property:

    `#cmx.jboss7.security.enabled=true`

5. Repackage the Hub Server EAR files.

    a. Navigate to the following directory:

    `<MDM Hub installation directory>/hub/server/bin`

    b. Run the following command:

    On UNIX.

    `./sip_ant.sh repackage`

    On Windows.

    `sip_ant.bat repackage`

6. Deploy the Hub Server EAR files.

    a. Stop the JBoss application server.

    b. If you have any existing deployments, remove the following deployment files from the JBoss deployment directory:

Deployment File Name	Description
siperian-mrm.ear	Required. The Hub Server application.
provisioning-ear.ear	Required. The Provisioning tool application.
entity360view-ear.ear	Optional. The Entity 360 framework.

Deployment File Name	Description
informatica-mdm-platform-ear.ear	Optional. The Informatica platform application.
ave_jboss.ear	Optional. The ActiveVOS server application.
activevos-central.war	Optional. The ActiveVOS Central application.

c. Copy the deployment files listed in the preceding step from the source to the target directories:

Source: Hub Server installation directory

Target: `<JBoss installation directory>\standalone\deployments`

d. Start the application server.

For more information about deploying applications, see the JBoss documentation.

CHAPTER 6

Process Server Installation

This chapter includes the following topics:

Process Server Installation Modes

You can use any of the following modes to install the Process Server:

- Graphical mode
- Console mode
- Silent mode

Installing the Process Server in Graphical Mode

You can install the Process Server in graphical mode.

You must use the same user name to install the Hub Server and the Process Server.

Note: When you install the Process Server on RedHat Linux, do not use the root user. The root user does not have a `.profile`, which InstallAnywhere requires. Instead, create and use a separate user profile to install the Process Server.

1. Start the application server.

2. Open a command prompt, and navigate to the following directory:

    `<MDM Hub distribution directory>/<operating system name>/mrmcleanse`

3. Run the following command:

    On UNIX. `hub_cleanse_install.bin`

    On Windows. `hub_cleanse_install.exe`

4. Select the language for the installation, and then click **OK**.

 The **Introduction** window appears.

5. Click **Next**.

 The **License Agreement** window appears.

6. Select the **I accept the terms of the License Agreement** option, and then click **Next**.

 The **Choose Install Folder** window appears.

7. Choose the default location to install the Process Server, or browse to choose a different location. Click **Next**.

 Important: Process Server fails to load if the total length of the path exceeds 256 characters or includes spaces in the directory or folder names.

 On UNIX, the **Choose Link Folder** window appears.

 On Windows, the **Choose Shortcut** Folder window appears.

8. Select a location for the product icons, and click **Next**.

 The **Enter Location of License File** window appears.

9. Click **Choose** to select a license file, and click **Next**.

 The **Application Server** window appears.

10. Select JBoss, and then click **Next**.

 The **JBoss Application Server Home** window appears.

11. Configure the following JBoss settings:

 a. Specify the path to the JBoss installation directory, and then click **Next**.

  The **JBoss Application Server Configuration Name** window appears.

 b. Specify the Configuration Name, and then click **Next**.

  The default value is `standalone`.

  The **JBoss Application Server Port** window appears.

 c. Specify the remote port.

 d. Click **Next**.

12. Configure cleanse engine settings for the cleanse engine you use.

 - If you use Informatica Address Verification, specify the Configuration file and Parameters file locations and the Correction Type parameter.

 - If you use Business Objects DQ XI, specify the Host, Port, and Sub File parameters for the Business Objects DQ XI cleanse engine.

13. On the Product Usage Toolkit page, select the **Environment Type**.

14. If you have a proxy server, select **Yes**, and enter the proxy server details. Otherwise, select **No**, and click **Next**.

 You can enter the following proxy server details:

 - Proxy server name/IP

 - Proxy server port

 - Proxy server domain name. Leave blank if not applicable.

 - Proxy server user name. Leave blank if not applicable.

 - Proxy server password. Leave blank if not applicable.

15. In the **Deploy** page, select the **No, I will run it later** option, which allows you to manually run the post installation script later.

16. Click **Next**.

    The **Pre-Installation Summary** window appears.

17. After the summary window displays the options you want, click **Install** to start the installation process.

    When the installation completes, the **Install Complete** window appears.

18. Choose to restart the system now or later.

19. Click **Done** to exit the Process Server installer.

    After installation, you must perform additional configuration for the cleanse engine according to the instructions in the *Multidomain MDM Cleanse Adapter Guide*.

Installing the Process Server in Console Mode

You can install the Process Server in console mode on UNIX.

Note: When you install the Process Server on RedHat Linux, do not use the root user. The root user does not have a `.profile`, which InstallAnywhere requires. Instead, create and use a separate user profile to install the Process Server.

1. Start the application server.

2. Open a command prompt, and navigate to the Process Server installer in the following directory:

   ```
   <MDM Hub distribution directory>/<operating system name>/mrmcleanse
   ```

3. Run the following command from the command prompt:

   ```
       ./hub_cleanse_install.bin -i console
   ```

4. Enter the number of the locale you want to choose for the installation, and then press **Enter**.

   The introduction information about the installation appears.

5. Press **Enter**.

   The license agreement appears.

6. Read the License Agreement. Type **Y** to accept the license agreement, or type **N** if you do not want to accept the license agreement and want to exit the installation program.

7. Press **Enter**.

   If you entered **Y** in the preceding step, information about the installation folder appears.

8. Choose the folder for the Process Server installation.

   - To choose the default location, press **Enter**.

   - To change the path, type the absolute path of the installation folder, and press **Enter**.

9. Confirm the location of the installation folder. Type **Y** to confirm the installation folder, or type **N** to change the installation folder.

10. Press **Enter**.

    The prompt for the license file location appears.

11. Enter the absolute path of the license file, and press **Enter**.

    A list of application server options appears.

12. Type the number for the application server that you want to select, and press **Enter**.

The application server information appears.

13. Configure the JBoss settings.

   a. Specify the application server installation directory, and press **Enter**.

      The JBoss application server configuration name information appears.

   b. Specify the configuration name. The default value is `standalone`.

   c. Press **Enter**.

      The JBoss Pre-requisites warning appears.

   d. Press **Enter**.

   e. Specify the remote port.

      Note: If the JBoss port conflicts with the default database port, then change one of the ports to resolve the conflict.

14. Press **Enter**.

15. Configure the cleanse engine settings.

    - If you use Informatica Address Verification, configure the following parameters:
       - Specify the configuration file location, and press **Enter**.
       - Specify the parameters file location, and press **Enter**.
       - Specify the default correction type, and press **Enter**.
    - If you use Business Objects DQ XI, configure the following parameters:
       - Specify the host name, and press **Enter**.
       - Specify the port, and press **Enter**.
       - Specify the sub file, and press **Enter**.

16. From the Product Usage Toolkit options, select the environment type. Type `1` for Production, type `2` for Test/QA, or type `3` for Development, and then press **Enter**.

17. Select whether you have a proxy server. Press **Enter** for Yes. Otherwise, type `2` for No and then press **Enter**.

    You can enter the following proxy server details:

    - Proxy server name/IP
    - Proxy server port
    - Proxy server domain name. Leave blank if not applicable.
    - Proxy server user name. Leave blank if not applicable.
    - Proxy server password. Leave blank if not applicable.

    The summary of the installation choices appears.

18. Choose whether you want to run the `postInstallSetup` script as part of the installation, or run it manually later.

19. Press **Enter**.

    The summary of the installation choices appears.

20. Verify the information in the pre-installation summary. If the information is correct, press **Enter** to start the installation. If you need to make changes, type `BACK` to the specific information and make changes.

    The Hub Server is installed according to the configuration information you provide. When the process is complete, the installation complete information appears.

21. Press **Enter**.

The Process Server is installed according to the information you specify, and the install complete information appears.

22. Press **Enter** to exit the installer.

Installing the Process Server in Silent Mode

You can install the Process Server in silent mode. Before you start the silent installation, ensure that you configured the silent installation properties file.

Note: When you install the Process Server on RedHat Linux, do not use the root user. The root user does not have a `.profile`, which InstallAnywhere requires. Instead, create and use a separate user profile to install the Process Server.

1. Start the application server.

2. Open a command prompt, and run the following command:

    On UNIX. `./hub_cleanse_install.bin -f <Path to the Process Server silent installation properties file>`

    On Windows. `hub_cleanse_install.exe -f <Path to the Process Server silent installation properties file>`

    The silent installer runs in the background. The process can take a while.

3. If you ran the `postInstallSetup` script for the Process Server as part of the silent installation, check `postinstallSetup.log` to verify that the installation was successful.

    The log file is in the following directory: `<MDM Hub installation directory>/hub/cleanse/logs`.

Installing the Process Server on Nodes in the Cluster

In application server cluster environments, install the Process Server on all nodes of the cluster to which you must deploy the Process Server application. You must complete the installation on one node of a cluster before you proceed to install on another node of a cluster.

For example, a JBoss cluster has two nodes that run in host1 and host2 and use RMI ports 4447 and 4448. You need to install the Process Server on node1 and node2. You must complete the Process Server installation on any one node, such as node2, before you start installation on the other node, node1.

Ensure that the directory structure of the Process Server installation is the same on all the nodes.

Note: When you install the Process Server on RedHat Linux, do not use the root user. The root user does not have a `.profile`, which InstallAnywhere requires. Instead, create and use a separate user profile to install the Process Server.

1. Start the JBoss application server on each cluster node.

2. Open a command prompt, and navigate to the following directory:

    `<MDM Hub distribution directory>/<operating system name>/mrmcleanse`

3. Run the following file on each cluster node to start the Process Server installer:

    On UNIX. `./hub_cleanse_install.bin`

On Windows. `hub_cleanse_install.exe`

4. Select the language for the installation, and then click **OK**.

   The **Introduction** window appears.

5. Click **Next**.

   The **License Agreement** window appears.

6. Select the **I accept the terms of the License Agreement** option, and then click **Next**.

   The **Choose Install Folder** window appears.

7. Choose the default location to install the Process Server, or browse to choose a different location. Click **Next**.

   Important: Process Server fails to load if the total length of the path exceeds 256 characters or includes spaces in the directory or folder names.

   On UNIX, the **Choose Link Folder** window appears.

   On Windows, the **Choose Shortcut** Folder window appears.

8. Select a location for the product icons, and click **Next**.

   The **Enter Location of License File** window appears.

9. Click **Choose** to select a license file, and click **Next**.

   The **Application Server** window appears.

10. Select **JBoss**, and then click **Next**.

    The **JBoss Application Server Home** window appears.

11. Configure the following JBoss settings:

    a. Specify the application server installation directory, and then click **Next**.

       The **JBoss Application Server Configuration Name** window appears.

    b. Enter `standalone`, and then click **Next**.

       The default value is `standalone`.

       The **JBoss Application Server Port** window appears.

    c. Specify the remote port of the cluster node that is running on the machine.

       Note: The JBoss port can conflict with the default database server port. If ports conflict, change one of the ports to resolve the conflict. For more information on changing ports, see the JBoss documentation.

12. Configure cleanse engine settings for the cleanse engine you use.

    - If you use Informatica Address Verification, specify the Configuration file and Parameters file locations and the Correction Type parameter.

    - If you use Business Objects DQ XI, specify the Host, Port, and Sub File parameters for the Business Objects DQ XI cleanse engine.

13. On the Product Usage Toolkit page, select the **Environment Type**.

14. If you have a proxy server, select **Yes**, and enter the proxy server details. Otherwise, select **No**, and click **Next**.

    You can enter the following proxy server details:

    - Proxy server name/IP

    - Proxy server port

- Proxy server domain name. Leave blank if not applicable.

- Proxy server user name. Leave blank if not applicable.

- Proxy server password. Leave blank if not applicable.

15. In the **Deploy** page, select the **No, I will run it later** option, which allows you to manually run the post installation script later.

16. Click **Next**.

    The **Pre-Installation Summary** window appears.

17. After the summary window displays the options you want, click **Install** to start the installation process.

    When the installation completes, the **Install Complete** window appears.

18. Choose to restart the system now or later.

19. Click **Done** to exit the Process Server installer.

20. Restart the JBoss application server on each cluster node.

CHAPTER 7

Process Server Post-Installation Tasks

This chapter includes the following topics:

Copy the Installation Log Files

The installation log files are useful for troubleshooting the Process Server installation process. Copy the log files to the installation documentation directory. Informatica Global Customer Support might request copies of the log files if you contact them regarding installation issues.

The following table describes the different types of installation log files:

Log File Type	Description
Installation log	- **File name.** `Informatica_MDM_Cleanse_Match_Server_Install_<timestamp>.xml` - **Location.** `<MDM Hub installation directory>/hub/cleanse/UninstallerData/Logs` - **Contents.** Directories created, names of the files installed and commands run, and status for each installed file.
Installation prerequisites log	- **File name.** `installPrereq.log` - **Location.** `<MDM Hub installation directory>/hub/cleanse/Logs` - **Contents.** Logs of prerequisite checks performed by the installer.
Debug log	- **File name.** `infamdm_installer_debug.txt` - **Location.** `<MDM Hub installation directory>/hub/cleanse/` - **Contents.** Detailed information about the choices that are made during installation and the actions performed by the installer.

Log File Type	Description
Post-installation setup log	- **File name.** `postInstallSetup.log` - **Location.** `<MDM Hub installation directory>/hub/cleanse/logs` - **Contents.** Summary of actions performed by the installer during the post-installation process and the errors in the post-installation process.
Process Server log	- **File name.** `cmxserver.log` - **Location.** `<MDM Hub installation directory>/hub/cleanse/logs` - **Contents.** Summary of the Process Server operations.
JBoss log	- **File name.** `server.log` - **Location.** `<JBoss installation directory>/standalone/log` - **Contents.** Contains JBoss event logs and error messages.

Verify the Version and Build Number

Ensure that the correct version and build number of the Process Server is installed.

1. Open a command prompt, and navigate to the following directory: `<MDM Hub installation directory>/hub/cleanse/bin`

2. To verify the Process Server version and build number, run the following command:

    On UNIX. `versionInfo.sh`

    On Windows. `versionInfo.bat`

    Note: For AIX systems, change the `versionInfo.sh` script to run Java from the `<Java home>/jre/bin` directory.

Deploy the Process Server Application (Conditional)

If you have a scenario that requires deployment of the Process Server application, deploy the Process Server application.

You need to deploy the Process Server application in any of the following scenarios:

- The installation is in an application server multi-node environment or cluster environment.
- The installation completes, but the `postInstallSetup` script that you run during the installation fails.
- You skipped the `postInstallSetup` script during the installation.

Perform the following steps to deploy the Process Server application:

1. If the Process Server is not installed on the same application server instance as the Hub Server, create data sources.

2. Deploy the Process Server application `siperian-mrm-cleanse.ear`.

Step 1. Creating Data Sources (Conditional)

If the Process Server is not deployed on the same application server instance as the Hub Server, configure the data sources for the application server.

To configure the application server to create data sources for the Process Server, perform the following tasks:

1. Copy the `<datasources>` definition for the MDM Hub Master Database and each Operational Reference Store from the `standalone-full.xml` file on the Hub Server machine to the `standalone-full.xml` file on the Process Server machine.
   The `standalone-full.xml` file is in the following location:

   `<JBoss installation directory>/standalone/configuration`

2. On the Process Server machine, add the following directory structure under `<JBoss installation directory>\modules`:
   `com\informatica\mdm\jdbc\main`

3. On the Hub Server machine, copy the following files from `<JBoss installation directory>\modules`:

   - module.xml
   - Supported version of the JDBC drivers

4. On the Process Server machine, paste the copied files to the following directory: `<JBoss installation directory>\modules\com\informatica\mdm\jdbc\main`.

Step 2. Deploying the Process Server Application (Conditional)

If the installation is in an application server multi-node environment or cluster environment, or the `postInstallSetup` script was skipped or fails, deploy the Process Server application.

Deploy the Process Server application on the same machine on which you installed the Process Server. The Process Server application must be able to find the Process Server installation associated with it. Therefore, do not copy the application EAR file for deployment on another machine. For example, you install the Process Server on a test machine, and then deploy the application on the production machine. The application that you deploy on the production machine cannot find the installation on the test machine.

Deploy the Process Server application by using one of the following procedures:

Using a script for deployment

You run the `postInstallSetup` script to deploy the Process Server application.

Manual deployment

You manually deploy the Process Server application.

Using a Script for Deploying the Process Server Application (Conditional)

You can run the `PostInstallSetup` script to deploy the Process Server application.

Important: If the installation is in an application server multi-node or a cluster environment, first deploy the Process Server application on one node, and then deploy the Process Server application on the other nodes. Ensure that you deploy the Process Server application on the same machine on which you installed the Process Server.

1. Open a command prompt, and change to the following directory:

   `<MDM Hub installation directory>/hub/cleanse`

2. Run the `PostInstallSetup` script.

   On UNIX. `./postInstallSetup.sh`

   On Windows. `postInstallSetup.bat`

Manually Deploying the Process Server Application (Conditional)

You can manually deploy the Process Server application. You must deploy the Process Server application from the Process Server installation directory.

Important: If the installation is in an application server multi-node or a cluster environment, first deploy the Process Server application on one node, and then deploy the Process Server application on the other nodes. Ensure that you deploy the Process Server application on the same machine on which you installed the Process Server.

1. Stop the JBoss application server.

2. If you have an existing deployment, delete the `siperian-mrm-cleanse.ear` deployment file from the following JBoss deployment directory:

   `<JBoss installation directory>\standalone\deployments`

3. Copy the `siperian-mrm-cleanse.ear` deployment file from the Process Server installation directory to the JBoss deployment directory.

4. Start the JBoss application server.

For more information about deploying applications, see the JBoss documentation.

Enabling Secured Communications for Process Servers

Each Process Server requires a signed certificate. Use the Hub Console to enable the HTTPS protocol and specify a secure port for each Process Server.

1. Create signed certificates for the Process Servers in the certificate store.

2. Ensure that the application server can access the certificate store.

3. Log in to the Hub Console.

4. Select an Operational Reference Store database.

5. Acquire a write lock.

6. In the **Utilities** workbench, select **Process Server**.

7. Select a Process Server and click the **Edit Process Server** icon.

   The Add/Edit Process Server dialog box opens.

8. Verify that the **Port** is a secure port.

9. Select the **Enable Secured Connection (HTTPS)** check box.

10. Click **OK**.
11. Verify other Process Servers that appear in the list.

Configuring the Process Server for Search

You can search for data within the searchable business entity types. Before you can search for data, configure search on the Process Server.

For more information about configuring search, see the *Multidomain MDM Configuration Guide*.

Configure Match Population

The match population contains the standard population set to use for the match process. Each supported country, language, or population has a standard population set. You must enable the match population to use for the match rules.

The match population is available as a `population.ysp` file with the Informatica MDM Hub installation. The population name is the same as the ysp file name. If you add a Japanese population, and want to use the Person_Name_Kanji match field, add _Kanji to the population name. For example, Japan_Kanji or Japan_i_Kanji. If you do this, the standard Person_Name match field is not available.

The population that you use must be compatible with the SSA-Name3 version of the MDM Hub. If you need additional population files or if you need an updated population file to upgrade to a later version, contact

Informatica Global Customer Support. The first population file that you request with the product is free. You might need population files for other countries or you might need an updated population file to upgrade to a later version of the MDM Hub.

Enabling Match Population

You must enable the match population to use for the match rules.

1. Copy the `<population>.ysp` files to the following location:

   On UNIX. `<infamdm_install_directory>`/hub/cleanse/resources/match

   On Windows. `<infamdm_install_directory>`\hub\cleanse\resources\match

2. In the C_REPOS_SSA_POPULATION metadata table, verify that the population is registered.

   The seed database for the MDM Hub installation has some populations registered in the C_REPOS_SSA_POPULATION table, but not enabled.

3. Restart the Process Server after you enable populations.

4. Log in to the Hub Console to verify that the population is enabled.

   The population appears in the **Match/Merge Setup** user interface for base objects.

Configuring the Process Server with Cleanse Engines

After you install the Process Server, you can configure a cleanse engine with the Process Server.

For more information about cleanse engine configuration, see the *Multidomain MDM Cleanse Adapter Guide*.

CHAPTER 8

ActiveVOS Post-Installation Tasks for the Application Server

This chapter includes the following topics:

Edit the ActiveVOS Security Domain in JBoss

Enable container-based authentication in JBoss.

1. Open the `standalone-full.xml` file is in the following directory:

   `<JBoss installation directory>/standalone/configuration`

2. In the `security-domain name="ActiveVOS"` element, replace the `login-module` configuration with the following configuration:

   ```
   <login-module code="RealmUsersRoles" flag="required">
               <module-option name="usersProperties" value="${jboss.server.config.dir}/
   application-users.properties"/>
               <module-option name="rolesProperties" value="${jboss.server.config.dir}/
   application-roles.properties"/>
               <module-option name="realm" value="ApplicationRealm"/>
               <module-option name="unauthenticatedIdentity" value="anonymous"/>
           </login-module>
   ```

3. If the JBoss application server is running, restart the server.

Create a Trusted User in JBoss Environments

To use the ActiveVOS workflow engine, create a trusted user with the role of abTrust, abServiceConsumer, and abTaskClient in the application server. The trusted user is trusted by MDM Hub and by ActiveVOS. The user facilitates secure communication between the MDM Hub and ActiveVOS.

The trusted user is the same user as the ActiveVOS workflow adapter user in the Hub Console. The name of the trusted user cannot be the same name as the application server administrative user.

1. From the command prompt, run add-user.bat.

- In UNIX. `<JBoss install director>/bin/add-user.sh`

- In Windows. `<JBoss install director>\bin\add-user.bat`

2. Answer the prompts that appear.

   Note: The prompt displays the default value in brackets. Press **Enter** to use the default value and go to the next prompt.

   What type of user do you wish to add? a) Management User or b) Application User

   Enter `b` to select Application User.

   Realm (ApplicationRealm)

   Enter the same realm name that you specified in the `login-module` that you added to the `standalone-full.xml` file.

   Username

   Enter the user name of the trusted user.

   Password

   Enter a password that complies with the JBoss password standard.

   What roles do you want this user to belong to?

   Enter `abTrust,abServiceConsumer,abTaskClient`.

   About to add user <username> for realm <realmname>. Is this correct?

   To add the user, enter `yes`.

   Is this new user going to be used for one AS process to connect to another AS process?

   Enter `yes`.

3. Restart the application server.

CHAPTER 9

ActiveVOS Post-Installation Tasks for the Business Entity Adapter

This chapter includes the following topics:

ActiveVOS Web Applications

When you install the bundled, licensed version of the ActiveVOS Server, you are also licensed to use two ActiveVOS web applications. After you add users to the application server container, you can use these applications.

You use the web applications for different purposes:

ActiveVOS Console

Administrators use the ActiveVOS Console to manage deployed processes, the alerting system, and endpoint locations. You can also configure the engine for performance monitoring and management.

ActiveVOS Central

Business users can use ActiveVOS Central to manage tasks, requests, and reports. However, in general, business users use an Data Director (IDD) application to manage tasks because they can open the entities to review from the Task Manager.

To use ActiveVOS Central, you must add the MDM Hub users to the application server container.

For more information about the web applications, see the Informatica ActiveVOS documentation.

Configuring the ActiveVOS URNs for the Business Entity Workflow Adapter

The ActiveVOS Server has two predefined uniform resource names (URNs) that it uses internally. You need to update the URL in the URN mappings to use the host name and the port number where the ActiveVOS Server runs.

1. Launch the ActiveVOS Console. In a browser, type the following URL, substituting the correct host name and port number:

    Encrypted connections.`https://[host]:[port]/activevos`

    Non-encrypted connections.`http://[host]:[port]/activevos`

2. In the ActiveVOS Console, on the Home page, click **Administration > Configure Server > URN Mappings**.

3. For the following URNs, update the paths to reflect the host name and port number of the ActiveVOS Server:

URN	URL Path
ae:internal-reporting	**Encrypted connections.** `https://[host]:[port]/activevos/internalreports` **Non-encrypted connections.** `http://[host]:[port]/activevos/internalreports`
ae:task-inbox	**Encrypted connections.** `https://[host]:[port]/activevos-central/avc` **Non-encrypted connections.** `http://[host]:[port]/activevos-central/avc`

4. Verify that **urn:mdm:service** is mapped to the host name and port number of the MDM Hub Server:

    Encrypted connections.`https://[host]:[port]/cmx/services/BeServices`

    Non-encrypted connections.`http://[host]:[port]/cmx/services/BeServices`

Set the ActiveVOS Protocol to HTTPS

To enable secure communication between ActiveVOS and the MDM Hub, set the protocol to HTTPS in the Hub Console Workflow Manager.

You must first configure the application server for HTTPS communications.

1. Start the Hub Console.

2. Acquire a write lock.

3. Click **Workflow Manager** under the Configuration workbench.

4. In the Workflow Manager, click the **Workflow Engines** tab.

5. Select the ActiveVOS workflow engine, and then click the **Edit** button.

6. In the Edit Workflow dialog box, set the protocol to HTTPS.

7. In a WebLogic environment, in the Edit Workflow dialog box, enter the user name and password of the user that belongs to the abAdmin role.

Configure the Primary Workflow Engine

To configure the primary workflow engine, add a workflow engine for ActiveVOS workflows based on business entities. The secondary workflow engine is for existing customers who want to process existing tasks with a deprecated workflow engine.

1. In the Hub Console, click **Workflow Manager** in the Configuration workbench.
2. Acquire a write lock.
3. Select the **Workflow Engines** tab and click the **Add** button.
4. In the **Add Workflow** dialog box, enter the workflow engine properties.

   The following table describes the workflow engine properties:

Field	Description
Workflow Engine	The display name of the workflow engine
Adapter Name	Select **BE ActiveVOS** for the ActiveVOS workflow adapter based on business entities.
Host	The host name of the Informatica ActiveVOS instance.
Port	The port name of the Informatica ActiveVOS instance.
Username	The user name of the trusted user.
Password	The password of the trusted user.
Protocol	The protocol for communication between the MDM Hub and ActiveVOS. The protocol can be http or https.

5. Click **OK**.

Configure the MDM Identity Services for ActiveVOS

If you use embedded ActiveVOS, ensure that you configure ActiveVOS to use MDM Identity Services. To configure the MDM Identity Services for ActiveVOS, use the ActiveVOS Console to set the Identity Services password to the password of the MDM Hub workflow engine user.

1. In the ActiveVOS console, select **Admin** > **Configure Services** > **Identity Services**.
2. In the Provider Configuration section, enable the **Enable** check box and select **MDM** from the **Provider Type** list.
3. In the Connection tab, enter the password of the MDM Hub user with the user name `admin`.

   Note: If you later change the password for the admin user, you must enter the new password in the ActiveVOS identity services settings.

4. Click **Update**.

5. Test that ActiveVOS can log in to the MDM Hub as the `admin` user, and that ActiveVOS can retrieve a list of roles for the user you specify as the **User for test**.

    a. Select the **Test** tab.

    b. In the **User for test** field, enter an MDM Hub user that is assigned to a role.

    c. Click **Test Settings**.

        Note: The test fails if an Operational Reference Store is not configured, the user for test does not belong to a role, or the role name contains spaces.

Configure Tasks

Before you begin using task workflows in Informatica Data Director, configure task templates, task triggers, and task types in the Provisioning tool.

For more information, see the *Multidomain MDM Provisioning Tool Guide*.

CHAPTER 10

Resource Kit Installation

This chapter includes the following topics:

Setting Up the MDM Hub Sample Operational Reference Store

Before you can use the MDM Hub sample Operational Reference Store, you must set it up. Before you install the Resource Kit, set up the MDM Hub sample Operational Reference Store. To set up the MDM Hub sample Operational Reference Store, create an Operational Reference Store and import `mdm_sample` into it.

1. Create an MDM Hub sample Operational Reference Store user on the machine on which the database is installed.

    On UNIX, ensure that you create the user name with 8 characters or less.

2. Add the MDM Hub sample Operational Reference Store user to the DB2ADMNS and DB2USERS user groups.

3. Navigate to the following location in the distribution directory:

    On UNIX. `<distribution directory>`/database/bin

    On Windows. `<distribution directory>`\database\bin

4. Run the following command:

    On UNIX. `./sip_ant.sh create_ors`

    On Windows. `sip_ant.bat create_ors`

5. Answer the prompts that appear.

    Note: The prompt displays default text in brackets. Press **Enter** to use the default value and go to the next prompt.

    Enter database type. (ORACLE, MSSQL, DB2)

    Database type. Specify `DB2`.

Enter the Operational Reference Store database host name. [localhost]

Name of the machine that hosts the database. Default is `localhost`.

Enter the Operational Reference Store database port number. [50000]

Port number that the database uses.Default is `50000`.

Enter the database name. [SIP97]

Name of the database. Default is `SIP97`.

Connect URL. [jdbc:db2://*\<host name\>*:*\<port\>*/\<database name\>]

Connect URL for the database connection.

Enter the Operational Reference Store database user name. [cmx_ors]

User name of the MDM Hub sample Operational Reference Store database. Default is `cmx_ors`.

Enter the Operational Reference Store database user password.

Password of the MDM Hub sample Operational Reference Store user.

Enter a locale name from the list: de, en_US, fr, ja, ko, zh_CN. [en_US]

Operating system locale. Default is en_US.

Enter the DBA user name. [DB2ADMIN]

User name of the administrative user. Default is `DB2ADMIN`.

Enter the DBA password.

Password of the administrative user.

6. After you create the sample Operational Reference Store, review `sip_ant.log` in the following directory:

   On UNIX. `<distribution directory>`/database/bin

   On Windows. `<distribution directory>`\database\bin

   The `sip_ant.log` file logs any errors that might occur when you run the `sip_ant` script to create the Operational Reference Store.

7. To import `mdm_sample`, run the following command:

   On UNIX. `./sip_ant.sh import_schema`

   On Windows. `sip_ant.bat import_schema`

8. Answer the prompts that appear.

   Note: The prompt displays default text in brackets. Press **Enter** to use the default value and go to the next prompt.

   Enter database type. (ORACLE, MSSQL, DB2)

   Database type. Specify `DB2`.

   Enter the Operational Reference Store database host name. [localhost]

   Name of the machine that hosts the database. Default is `localhost`.

   Enter the Operational Reference Store database port number. [50000]

   Port number that the database uses.Default is `50000`.

   Enter the database name. [SIP97]

   Name of the database. Default is `SIP97`.

   Connect URL. [jdbc:db2://_<host name>_:_<port>_/<database name>]

   Connect URL for the database connection.

   Enter the Operational Reference Store database user name. [cmx_ors]

   Name of the MDM Hub sample Operational Reference Store database. Default is `cmx_ors`.

   Enter the Operational Reference Store database user password.

   Name of the MDM Hub sample Operational Reference Store database user.

   Enter a locale name from the list: de, en_US, fr, ja, ko, zh_CN. [en_US]

   Operating system locale. Default is en_US.

   Enter the path to the ZIP dump file. [_<distribution directory>_\resources\database]

   Path to the `mdm_sample.zip` file.

   Enter the name of the ZIP dump file. [mdm_sample.zip]

   Name of the ZIP dump file. Default is `mdm_sample.zip`.

Registering the Informatica MDM Hub Sample Operational Reference Store

After you set up the MDM Hub sample Operational Reference Store, you must register it. Register the MDM Hub sample Operational Reference Store through the Hub Console.

1. Start the Hub Console.

   The **Change database** dialog box appears.

2. Select the MDM Hub Master Database, and click **Connect**.

3. Start the **Databases** tool under the Configuration workbench.

4. Click **Write Lock** > **Acquire Lock**.

5. Click the **Register database** button.

   The **Informatica MDM Hub Connection Wizard** appears and prompts you to select the database type.

6. Select the type of database, and click **Next**.

7. Configure connection properties for the database.

    a. Specify the connection properties, and click **Next**.

       Specify the connection properties, and click **Next**.

       The **Summary** page appears.

    b. Review the summary, and specify additional connection properties.

       The following table lists additional connection properties that you can configure:

Property	Description
Connection URL	Connect URL. The Connection Wizard generates the connect URL by default. The following example shows the format of the connect URL: `jdbc:db2:@//database_host:port/service_name`
Create data source after registration	Select to create the data source on the application server after registration. **Note:** If you do not select the option, you must manually configure the data source.

8. Click **Finish**.

   The **Registering Database** dialog box appears.

9. Click **OK**.

   The MDM Hub registers the MDM Hub sample Operational Reference Store.

10. Select the MDM Hub sample Operational Reference Store that you registered, and click the **Test database connection** button to test the database settings.

   The Test Database dialog box displays the result of the database connection test.

11. Click **OK**.

   The Operational Reference Store is registered, and the connection to the database is tested.

Installing the Resource Kit in Graphical Mode

You can install the Resource Kit in graphical mode.

Before you install the Resource Kit, you must have installed and configured the MDM Hub.

1. Start the application server.

2. Open a command prompt and navigate to the Resource Kit installer. By default the installer is in the following directory:

   On UNIX. `<distribution directory>/<operating system name>/mrmresourcekit`

   On Windows. `<distribution directory>\windows\mrmresourcekit`

3. Run the following command:

   On UNIX. `hub_resourcekit_install.bin`

   On Windows. `hub_resourcekit_install.exe`

4. Select the language for the installation, and then click **OK**.

The **Introduction** window appears.

5. Click **Next**.

   The **License Agreement** window appears.

6. Select the **I accept the terms of the License Agreement** option, and then click **Next**.

   The **Installation Feature** window appears.

7. Select the Resource Kit features that you want to install and click **Next**.

   You can select the following options:
   Sample Schema

   > Installs the MDM Hub sample schema resources. You must create a sample schema and register it with the Hub Server before you install the sample applications.

   Samples and Utilities

   > Installs the sample applications and utilities.
   > The list of sample applications that are deployed is stored in the `build.properties` file in the following directory:
   >
   > `<Resourcekit_Home>\samples`

   SIF SDK and Javadocs

   > Installs the javadocs, libraries, and resources associated with the SIF SDK.

   BPM SDK

   > Installs the resources associated with the BPM SDK.

   Jaspersoft

   > Copies the Jaspersoft installer to the Resource Kit home.

   SSA-NAME3

   > Copies the SSA-NAME3 installer to the Resource Kit home.

   A message about the requirement of having created and registered a sample schema with the MDM Hub appears.

8. Click **OK**.

   The **Choose Install Folder** window appears.

9. Select the location of the Resource Kit installation.

   • To choose the default location, click **Next**.

   • To enter a path, type the path to the installation folder, and click **Next**.

     Note: The installation fails if you specify a path that has spaces in the directory or folder names.

   • To return to the default installation location, click **Restore Default Folder**.

   • To choose another location, click **Choose**, and then click **Next**.

   On UNIX, the **Choose Link Folder** window appears.

   On Windows, the **Choose Shortcut Folder** window appears.

10. On UNIX, choose a link folder or select the option to not create links, and click Next. On Windows, select the location to create a product icon or select the option not to create a product icon.

    The **Configuration Selection** window appears.

11. Select a configuration option, and click **Next**.

    You can select one of the following options:

Configure Samples

Installs and configures the samples.

Source Only

Installs the sources of samples but does not configure the samples.

If you select **Configure samples**, the **Resource Kit App Server** window appears. If you select **Source only**, the **Pre-Installation Summary** window appears.

12. From the **Resource Kit App Server** window, select the application server on which you want to install the Resource Kit, and click **Next**.

    The **Application Server Home** window for the application server that you select appears.

13. Configure the application server settings.

    a. Specify the application server installation directory, and then click **Next**.

       The **JBoss Application Server Configuration Name** window appears.

    b. Specify the configuration name, and then click **Next**.

       The default value is `standalone`.

    c. Specify the remote port.

    The **Informatica MDM Hub Server** window appears.

14. Enter the information for the Hub Server installation, and click **Next**.

    Enter values in the following fields:
    Server Name

    Name of the server that hosts the Hub Server.

    Server HTTP Port

    Port number of the Hub Server.

    Informatica MDM Administrative Password

    Password to access the MDM Hub.

    MDM Hub Home Directory

    Directory for the Hub Server installation.

    The **Resource Kit ORS ID** window appears.

15. Select a Resource Kit ORS ID from the list, and then click **Next**.

    The list contains the Operational Reference Store IDs that you created. Select an Operational Reference Store ID related to the sample schema.

    If you have not registered the sample schema, you will not see the Operational Reference Store ID for the sample schema. Register the sample Operational Reference Store, and then restart the installation.

    The **Deployment Selection** window appears.

16. Select one of the following options and click **Next**:

    Yes, run it during this installation.

    Deploys and configures the Resource Kit during the installation.

    No, it can be deployed later.

    Select this option to deploy and configure manually at a later time.

If you chose to install the Samples and Utilities feature, you must deploy and configure the Resource Kit in this installation step. If you do not deploy the Resource Kit in this step, you cannot make changes and redeploy the samples by using the postInstallSetup script provided in the Resource Kit.

If you choose to run the post-installation setup manually, you cannot deploy the EAR file by using the postInstallSetup script at a later time. You must manually edit the EAR file and deploy it to make any changes to your installation.

The **Pre-Installation Summary** window appears.

17. Review the Pre-Installation Summary to confirm your installation choices, and then click **Install**.

When the installation completes, the **Install Complete** window appears.

18. Click **Done** to exit the Resource Kit installer.

Installing the Resource Kit in Console Mode

You can install the Resource Kit in console mode.

Ensure that you register the MDM_SAMPLE schema before you install the Resource Kit.

1. Start the application server.

2. Navigate to the following directory in the MDM Hub distribution:

    On UNIX. `<MDM Hub distribution directory>/<operating system name>/resourcekit`

    On Windows. `<MDM Hub distribution directory>/windows/resourcekit`

3. Run the following command from the command prompt:

    On UNIX. `./hub_resourcekit_install.bin -i console`

    On Windows. `hub_resourcekit_install.exe -i console`

4. Enter the number of the locale you want to choose for the installation, and then press **Enter**.

    The introduction information about the installation appears.

5. Press **Enter**.

    The license agreement appears.

6. Read the License Agreement. Type **Y** to accept the terms of the license agreement, or type **N** if you do not want to accept the license agreement and want to exit the installation program.

7. Press **Enter**.

    If you entered **Y** in the preceding step, information about the installation folder appears.

8. Enter the numbers of the Resource Kit features that you want to install separated by commas, and press **Enter**.

    The prompt for the sample schema installation appears.

9. Choose a folder for the Resource Kit installation.

    - To choose the default folder, press **Enter**.

    - To change the path, type the absolute path of the installation folder, and press **Enter**.

10. Confirm the location of the installation folder. Type **OK** to confirm the installation folder or type **Cancel** to change the installation folder.

11. Press **Enter**.

    A list of link location options appears.

12. Enter the number of a link location option.

    The prompt for the link file location appears.

13. Enter the absolute path of the link file, and press **Enter**.

    The source sample configuration options appears.

14. Enter a configuration option, and press **Enter**.

Option	Description
1	Installs and configures the samples
2	Installs the sources of samples but does not configure the samples

    If you enter **1**, a list of application server options appears. If you enter **2**, the pre-Installation summary appears.

15. If you entered **1**, enter the number for the application server that you want to select, and press **Enter**.

    The application server information prompts appear.

16. Configure the JBoss settings.

    a. Specify the application server installation directory, and press **Enter**.

        The information about the JBoss application server configuration name appears.

    b. Specify the configuration name. The default value is `standalone`.

    c. Press **Enter**.

    d. Specify the remote port.

        Note: If the JBoss port conflicts with the default database port, change one of the ports to resolve the conflict.

        The Hub Server information prompts appear.

17. Enter the information for the Hub Server installation, and press **Enter**.

    The following table describes the prompts for the Hub Server installation information:

Prompt	Description
Server Name	Name of the server that hosts the Hub Server.
Server HTTP Port	Port number of the Hub Server.
Informatica MDM Administrative password	Password to access the MDM Hub.
MDM Hub Home Directory	Directory for the Hub Server installation.

    A list of MDM Hub ORS IDs appears.

18. Enter the Operational Reference Store ID of the MDM sample schema, and press **Enter**.

    If you did not register the sample schema, you will not see the Operational Reference Store ID for the sample schema. Register the sample Operational Reference Store, and then restart the installation.

    The deployment selection prompt appears.

19. Choose whether you want to run the `postInstallSetup` script as part of the installation, or run it manually later.

20. Press **Enter**.

    The summary of the installation choices appears.

21. Verify the information in the pre-installation summary. If the information is correct, press **Enter** to start the installation.

    The Resource Kit is installed according to the configuration information you provide. When the process is complete, the installation complete information appears.

22. Press **Enter** to exit the installer.

Installing the Resource Kit in Silent Mode

You can install the Resource Kit without user interaction in silent mode. You might want to perform a silent installation if you need multiple installations, or if you need to install on a machine cluster. A silent installation does not show any progress or failure messages.

Before you run the silent installation for the Resource Kit, you must configure the properties file for the silent installation. The installer reads the file to determine the installation options. The silent installation process might complete successfully even if you provide incorrect settings, such as an incorrect application server path or port. You must ensure that you provide correct settings in the properties file.

Copy the Resource Kit installation files to the hard disk on the machine where you plan to install the Resource Kit. To install in silent mode, complete the following tasks:

1. Configure the installation properties file and specify the installation options in the properties file.

2. Run the installer with the installation properties file.

Configuring the Properties File

Informatica provides a sample properties file that includes the parameters that the installer requires. You can customize the sample properties file to specify the options for the installation. Then run the silent installation.

The silent installer does not validate the settings in the properties files. You must ensure that you specify correct settings and verify them before you run the silent installer.

1. Find the `silentInstallResourceKit_sample.properties` file in the following directory:

    On UNIX. `/silent_install/mrmresourcekit`

    On Windows. `\silent_install\mrmresourcekit`

    After you customize the file, save it. You can rename the file and put it anywhere on the machine.

    Note: In the silent properties file, slash and backslash are special characters. You must enter two of each of these characters when you enter information in the file, such as when you enter an installation path. For example, to enter the path to the server directory, you must enter `\\u1\\infamdm\\hub\\resourcekit`.

2. Create a backup copy of the `silentInstallResourceKit_sample.properties` file.

3. Use a text editor to open the file and change the values of the installation parameters.

4. Save the properties file with a new name such as `silentInstallresourcekit.properties`.

The following table describes the installation parameters that you can change:

Property Name	Description
INSTALLER_UI	Specifies the mode of installation. Set to `silent`.
SIP.INSTALL.TYPE	Specifies the type of installation. Set to `SIPERIAN_SAMPLE_INSTALL`.
SIP.INSTALL.SAMPLE.SCHEMA	Specifies if you want to install the sample schema. Specify one of the following values: - 0. Does not install the sample schema - 1. Installs the sample schema
SIP.INSTALL.SAMPLES	Specifies if you want to install samples and utilities. Specify one of the following values: - 0. Does not install samples and utilities - 1. Installs samples and utilities
SIP.INSTALL.SIF.SDK	Specifies if you want to install the Services Integration Framework (SIF) SDK. Specify one of the following values: - 0. Does not install the SIF SDK - 1. Installs SIF SDK
SIP.INSTALL.BPM.SDK	Specifies if you want to install the BPM SDK. Specify one of the following values: - 0. Does not install the BPM SDK - 1. Installs the SIF SDK
SIP.INSTALL.JASPERSOFT	Specifies if you want to install the Jaspersoft reporting tool. Specify one of the following values: - 0. Does not install the BPM SDK - 1. Installs the SIF SDK
SIP.INSTALL.SSANAME3	Specifies if you want to install SSA-NAME3. Specify one of the following values: - 0. Does not install SSA-NAME3 - 1. Installs SSA-NAME3
USER_INSTALL_DIR	Directory where you want to install the Resource Kit, such as `C\:\ \<infamdm_install_directory>\\hub\\resourcekit`.
RUN_CONFIGURE_FLAG	Specifies if you want to configure samples. - 0. Does not configure samples - 1. Installs and configures samples Default is `1`. If you set the RUN_CONFIGURE_FLAG property to `1`, comment out or set the RUN_CONFIGURE_SETUP property to `0`. To configure samples, ensure that the application server and the Hub Server are started and the sample schema is registered in the Hub Console.
RUN_CONFIGURE_SETUP	Specifies if you want to configure only source samples. - 0. Does not install sources of samples - 1. Installs sources of samples If you set the RUN_CONFIGURE_SETUP property to `1`, comment out or set the RUN_CONFIGURE_FLAG property to `0`. If you set the RUN_CONFIGURE_SETUP property to `1`, you cannot configure and deploy samples later.

Property Name	Description
SIP.AS.CHOICE	Name of the application server. Specify `JBoss`.
SIP.AS.HOME	The path to the JBoss installation directory.
JBOSS.AS.PORT_1	The JBoss port number.
SIP.JBOSS.CONFIGURATION_NAME	The JBoss configuration name. The default value is `standalone`.
SIP.SERVER.NAME	Name of the server on which the Hub Server is deployed.
SIP.SERVER.HTTP.PORT	Port on which the Hub Server is listening.
SIP.ADMIN.PASSWORD	Password to access the Hub Server.
HUB_SERVER_HOME	Directory for the Hub Server installation.
SIP.ORS.ID	Operational Reference Store ID of the MDM Hub sample schema.
RUN_DEPLOYMENT_FLAG	Runs the postInstallSetup script as part of the silent installation. - 0. Does not run the postInstallSetup script - 1. Runs the postInstallSetup script

Running the Silent Installer

After you configure the properties file, you can start the silent installation.

1. Ensure that the application server is running.
2. Open a command window.
3. Run the following command:

   On UNIX. `./hub_resourcekit_install.bin -f` `<location_of_silent_properties_file_for_resourcekit>`

   On Windows. `.\hub_resourcekit_install.exe -f` `<location_of_silent_properties_file_for_resourcekit>`

The silent installer runs in the background. The process can take a while. Check the `postinstallSetup.log` files to verify that the installation was successful.

The log file is available in the following directory:

On UNIX. `<infamdm_install_directory>/logs/postInstall.log`

On Windows. `<infamdm_install_directory>\logs\postInstall.log`

CHAPTER 11

Resource Kit Post-Installation Tasks

This chapter includes the following topic:

Validate the MDM Hub Sample Operational Store

After you set up and register the MDM Hub sample Operational Reference Store, validate the metadata in the MDM Hub sample Operational Reference Store. Validation verifies the completeness and integrity of the metadata that describes the MDM Hub sample Operational Reference Store.

1. In the Hub Console, start the Repository Manager.
2. From the **Select the repository to validate** list, select the MDM Hub sample Operational Reference Store that you registered.
3. Select the **Validate** button.

   The **Select Validation Checks** dialog box appears.
4. Enable all the validation checks, and click **OK**.
5. If validation errors are generated, regenerate MTIP views.

   a. Start the Enterprise Manager and acquire a write lock.

   b. On the ORS databases tab, select the MDM Hub sample Operational Reference Store name.

   The Properties tab of the MDM Hub sample Operational Reference Store opens.

   c. Click the **Regenerate MTIP's** button.

   MTIP views are regenerated and the errors are fixed.

CHAPTER 12

Troubleshooting the MDM Hub

This chapter includes the following topic:

Troubleshooting the Installation Process

If the installation fails, use the following information to troubleshoot the failure.

Cannot start JBoss or launch the Hub Console after installation

After installation, JBoss might not restart after you stop JBoss. When you launch the Hub Console, the Hub Console fails to launch and generates the following error:

```
SIP-09070: Failed to initialize repository layer.
```

To resolve the issue, run the following code in a batch file to restart JBoss:

```
rmdir C:\<JBoss installation directory>\standalone\tmp /s /q
\mkdir C:\<JBoss installation directory>\standalone\tmp
C:\<JBoss installation directory>\bin\standalone.bat -c standalone-full.xml -b 0.0.0.0
```

MDM Hub users cannot login

If you re-create the CMX_SYSTEM schema after installation of the Hub Server, the MDM Hub cannot recognize the hashed passwords. As a result, users cannot log in to the MDM Hub.

To resolve the issue, run the `postInstallSetup` script again manually. This script ensures that the passwords of the MDM Hub users are hashed again and users can log in.

Alternatively, if you do not want to run the `postInstallSetup` script again, run the following commands to migrate the user passwords to hashed passwords and create application users.

On UNIX.

```
cd <MDM Hub installation directory>/server/bin
./sip_ant.sh hash_users_passwords
./sip_ant.sh add_application_users
```

On Windows.

```
cd <MDM Hub installation directory>\server\bin
sip_ant.bat hash_users_passwords
sip_ant.bat add_application_users
```

Note: In a WebSphere environment, the MDM Hub user must have access and write permissions for the following directory:

```
<MDM Hub installation directory>/server/bin/resources/certificates
```

WebLogic instance redirects to Data Director

If you install MDM Hub on a WebLogic port other than 7001, the instance is redirected to Data Director with the following error:

```
javax.faces.application.ViewExpiredException: viewId:/config/config_login.jsf - View /
config/config_login.jsf could not be restored.
```

To resolve the issue, set to the host name and the IP address of the WebLogic host. Do not use localhost.

PostInstallSetUp script fails because the ActiveVOS server deployment times out

When you install the Hub Server, the post-installation setup process might fail after trying to deploy the ActiveVOS server.

To resolve the issue, increase the value of the `deploy.wait.time` property in the `build.properties` file in the following directory:

On UNIX. `<infamdm installation directory>/hub/server/bin`

On Windows. `<infamdm installation directory>\hub\server\bin`

Operational Reference Store registration fails because the connection times out

When you register the Operational Reference Store (ORS) in a JBoss cluster node, the ORS registration fails with a connection timeout error similar to the following:

```
SIP-10313: SIP-09061: Failed connecting with provider url abc03.
java.net.ConnectException: JBAS012144: Could not connect to remote://abc03:9999. The
connection timed out.
```

To resolve the issue, when you register an ORS, disable the JBoss administrative security, and then enable the JBoss administrative security after ORS registration.

Hub Server deployment fails because JBoss composite operation fails

When you deploy the Hub Server in the JBoss application server, the Hub Server deployment fails with the following error:

```
JBAS014653: Composite operation failed and was rolled back. Steps that failed:" =>
{"Operation step-2" => {
        "JBAS014671: Failed services" => {"jboss.web.deployment.default-host./cmx"
=> "org.jboss.msc.service.StartException in service jboss.web.deployment.default-host./
cmx:
        org.jboss.msc.service.StartException in anonymous service: JBAS018040:
Failed to start context
Caused by: org.jboss.msc.service.StartException in anonymous service: JBAS018040: Failed
to start context"
```

To resolve the issue, perform the following steps:

1. Stop the JBoss application server.

2. Use a text editor to open the `standalone.xml` file in the following directory:
   On UNIX. `<JBoss Installation Directory>/standalone/configuration`

   On Windows. `<JBoss Installation Directory>\standalone\configuration`

3. Find the following code:
   ```
   <subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
           <deployment-scanner path="deployments" relative-to="jboss.server.base.dir"
   scan-interval="5000"/>
   </subsystem>
   ```

4. Add the `deployment-timeout="300"` attribute as shown in the following sample code:

```
<subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
        <deployment-scanner path="deployments" relative-to="jboss.server.base.dir"
scan-interval="5000" deployment-timeout="300"/>
</subsystem>
```

5. Save changes, and start the JBoss application server.
   The default deployment timeout value is `60`, which is changed to `300`.

6. Deploy the Hub Server.

The Hub Server cannot connect to the cmx_system schema

To verify that the Hub Server cannot connect to the cmx_system schema, review the application server log.

To resolve the issue, resolve the database connection issue. Use the application server console to test the connection to the database. If you cannot resolve the connection to the cmx_system schema, re-create the cmx_system schema.

Failed to verify the need to tokenize records

When you run the Match process, you might receive the following error:

```
SIP-16062: Failed to verify the need to tokenize records.
```

Verify the following environment variable settings:

- The library path environment variable must contain the following path:

  On UNIX. *<infamdm_install_directory>*/hub/cleanse/lib

  On Windows. *<infamdm_install_directory>*\hub\cleanse\lib

  The library path environment variable depends on the operating system:

  - AIX. `LIBPATH`

  - HP-UX. `SHLIB_PATH`

  - Solaris, Suse, or RedHat. `LD_LIBRARY_PATH`

  - Windows. `PATH`

- The `SSAPR` environment variable must include the following path for all users:

  On UNIX. *<infamdm_install_directory>*/server_install_dir>/cleanse/resources

  On Windows. *<infamdm_install_directory>*\server_install_dir>\cleanse\resources

major.minor version errors when loading the Process Server

If you see multiple `major.minor` console errors when you try to load the Process Server, check that the system has the correct Java version installed.

Java XAException

When you restart JBoss after you install the Hub Server, the following exception might be generated:

```
javax.transaction.xa.XAException
```

You can ignore the exception.

Informatica Address Verification exception during certification

Informatica Address Verification generates an exception during certification. Ensure that the stack size for the JVM is sufficient.

1. Navigate to the bin directory under the JBoss root directory.

2. Open the following file in a text editor.

On UNIX. `run.sh`

On Windows. `run.bat`

3. Set the JAVA_OPTS variable as follows:

    `JAVA_OPTS=${JAVA_OPTS} -Xss2000k`

4. Save and close the file.

Operational Reference Store does not have a workflow engine configured

If you install the MDM Hub and then import an Operational Reference Store (ORS) from a previous version, you see a fatal error that indicates that the ORS does not have a workflow engine configured. This error occurs because the Siperian BPM workflow engine is not registered by default. Use the Workflow Manager to register the Siperian BPM workflow engine with the name that the ORS expects to find.

CHAPTER 13

Uninstallation

This chapter includes the following topics:

Uninstallation Overview

To uninstall the MDM Hub, you need to remove the Process Server, the Hub Server, and the Hub Store from the MDM Hub implementation.

Use the following steps to uninstall the MDM Hub:

1. Uninstall the Hub Store.
2. Uninstall the Process Server.
3. Uninstall the Hub Server.

Uninstalling the Hub Store

You can uninstall the Hub Store by dropping the Hub Store schemas and removing the user logins for the Hub Store schemas. Before you drop the Hub Store schemas, use the Hub Console to unregister the Hub Store schemas.

You must have administrator privileges to drop the Hub Store schemas.

1. Start the Hub Console.

2. Click the **Databases** tool under the **Configuration** workbench.

    The **Database Information** page appears.

3. Click **Write Lock** > **Acquire Lock**.

4. From the list of databases, select the Operational Reference Store to unregister.

5. Click the **Unregister database** button.

    The Databases tool prompts you to confirm unregistering the Operational Reference Store.

6. Click **Yes**.

7. Use the command line processor to connect to the IBM DB2 instance.

8. Use the following command for each Hub Store schema to drop the schema:

    ```
    DROP TABLE ERRORSCHEMA.ERRORTABLE
    CALL SYSPROC.ADMIN_DROP_SCHEMA('<Schema Name>', NULL, 'ERRORSCHEMA', 'ERRORTABLE')
    ```

Uninstalling the Process Server in Graphical Mode

You can uninstall the Process Server in graphical mode.

Uninstalling the Process Server in Graphical Mode On UNIX

To uninstall the MDM Hub, you must remove the Process Server. You must perform the steps to uninstall the Process Server for each Process Server in the MDM Hub implementation.

1. Stop the application server.

2. Navigate to the following directory:

    ```
    <infamdm_install_directory>/hub/cleanse/UninstallerData
    ```

3. Run the uninstaller.

    ```
    ./"Uninstall Informatica MDM Hub Cleanse Match Server"
    ```

4. Click **Uninstall**.

    When the uninstallation process is complete, the Uninstall Complete window appears.

5. Click **Done**.

Uninstalling the Process Server in Graphical Mode On Windows

To uninstall the MDM Hub, you must remove the Process Server. You must perform the steps to uninstall the Process Server for each Process Server in the MDM Hub implementation.

1. Stop the application server.

2. Click **Start** and then click **Programs** > **Infamdm** > **Hub** > **Cleanse** > **Uninstaller Data** > **Uninstall Informatica MDM Hub Cleanse Match Server**.

    The Uninstall introduction window appears.

3. Click **Uninstall**.

    When the uninstallation process is complete, the Uninstall Complete window appears.

4. Click **Done**.

Uninstalling the Hub Server in Graphical Mode

You can uninstall the Hub Server in graphical mode.

Uninstalling the Hub Server in Graphical Mode on UNIX

To uninstall the MDM Hub, you must remove the Hub Server from the MDM Hub implementation.

1. Ensure that you stop the application server.
2. Navigate to the following directory:

    `<infamdm_install_directory>/hub/server/UninstallerData`
3. Run the uninstaller.

    `./"Uninstall Informatica MDM Hub Server"`

    The Uninstall introduction window appears.
4. Click **Uninstall**.

    When the uninstallation process is complete, the Uninstall Complete window appears.
5. Click **Done**.

Uninstalling the Hub Server in Graphical Mode on Windows

To uninstall the MDM Hub, you must remove the Hub Server from the MDM Hub implementation.

1. Ensure that you stop the application server.
2. Click **Start** and then click **Programs** > **Infamdm** > **Hub** > **Server** > **UninstallerData** > **Uninstall Informatica MDM Hub Server**.

    The Uninstall introduction window appears.
3. Click **Uninstall**.

    When the uninstallation process is complete, the Uninstall Complete window appears.
4. Click **Done**.

Uninstalling the Resource Kit in Graphical Mode

You can uninstall the Resource Kit in graphical mode.

Uninstalling the Resource Kit in Graphical Mode on UNIX

To uninstall the Resource Kit, you must remove the Resource Kit from the MDM Hub implementation.

1. Stop the application server.
2. Navigate to the following directory:

    `<infamdm_install_directory>/hub/resourcekit/UninstallerData`
3. Run the following command:

    `./"Uninstall Informatica MDM Hub Resource Kit"`

    The **Uninstall Informatica MDM Hub Resource Kit** window appears.

4. Click **Uninstall**.

   The **Uninstall Complete** window appears with a list of items that could not be removed.

5. Click **Done**.

6. Manually remove the following directory:

   `<infamdm_install_dir>/hub/resourcekit`

Uninstalling the Resource Kit in Graphical Mode on Windows

To uninstall the Resource Kit, you must remove the Resource Kit from the MDM Hub implementation.

1. Stop the application server.

2. Navigate to the following directory:

   `<ResourceKit_install_dir>\deploy\UninstallerData`

3. Double-click `Uninstall Informatica MDM Hub Resource Kit.exe`

   The **Uninstall Informatica MDM Hub Resource Kit** window appears.

4. Click **Uninstall**.

   The **Uninstall Complete** window appears with a list of items that could not be removed.

5. Click **Done**.

6. Manually remove the following directory:

   `<infamdm_install_dir>\hub\resourcekit`

Uninstalling the Process Server in Console Mode

You can uninstall the Process Server in console mode on UNIX. If you installed the Process Server in console mode, uninstall the Process Server in console mode.

1. Go to the following directory:

   `<infamdm_install_dir>/hub/cleanse/UninstallerData`

2. Type the following command to run the uninstaller:

   `./"Uninstall Informatica MDM Hub Cleanse Match Server"`

Uninstalling the Hub Server in Console Mode

You can uninstall the Hub Server in console mode on UNIX. If you installed the Hub Server in console mode, uninstall the Hub Server in console mode.

1. Go to the following directory:

   `<infamdm_install_dir>/hub/server/UninstallerData`

2. Type the following command to run the uninstaller:

   `./"Uninstall Informatica MDM Hub Server"`

Uninstalling the Resource Kit in Console Mode

You can uninstall the Resource Kit in console mode. If you installed the Resource Kit in console mode, uninstall the Resource Kit in console mode.

1. Go to the following directory:

   On UNIX. `<infamdm_install_dir>/hub/resourcekit/UninstallerData`

   On Windows. `<infamdm_install_dir>\hub\resourcekit\UninstallerData`

2. Run the following command from the command prompt:

   On UNIX. `"Uninstall Informatica MDM Hub Resource Kit.bin" -i console`

   On Windows. `"Uninstall Informatica MDM Hub Resource Kit.exe" -i console`

Manually Undeploying the Process Server

You might need to manually undeploy the Process Server from the JBoss application server.

1. To manually undeploy the Process Server, delete `siperian-mrm-cleanse.ear` from the following directory:

   On UNIX. `<JBoss_install_dir>/standalone/deployments`

   On Windows. `<JBoss_install_dir>\standalone\deployments`

2. Restart the JBoss application server if the JBoss auto-deploy process does not remove the application.

   For more information, see the JBoss documentation.

Manually Undeploying the Hub Server

You might need to manually undeploy the Hub Server from the JBoss application server.

1. Remove the following deployment files from the JBoss deployment directory:

Deployment File Name	Description
siperian-mrm.ear	Required. The Hub Server application.
entity360view-ear.ear	Optional. The Entity 360 framework.
informatica-mdm-platform-ear.ear	Optional. The Informatica platform application.

   The deployment files are in the following directory:

   On UNIX.

   - `<JBoss installation directory>/<configuration name>/deployments`

On Windows.

- `<JBoss installation directory>\<configuration name>\deployments`

2. Restart the JBoss application server if the JBoss auto-deploy process does not remove the application. For more information, see the JBoss documentation.

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