Informatica®
10.2.2

# Upgrading from Version 10.1 (10.2.2)

Informatica Upgrading from Version 10.1 (10.2.2)
10.2.2
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# Preface

The upgrade guide is written for the system administrator who is responsible for upgrading the Informatica product. This guide assumes that you have knowledge of operating systems, relational database concepts, and the database engines, flat files, or mainframe systems in your environment. This guide also assumes that you are familiar with the interface requirements for your supporting applications.

## Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

### Informatica Network

The Informatica Network is the gateway to many resources, including the Informatica Knowledge Base and Informatica Global Customer Support. To enter the Informatica Network, visit https://network.informatica.com.

As an Informatica Network member, you have the following options:

- Search the Knowledge Base for product resources.
- View product availability information.
- Create and review your support cases.
- Find your local Informatica User Group Network and collaborate with your peers.

### Informatica Knowledge Base

Use the Informatica Knowledge Base to find product resources such as how-to articles, best practices, video tutorials, and answers to frequently asked questions.

To search the Knowledge Base, visit https://search.informatica.com. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at KB_Feedback@informatica.com.

### Informatica Documentation

Use the Informatica Documentation Portal to explore an extensive library of documentation for current and recent product releases. To explore the Documentation Portal, visit https://docs.informatica.com.

Informatica maintains documentation for many products on the Informatica Knowledge Base in addition to the Documentation Portal. If you cannot find documentation for your product or product version on the Documentation Portal, search the Knowledge Base at https://search.informatica.com.

If you have questions, comments, or ideas about the product documentation, contact the Informatica Documentation team at infa_documentation@informatica.com.

## Informatica Product Availability Matrices

Product Availability Matrices (PAMs) indicate the versions of the operating systems, databases, and types of data sources and targets that a product release supports. You can browse the Informatica PAMs at https://network.informatica.com/community/informatica-network/product-availability-matrices.

## Informatica Velocity

Informatica Velocity is a collection of tips and best practices developed by Informatica Professional Services and based on real-world experiences from hundreds of data management projects. Informatica Velocity represents the collective knowledge of Informatica consultants who work with organizations around the world to plan, develop, deploy, and maintain successful data management solutions.

You can find Informatica Velocity resources at http://velocity.informatica.com. If you have questions, comments, or ideas about Informatica Velocity, contact Informatica Professional Services at ips@informatica.com.

## Informatica Marketplace

The Informatica Marketplace is a forum where you can find solutions that extend and enhance your Informatica implementations. Leverage any of the hundreds of solutions from Informatica developers and partners on the Marketplace to improve your productivity and speed up time to implementation on your projects. You can find the Informatica Marketplace at https://marketplace.informatica.com.

## Informatica Global Customer Support

You can contact a Global Support Center by telephone or through the Informatica Network.

To find your local Informatica Global Customer Support telephone number, visit the Informatica website at the following link:
https://www.informatica.com/services-and-training/customer-success-services/contact-us.html.

To find online support resources on the Informatica Network, visit https://network.informatica.com and select the eSupport option.

CHAPTER 1

# Upgrade Overview

This chapter includes the following topics:



## Informatica Upgrade

The Informatica platform consists of a server component and one or more client components. Informatica provides separate installers to upgrade the Informatica services and clients.

When you upgrade each node in the domain, you can choose to change the node configuration to allow changes to the node host name, port numbers, or domain configuration repository database.

**Note:** Version 10.2.2 supports Informatica big data products, such as Big Data Management and Big Data Quality. It does not support traditional products such as PowerCenter and Informatica Data Quality. If your domain contains both big data and traditional products, you must split the domain before you perform the upgrade. For more information, see the article How to Split the Domain for Version 10.2.1 on the Informatica Network.

## Informatica Upgrade Support

You can directly upgrade to 10.2.2 from Informatica 10.0, 10.1, 10.1.1, 10.2, and 10.2.1.

If the product version that is currently installed cannot be upgraded to Informatica 10.2.2, you must first upgrade to a supported version. To determine the Informatica product version that is currently installed, click **Help** > **About Informatica Administrator** in the Informatica Administrator header area.

**Note:** For information about Support EOL statements, contact Informatica Global Customer Support or see, https://network.informatica.com/docs/DOC-16182

The following table describes the Informatica product versions from which you can upgrade:

| Informatica Version | Upgrade Path | Comments |
|---|---|---|
| 9.0.1 | 9.1.0 -> 9.6.1 -> 10.2 ->10.2.2 | After you upgrade to version 9.1.0, you must upgrade to version 9.6.1, then upgrade to version 10.2, and then upgrade to version 10.2.2. |
| 9.1.0 | 9.6.1 -> 10.2 ->10.2.2 | After you upgrade to version 9.6.1, you must upgrade to version 10.2, and then upgrade to version 10.2.2. |
| 9.5.0 | 9.6.1 -> 10.2 ->10.2.2 | After you upgrade to version 9.6.1, you must upgrade to version 10.2, and then upgrade to version 10.2.2. |
| 9.5.1 | 9.6.1 -> 10.2 ->10.2.2 | After you upgrade to version 9.6.1, you must upgrade to version 10.2, and then upgrade to version 10.2.2. |
| 9.6.0 | 9.6.1 -> 10.2 ->10.2.2 | After you upgrade to version 9.6.1, you must upgrade to version 10.2, and then upgrade to version 10.2.2. |
| 9.6.1 | 10.2 ->10.2.2 | You must first upgrade to version 10.2 and then upgrade to version 10.2.2. |
| 10.0.0 | 10.2.2 | You can directly upgrade to version 10.2.2. |
| 10.1.0 | 10.2.2 | You can directly upgrade to version 10.2.2. |
| 10.1.1 | 10.2.2 | You can directly upgrade to version 10.2.2. |
| 10.2.0* | 10.2.2 | You can directly upgrade to version 10.2.2. |
| 10.2.1* | 10.2.2 | You can directly upgrade to version 10.2.2 |
| **If a HotFix is applied on 10.2, an upgrade to 10.2.2 is supported only from 10.2 HF1.* | | |

# Upgrade Process

The upgrade of the Informatica services and Informatica clients consists of multiple phases.

The upgrade consists of the following phases:

1. Complete the pre-upgrade tasks for the domain to ensure that you can successfully run the installer.
2. Upgrade the domain. To upgrade the domain, run the Informatica server installer and select the upgrade option. The domain upgrade wizard installs the server files and configures the domain. If the domain has multiple nodes, you must upgrade all nodes. When you upgrade each node in the domain, you can choose to change the node configuration to allow changes to the node host name, port numbers, or domain configuration repository database.

The following table describes the actions that the installer performs when you upgrade the domain:

| Tasks | Description |
|---|---|
| Runs Informatica Upgrade Advisor. | Installer runs the pre-upgrade to validate the services and checks for obsolete services, supported database, and supported operating system in the domain.<br>Resolve the conflicts before you proceed with the upgrade. |
| Installs Informatica. | Installs Informatica directories and files into the new directory. |
| Copies infa_shared directory. | Copies the contents of the infa_shared directory from the existing installation directory into the new installation directory. |
| Copies the encryption key file. | Copies the domain encryption key file from the existing installation directory into the directory that you specify when you upgrade. |
| If the existing domain uses Kerberos authentication, copies the Kerberos configuration file and keytab files. | Copies the Kerberos configuration file from the existing installation directory into the new installation directory. Copies the keytab files from the existing installation directory into the encryption key directory that you specify when you upgrade. |
| Upgrades the domain. | Upgrades the domain to run version 10.2.2 application services.<br>The upgrade retains the user and administrator accounts in the domain. |
| Starts Informatica Services. | Starts Informatica Services on the node. |

3. Upgrade the application services. After you upgrade the domain, log in to the Administrator tool and upgrade the application services. The service upgrade wizard provides a list of all application services that must be upgraded. It upgrades the services based on the order required by the dependent objects.
4. Upgrade the Informatica Developer on all machines.

   **Note:** You cannot connect to the Informatica domain using the Developer tool from a previous version.
5. Perform the post-upgrade tasks.

   **Note:** If you upgrade the Informatica installation on more than one machine, complete the first upgrade with the detailed instructions in this guide. You can use the upgrade checklist in the appendix to perform subsequent upgrades.

CHAPTER 2

# Before You Upgrade the Domain

This chapter includes the following topics:



## Read the Release Notes

Read the Release Notes for updates to the installation and upgrade process. You can also find information about known and fixed limitations for the release.

## Split the Domain

Version 10.2.2 supports Informatica big data products, such as Big Data Management and Big Data Quality. It does not support traditional products such as PowerCenter and Informatica Data Quality. If your domain contains both big data and traditional products, you must split the domain before you perform the upgrade.

You split the domain so that you can run big data products and traditional products in separate domains. An application service can be unique to big data or traditional products, or it can be common. For example, the Catalog Service is unique to a big data domain, and the Data Integration Service can run in both the big data and the traditional domains.

Consider the following high-level process when you split the domain:

**Complete preliminary tasks**

Complete preliminary tasks such as preparing databases and backing up repositories.

**Split the domain**

When you split the domain you copy the installation directory and define a target domain through the command line. You also update some application service properties in each domain.

**Complete final tasks**

To complete the split, you upgrade and rename the domain and configure the Developer tool.

For details about splitting the domain, refer to the article How to Split the Domain on Informatica Network.

# Verify System Requirements

Verify that your environment meets the minimum system requirements for the installation process, temporary disk space, port availability, databases, and application service hardware.

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

## Verify Temporary Disk Space and Permissions

Verify that your environment meets the minimum system requirements for the temporary disk space.

**Disk space for the temporary files**

The installer writes temporary files to the hard disk. Verify that you have 1 GB disk space on the machine to support the installation. When the installation completes, the installer deletes the temporary files and releases the disk space.

**Permissions for the temporary files**

Verify that you have read, write, and execute permissions on the `/tmp` directory.

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

## Verify the Distributions

You can verify the distributions for the big data products in the Hadoop or in the Azure Databricks environment.

## Hadoop Environment

Informatica big data products integrate with the non-native environment. The integration varies by product, as do the requirements at installation.

The following table lists the supported non-native distribution versions for the big data products:

| Product | EMR | HDI | CDH | HDP | MapR |
|---|---|---|---|---|---|
| Big Data Management | 5.16 | 3.6.x | 5.15<br>5.16 | 2.6.x | 6.0.x MEP 5.0 |
| Enterprise Data Catalog | N/A | 3.6.x<br>**Note:** HDI is supported only for WASB non-Kerberos. | 5.15<br>5.16<br>**Note:** You can use OpenJDK 1.8.0 only on Enterprise Data Catalog deployed on a CDH 5.16 Hadoop distribution. | 2.6.x | N/A |
| Enterprise Data Lake | 5.16 | 3.6.x<br>**Note:** HDI is supported only for ADLS and WASB non-Kerberos. | 5.15<br>5.16 | 2.6.x | 6.0.x MEP 5.0 |

**Note:** Effective in version 10.2.2, Informatica dropped support for the Hive engine.

The following table lists the installer dependencies on the non-native environment for each product:

| Product | Installer Dependency on Non-Native Environment |
|---|---|
| Informatica domain services * | The non-native environment is not required at install time. Integrate the environments after installation. |
| Enterprise Data Catalog | If you choose to use an external cluster, the non-native environment is required at install time. If you choose to use an embedded cluster, the non-native environment is not required at install time. |
| Enterprise Data Lake | The non-native environment is required at install time if you want to create and enable the Data Preparation Service and the Enterprise Data Lake Service when you run the installer. You complete the environment integration after installation. |
| **The Informatica domain services installation includes the following big data products: Big Data Management, Big Data Quality, and Big Data Streaming.* | |

In each release, Informatica adds, defers, and drops support for the non-native distribution versions. Informatica might reinstate support for deferred versions in a future release. To see a list of the latest supported versions, see the Product Availability Matrix on the Informatica Customer Portal: https://network.informatica.com/community/informatica-network/product-availability-matrices.

### Databricks Environment

Big Data Management can connect to Azure Databricks. Azure Databricks is an analytics cloud platform that is optimized for the Microsoft Azure cloud services. It incorporates the open-source Apache Spark cluster technologies and capabilities.

Informatica supports Big Data Management on Databricks distribution version 5.1. Informatica does not support Big Data Quality, Big Data Streaming, Enterprise Data Catalog, or Enterprise Data Lake on the Databricks environment.

## Review Patch Requirements

Before you install the Informatica services, verify that the machine has the required operating system patches and libraries.

The following table lists the patches and libraries required for installation:

| Platform | Operating System | Operating System Patch |
|---|---|---|
| Linux-x64 | Red Hat Enterprise Linux 6.7 | All of the following packages, where <version> is any version of the package:<br>- e2fsprogs-libs-<version>.el6<br>- keyutils-libs-<version>.el6<br>- libselinux-<version>.el6<br>- libsepol-<version>.el6 |
| Linux-x64 | Red Hat Enterprise Linux 7.3 | All of the following packages, where <version> is any version of the package:<br>- e2fsprogs-libs-<version>.el7<br>- keyutils-libs-<version>.el7<br>- libselinux-<version>.el7<br>- libsepol-<version>.el7 |
| Linux-x64 | SUSE Linux Enterprise Server 11 | Service Pack 4 |
| Linux-x64 | SUSE Linux Enterprise Server 12 | Service Pack 2 |

## Review the Environment Variables

Configure the environment variables to work with the Informatica installation.

The following table describes the environment variables to review:

| Variable | Description |
|---|---|
| IATEMPDIR | Location of the temporary files created during installation. Informatica requires 1 GB disk space for temporary files.<br>Configure the environment variable if you do not want to create temporary files in the /tmp directory. |
| INFA_DOMAINS_FILE | Contains the location of the domains.infa file. Clear this variable before you start the upgrade. |
| INFA_HOME | Contains the location of the Informatica installation directory. Clear this variable before you start the upgrade. |

| Variable | Description |
|---|---|
| LANG and LC_ALL | Change the locale to set the appropriate character encoding for the terminal session. For example, set the encoding to `Latin1` or `ISO-8859-1` for French, `EUC-JP` or `Shift JIS` for Japanese, or `UTF-8` for Chinese or Korean. The character encoding determines the types of characters that appear in the UNIX terminal. |
| DISPLAY | Unset the DISPLAY environment before you run the installer. Installation might fail if the DISPLAY environment variable has some value. |

# Extract the Installer Files

The installer files are compressed and distributed as a tar file.

Use a native tar or GNU tar utility to extract the installer files to a directory on your machine. The user that runs the installer must have read and write permissions on the installer files directory and execute permissions on install.sh.

You can get the installation file from the FTP link. Download the Informatica installation tar file from the Informatica Electronic Software Download site to a directory on your machine and then extract the installer files.

**Note:** Make sure that you download the file to a local directory or a shared network drive that is mapped on your machine. You can then extract the installer files. However, you cannot run the installer from a mapped file. Copy the extracted files to a local drive and then run the installer.

# Run the Pre-Installation (i10Pi) System Check Tool

Run the Pre-installation (i10Pi) System Check Tool to verify whether the machine meets the system requirements for installation or upgrade.

1. Log in to the machine with a system user account.
2. Close all other applications.
3. On a shell command line, run the install.sh file from the root directory.

   The installer displays the message to verify that the locale environment variables are set.
4. If the environment variables are not set, press **n** to exit the installer and set them as required.

   If the environment variables are not set, press**y** to continue.
5. Press **1** to install Informatica.
6. Press **1** to run the Pre-Installation (i10Pi) System Check Tool that verifies whether the machine meets the system requirements for the installation or upgrade.
7. From the Informatica Pre-Installation (i10Pi) System Check Tool **Welcome** section, press **Enter**.

   The **System Information** section appears.
8. Type the absolute path for the installation directory.

The directory names in the path must not contain spaces or the following special characters: @|* $ # ! % ( ) { } [ ] , ; '

**Note:** Informatica recommends using alphanumeric characters in the installation directory path. If you use a special character such as á or €, unexpected results might occur at run time.

9. Press **Enter**.
10. Enter the starting port number for the node that you will create or upgrade on the machine. The default port number for the node is 6005.
11. Press **Enter**.

    The **Database and Connection Information** section appears.
12. To enter the JDBC connection information using a custom JDBC connection string, press **1**. To enter the JDBC connection information using the JDBC URL information, press **2**.

    To connect to a secure database, you must enter the JDBC connection using a custom JDBC connection string.
13. Enter the JDBC connection information.
    - To enter the connection information using a custom JDBC connection string, type the connection string and specify the connection parameters.
      Use the following syntax in the JDBC connection string:
      **IBM DB2**

      ```
      jdbc:Informatica:db2://host_name:port_no;DatabaseName=
      ```

      **Oracle**

      ```
      jdbc:Informatica:oracle://host_name:port_no;ServiceName=
      ```

      **Microsoft SQL Server**

      ```
      jdbc:Informatica:sqlserver://host_name:port_no;SelectMethod=cursor;DatabaseName=
      ```

      **Microsoft Azure SQL Database**

      ```
      jdbc:Informatica:sqlserver://
      host_name:port_no;SelectMethod=cursor;DatabaseName=database_name;SnapshotSerializa
      ble=true;EncryptionMethod=SSL;HostNameInCertificate=*.database.windows.net;Validat
      eServerCertificate=false
      ```

      **Sybase**

      ```
      jdbc:Informatica:sybase://host_name:port_no;DatabaseName=
      ```

      Verify that the connection string contains all the connection parameters required by your database system.
    - To enter the connection information using the JDBC URL information, specify the JDBC URL properties.

The following table describes the connection information:

| Prompt | Description |
|---|---|
| Database type | Type of database for the domain configuration repository. Select from the following database types:<br>- 1 - Oracle<br>- 2 - Microsoft SQL Server<br>- 3 - IBM DB2<br>- 4 - Sybase ASE |
| Database user ID | User ID for the database user account for the domain configuration repository. |
| Database user password | Password for the database user account. |
| Database host name | Host name for the database server. |
| Database port number | Port number for the database. |
| Database service name | Service name for Oracle and IBM DB2 databases or database name for Microsoft SQL Server and Sybase ASE. |

The tool checks the settings of the hard drive, the availability of the ports, and the configuration of the database. After the system check is complete, the **System Check Summary** section displays the results of the system check.

14. Analyze the results of the system check.

    Each requirement is listed, along with one of the following check statuses:

    - [Pass] - The requirement meets the criteria for the Informatica installation or upgrade.
    - [Fail] - The requirement does not meet the criteria for the Informatica installation or upgrade. Resolve the issue before you proceed with the installation or upgrade.
    - [Information] - Verify the information and perform any additional tasks as outlined in the details.

    The results of the system check are saved to the following file: `.../Server/i10Pi/i10Pi/en/i10Pi_summary.txt`

15. Press **Enter** to close the Pre-Installation (i10Pi) System Check Tool.

    You can continue to the Informatica service installation or upgrade immediately or end the system check and continue with the installation or upgrade later.

16. To continue to upgrade the Informatica service, you must quit the installer and then restart the installer.

    If the Pre-Installation (i10Pi) System Check Tool finishes with failed requirements, resolve the failed requirements and run the Pre-Installation (i10Pi) System Check Tool again.

    **Note:** If the Informatica Pre-Installation (i10Pi) System Check Tool check finishes with failed requirements, you can still perform the Informatica installation or upgrade. However, Informatica highly recommends that you resolve the failed requirements before you proceed.

# Run the Informatica Upgrade Advisor

Before you perform an upgrade, run the Informatica Upgrade Advisor to validate the services and check for obsolete services, supported database, and supported operating system in the domain.

1. Log in to the machine with a system user account.
2. Close all other applications.
3. On a shell command line, run the install.sh file from the root directory.

   The installer displays the message to verify that the locale environment variables are set.
4. If the environment variables are not set, press **n** to exit the installer and set them as required.

   If the environment variables are not set, press**y** to continue.
5. Press **2** to Upgrade Informatica.
6. Press **1** to run the Informatica Upgrade Advisor.

   The **Welcome** section appears.
7. Press **Enter**.

   The **Installation Directory** section appears.
8. Enter the current installation directory.
9. Press **Enter**.

   The **Domain and Node Configuration** section appears.
10. Enter the following domain information:

| Property | Description |
|---|---|
| Domain name | Name of the domain. The default domain name is Domain_<MachineName>. The name must not exceed 128 characters and must be 7-bit ASCII only. It cannot contain a space or any of the following characters: ` % * + ; " ? , < > \ / |
| Gateway node host name | Host name of the machine that hosts the gateway node for the domain. |
| Gateway node port name | Port number of the gateway node. |
| Domain user name | User name for the domain administrator. You can use this user name to initially log in to Informatica Administrator. Use the following guidelines:<br>The name is not case sensitive and cannot exceed 128 characters.<br>The name cannot include a tab, newline character, or the following special characters: % * + / ? ; < >-<br>The name can include an ASCII space character except for the first and last character. Other space characters are not allowed. |
| Domain password | Password for the domain administrator. The password must be more than 2 characters and must not exceed 16 characters.<br>Not available if you configure the Informatica domain to run on a network with Kerberos authentication. |

11. Press **Enter**.

    The **Infomatica Upgrade Advisor Summary** section appears.
12. Review the results of the advisor in the following log file: `Summary_<timestamp>.log`

13. Press **Enter** to close the Informatica Upgrade Advisor.

CHAPTER 3

# Prepare for the Upgrade

This chapter includes the following topics:



## Back Up the Data Transformation Files

The following table lists the files or directories that you must back up:

| File or Directory | Default Location |
|---|---|
| Repository | <Informatica installation directory>\DataTransformation\ServiceDB |
| Custom Global Components directory (TGP files) | <Informatica installation directory>\DataTransformation\autoInclude\user |
| Custom Global Components directory (DLL and JAR files) | <Informatica installation directory>\DataTransformation\externLibs\user |
| Configuration file | <Informatica installation directory>\DataTransformation\CMConfig.xml |
| License file | <Informatica installation directory>\DataTransformation\CDELicense.cfg |

Do not copy the Data Transformation Library files. Instead, install the Data Transformation Libraries again.

# Prepare the Analyst Service

Before you upgrade the domain, disable the Analyst Service through the Administrator tool or through infacmd DisableService.

To disable the Analyst Service from the Administrator tool, perform the following steps:

1. Log in to **Informatica Administrator**.
2. On the **Manage** tab, Click the **Services and Nodes** view.
3. In the **Domain Navigator**, select **Analyst Service**.
4. Click the **Disable** button to stop the service.

# Prepare the Model Repository

Before you upgrade the domain, complete the steps to prepare the Model repository.

1. Back up the repository.
   To back up each Model repository, select the Model Repository Service in the Administrator tool. Then, on the Domain Actions menu, click **Repository Contents** > **Backup**.
2. Verify the database user account requirements.
   If the Model repository database is on Oracle, set the OPEN_CURSORS parameter to 4000 or higher.

# Prepare the Data Integration Service

Before you upgrade the domain, prepare the Data Integration Service.

## Record the Execution Options for Each Data Integration Service Process

If the Data Integration Service runs on multiple nodes and you configured the execution options differently for each Data Integration Service process, record the property values before you upgrade the domain. In some cases, the execution option values are not retained during the upgrade.

Effective in version 10.1, the execution options on the Processes view are moved to the Properties view for the Data Integration Service. You configure the execution options for the Data Integration Service. Each service process uses the same value for each option. To verify that the upgraded Data Integration Service uses the correct values, record the execution option values for each Data Integration Service process before upgrading.

To get the execution options for each Data Integration Service process, run the infacmd dis ListServiceProcessOptions command for each service process and redirect the output to a text file. For example, run the following command:

```
infacmd dis ListServiceProcessOptions -dn MyDomain -sn MyDIS -un MyUserName -pd
MyPassword -nn Node1 > MyDISProcessOptionsNode1.txt
```

## Complete All Workflows

Before you upgrade the domain, verify that all workflows are complete. The Data Integration Service cannot recover a workflow that you interrupt during the upgrade process.

# Back up Databases

Before you upgrade the domain, back up the profiling warehouse, reference data warehouse, and workflow database.

Use the native database backup option to back up the profiling warehouse, reference data warehouse, and workflow database.

# Back Up the odbc.ini File for Informatica Cassandra ODBC Driver

Before you upgrade, you must back up the `odbc.ini` file located in the following location:

```
<Informatica installation directory>/tools/cassandra/lib
```

# Prepare the Domain

Before you upgrade the domain, complete the steps to prepare the domain.

## Shut Down the Domain

You must shut down the domain before you back up domain and then upgrade the domain.

Before you shut down the domain, stop mappings and other jobs running on the domain.

To shut down the domain, stop the Informatica service process on each node in the domain.

You can stop the Informatica service process on each node using one of the following methods:

- To stop Informatica, you use the *infaservice* command. By default, the *infaservice* executable file is installed in the following directory:

  ```
  <Informatica installation directory>/tomcat/bin
  ```

  Enter the following command to stop the daemon:

  ```
  infaservice shutdown
  ```

You can also stop the Informatica service from the Administrator tool.

# Back Up the Domain

Before you upgrade the domain, you must back up the configuration metadata for the domain.

Complete the following steps to back up the domain:

- Run the infasetup BackupDomain command to back up the domain configuration database tables to a file.
- Back up the metadata configuration files to any directory accessible by the machines where you install Informatica.

Informatica infasetup includes command line programs to back up and restore the domain. infasetup is located in the following directory:

```
<Informatica installation directory>/isp/bin
```

To back up the domain with infasetup, use the following syntax:

```
BackupDomain
<<-DatabaseAddress|-da> database_hostname:database_port|

<-DatabaseConnectionString|-cs> database_connection_string>

<-DatabaseUserName|-du> database_user_name

<-DatabasePassword|-dp> database_password

<-DatabaseType|-dt> database_type

[<-DatabaseServiceName|-ds> database_service_name]

<-BackupFile|-bf> backup_file_name

[<-Force|-f>]

<-DomainName|-dn> domain_name

[<-Tablespace|-ts> tablespace_name (used for IBM DB2 only)]

[<-SchemaName|-sc> schema_name (used for Microsoft SQL Server only)]

[<-DatabaseTlsEnabled|-dbtls> database_tls_enabled]

[<-DatabaseTruststorePassword|-dbtp> database_truststore_password]

[<-TrustedConnection|-tc> trusted_connection (used for Microsoft SQL Server only)]

[<-EncryptionKeyLocation|-kl> encryption_key_location]
```

Back up the metadata configuration files to any directory accessible by the machines where you install Informatica. The following table describes the metadata files and the locations where you can find them:

| Metadata File | Description | Location |
|---|---|---|
| nodemeta.xml | Contains metadata for a node. | Stored in the isp/config directory on each node in the domain.<br>If you use the same backup directory name on all the nodes, rename nodemeta.xml before copying it to the backup location. For example, you back up nodemeta.xml to the /nodebak directory on nodeA and nodeB. Rename the configuration files so that on nodeA the file is backed up to /nodebak/nodemeta_A.xml, and on nodeB the file is backed up to /nodebak/nodemeta_B.xml. |
| domains.infa | Contains connectivity information for the gateway nodes. | Stored in one of the following locations:<br>- The Informatica installation directory on the client and server machines.<br>- The location configured through the INFA_DOMAINS_FILE environment variable. |

CHAPTER 4

# Upgrade the Domain

This chapter includes the following topics:



## Domain Upgrade Overview

Use the server installer to upgrade the domain of a previous version of Informatica services. The server installer provides a domain upgrade wizard to guide you through the upgrade process.

The upgrade wizard installs Informatica 10.2.2 in the installation directory you specify. It does not modify the files in the directory of the previous version.

The upgrade wizard reads the domain information from files in the previous version and uses the same settings to configure the domain and server files for Informatica 10.2.2. It upgrades the tables of the domain configuration repository in the same database as the previous version.

Complete the pre-upgrade tasks before you start the upgrade. Run the installer on all machines that host previous versions of Informatica that you want to upgrade. You can upgrade in console or silent mode.

**Note:** In a multi-node domain, upgrade the master gateway node before you upgrade other nodes.

You can perform the upgrade from the root of the directory where you download the installation files.

After you upgrade the domain, upgrade Informatica Developer to the same Informatica version, including the HotFix version.

## Upgrading in Console Mode

You can upgrade in console mode to upgrade the domain on the same machine and on the same domain configuration repository database. You can upgrade the domain in console mode.

To upgrade the domain to a different machine or to a different domain configuration repository database and change the node configuration, see "Upgrading in Console Mode" on page 34.

When you run the installer in console mode, the words quit, back, and help are reserved words. Do not use them as input text.

1. Log in to the machine with the same user account that you used to install the previous version.
2. Stop all processes that access the directory and subdirectories of the Informatica product to upgrade, including command prompts and tail logs.
3. On a shell command line, run the install.sh file from the root directory.

   The installer displays the message to verify that the locale environment variables are set.
4. If the environment variables are not set, press **n** to exit the installer and set them as required.

   If the environment variables are set, press **y** to continue.
5. Press **2** to upgrade Informatica.

   Informatica provides utilities to facilitate the Informatica services installation process. You can run the following utility before you upgrade Informatica services:
   **Informatica Upgrade Advisor.**

   Validates the services and checks for obsolete services in the domain before you perform an upgrade. Fore more information about the Informatica Upgrade Advisor, see "Run the Informatica Upgrade Advisor" on page 19.

   The installer displays a warning to shut down the Informatica domain that you want to upgrade before you continue the upgrade.
6. Read the terms and conditions of Informatica product usage toolkit and press **2** to continue the upgrade.

   Informatica DiscoveryIQ is a product usage tool that sends routine reports on data usage and system statistics to Informatica. Informatica DiscoveryIQ uploads data to Informatica 15 minutes after you install and configure Informatica domain. Thereafter, the domain sends the data every 30 days. You can choose to disable usage statistics from the Administrator tool.
7. Version 10.2.2 is for big data products only, such as Big Data Management and Big Data Quality. This version does not support non-big data products, such as PowerCenter or Informatica Data Quality.

   a. Press **1** and type **quit** to quit the installation.

   b. Press **2** to continue the installation.

   If you choose to not accept the terms and condition, the installer prompts you to accept the terms and conditions.
8. The **Upgrade Prerequisites** page displays the upgrade system requirements.

   Verify the requirements before you continue the upgrade.
9. At the prompt, enter the directory of the Informatica version you want to upgrade and the directory in which you want to install Informatica 10.2.2.

The following table describes the directories you must specify:

| Directory | Description |
|---|---|
| Directory of the Informatica product to upgrade | Directory that contains the version of Informatica services that you want to upgrade. |
| Directory for Informatica 10.2.2 | Directory in which to install Informatica 10.2.2.<br>Enter the absolute path for the installation directory. The directory cannot be the same as the directory that contains the previous version of Informatica services.The directory names in the path must not contain spaces or the following special characters: @|* $ # ! % ( ) { } [ ] , ; '<br>**Note:** Informatica recommends using alphanumeric characters in the installation directory path. If you use a special character such as á or €, unexpected results might occur at run time. |

10. Select if you want to change the node host name, port numbers, or domain configuration repository. Press **1** to use the same node configuration as the previous version. Press **2** to change the node configuration.
11. Press **1** to upgrade Informatica services.
12. Enter the directory for the encryption key for the Informatica domain.

    Informatica uses an encryption key to secure sensitive data, such as passwords, that are stored in the Informatica domain. When you upgrade, you must enter the directory in which to store the encryption key on the node that you are upgrading.

    **Note:** All nodes in an Informatica domain use the same keyword and encryption key. You must keep the name of the domain, the keyword for the encryption key, and the encryption key file in a secure location. The encryption key is required when you change the encryption key of the domain or move a repository to another domain.

| Property | Description |
|---|---|
| Encryption key directory | Directory in which to store the encryption key for the domain. By default, the encryption key is created in the following directory: `<Informatica installation directory>/isp/config/keys`. |

13. Enter the user name and password for the Informatica domain.
14. Review the upgrade information and press **Enter** to continue.

    The installer copies the server files to the Informatica 10.2.2 installation directory.

    The installer displays the database and user account information for the domain configuration repository to upgrade. It displays the database connection string for the domain configuration repository based on how the connection string of the previous version was created at installation:

    - If the previous version used a JDBC URL at installation, the installer displays the JDBC connection properties, including the database address and service name.
    - If the previous version used a custom JDBC connection string at installation, the installer displays the custom connection string.
15. Press **Enter**.
16. If you use a JDBC URL, you can specify additional parameters to include in the connection string.

    If you use a custom connection string, you cannot specify additional parameters.

17. Press **Enter**.

    The **Post-Installation** section appears.

18. Press **Enter** to complete the installation procedure and exit the installer.

Review the `upgrade.log` file to get more information about the tasks performed by the upgrade wizard and to view the configuration of installed components.

# Upgrading in Silent Mode

You can upgrade in silent mode to upgrade the domain on the same machine and on the same domain configuration repository database.

To upgrade the domain to a different machine or to a different domain configuration repository database and change the node configuration, see Chapter 5, “Upgrade the Domain with Changes to Node Configuration” on page 31.

To upgrade the Informatica domain services without user interaction, upgrade in silent mode. Use a properties file to specify the upgrade options. The installer reads the file to determine the upgrade options. You can use silent mode upgrade to upgrade the Informatica domain services on multiple machines on the network or to standardize the upgrade process across machines.

Copy the Informatica installation files to the hard disk on the machine that hosts the Informatica instance you plan to upgrade.

To upgrade in silent mode, complete the following tasks:

1. Create the upgrade properties file and specify the upgrade options.
2. Run the installer with the upgrade properties file.
3. Secure the passwords in the upgrade properties file.

## Creating the Properties file

Informatica provides two versions of the properties file. Use either file to specify options for your installation.

**Silent input upgrade new config properties file**

Use the silent input upgrade new configuration properties file to upgrade Informatica domain services with changes to the node configuration and without user interaction.

The silent input upgrade new configuration properties file contains the configuration properties required to upgrade the Informatica domain services in silent mode. Use the file if you want to consider the appropriate value to set for each property in the file.

**Default silent input upgrade properties file**

Use the silent input upgrade properties file to upgrade Informatica domain services without user interaction.

The default silent input properties file contains default values for many configuration properties. Use the file if you plan to upgrade the Informatica domain services using the default property values, and do not want to read through all of the properties in the file.

Informatica provides a sample properties file that includes the upgrade parameters that are required by the installer. You can customize the sample properties file to specify the options for your upgrade.

The sample upgrade properties file is named SilentInput_upgrade.properties and is located in the installer download location. After you customize the file, save it with the file name SilentInput.properties.

1. Go to the root of the directory that contains the installation files.
2. Find the file named SilentInput_upgrade.properties.

   Back up the file before you modify it.
3. Use a text editor to open the file and modify the values of the upgrade parameters.

   The following table describes the upgrade parameters that you can modify:

| Property Name | Description |
|---|---|
| INSTALL_TYPE | Indicates whether to install or upgrade Informatica.<br>If the value is 0, the installer performs a fresh installation of Informatica. If the value is 1, the installer upgrades a previous version of Informatica. |
| UPGRADE_WITHOUT_PC | Informatica does not support PowerCenter products for version 10.2.2. If you want to install or upgrade to this version, the PowerCenter functionality will not be available. Set the value to 1, to continue with the upgrade. Set the value to 0, to quit the upgrade. |
| USER_INSTALL_DIR | Directory in which to install the new version of Informatica services. The directory cannot be the same as the directory that contains the previous version of Informatica services. |
| UPG_BACKUP_DIR | Directory that contains the previous version of Informatica services that you want to upgrade. |
| KEY_DEST_LOCATION | Directory in which to store the encryption key for the node created during the installation. |
| DOMAIN_USER | User name for the Informatica domain. |
| DOMAIN_PSSWD | Password for the Informatica domain. |
| ENABLE_USAGE_COLLECTION | Enables Informatica DiscoveryIQ, a product usage tool that sends routine reports on data usage and system statistics to Informatica. Informatica DiscoveryIQ uploads data to Informatica 15 minutes after you install and configure Informatica domain. Thereafter, the domain sends the data every 30 days. You can choose to not send any usage statistics to Informatica. For more information on how to disable sending usage statistics, see the *Informatica Administrator Guide*.<br>You must set the value to 1 to upgrade. |

4. Save the properties file with the name SilentInput.properties.

## Running the Silent Installer

After you create the properties file, open a command prompt to start the silent upgrade.

1. Open a command prompt.
2. Go to the root of the server installer directory.
3. Verify that the directory contains the file SilentInput.properties with the upgrade options.
4. Run `silentInstall.sh` file.

The silent upgrade runs in the background. The process can take a while. The silent upgrade process is complete when the Informatica_<Version>_Services_InstallLog<timestamp>.log is created in the installation directory.

The silent upgrade fails if you incorrectly configure the properties file or if the installation directory is not accessible. If the upgrade fails, view the silent upgrade log file and correct the errors. Then run the silent installer again. The silent upgrade log file name is silentErrorLog.log. The installer creates it in the e user home directory.

## Secure the Passwords in the Properties File

After you run the silent upgrade, ensure that passwords in the properties file are kept secure.

When you configure the properties file for a silent upgrade, you enter passwords in plain text. After you run the silent upgrade, use one of the following methods to secure the passwords:

- Remove the passwords from the properties file.
- Delete the properties file.
- Store the properties file in a secure location.

# Troubleshooting the Domain Upgrade

If the upgrade does not complete successfully, review log files to determine the cause of the failure. The upgrade log files are in the root of the directory where the new version of Informatica is installed. Review the following log file: Informatica_<Version>_Services_Upgrade.log.

If the upgrade fails, restore the domain configuration repository database from the backup and run the installer again.

If the Administrator tool is configured for secure communication, you might receive a `404 Not Found` message when you access the Administrator tool. This issue occurs when the machine that runs the gateway node cannot access the keystore file used for the HTTPS connection to the Administrator tool. Copy the file to an accessible location, and then shut down the domain. Run the infasetup UpdateGatewayNode command to update the gateway node with the location of the keystore file. You must run the command on each gateway node in the domain.

CHAPTER 5

# Upgrade the Domain with Changes to Node Configuration

This chapter includes the following topics:



## Upgrade the Domain with Changes to Node Configuration Overview

When you upgrade the domain, you can choose to change the node configuration to allow changes to the node host name, port numbers, or domain configuration repository database.

If you migrated an Informatica services installation to a different machine, choose to change the node configuration to upgrade the domain and configure the node on the new machine. If you migrated the domain configuration repository to a different database, choose to change the node configuration to upgrade the domain and configure the new database.

Complete the pre-upgrade tasks before you run the installer. You can run the installer in console or silent mode.

## Prepare to Change the Node Configuration

Before you upgrade the domain with changes to the node configuration, you must perform steps to prepare for the upgrade.

The steps that you perform depend on the kind of change that you plan to make to the node configuration. You can migrate the domain configuration repository to a different database. Or, you can migrate the Informatica services installation to a different machine.

# Migrating to a Different Database

If the domain configuration repository database type or version is no longer supported, you must migrate the repository to a different database. Migrate the repository in the previous Informatica instance before you upgrade the domain.

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

1. Verify that you have shut down the domain.
2. Verify that you have backed up the domain configuration database tables to a file with the infasetup BackupDomain command.
3. Create a database schema and a user account in a supported database.
4. Restore the domain configuration in the backup file to the specified database schema with the infasetup RestoreDomain command.
5. When you upgrade a gateway node, select the **Allow changes to the node host name and port number** option. When you select this option, you can configure the gateway node to connect to the new domain configuration repository database. All gateway nodes must have a connection to the domain configuration repository to retrieve and update domain configuration. When you upgrade a worker node, clear the **Allow changes to the node host name and port number** option.

# Migrating the Installation to a Different Machine

If the Informatica services are installed on a machine with an operating system that is no longer supported, you must migrate the installation to a different machine before you upgrade the domain.

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

Before you upgrade the domain, complete the following steps on the machine where you want the new version of Informatica to run:

1. Copy the installation directory.
2. Verify port requirements.
3. Create a system user account.
4. If you plan to run the Data Integration Service on the new machine, configure native connectivity on the new machine so that these services can connect to databases.

When you upgrade the migrated node, select the **Allow changes to the node host name and port number** option. When you select this option, you can update the configuration of the node on the new machine. When you upgrade other nodes in the domain that you did not migrate to different machines, clear the **Allow changes to the node host name and port number** option.

## Copy the Installation Directory

Copy the directory of the previous version of Informatica to the machine where you want the new version of Informatica to run.

For example, if the previous version of Informatica is installed in `C:\Informatica\<version>`, copy the `C:\Informatica\<version>` directory and subdirectories to the new machine.

When you run the upgrade installer, specify the Informatica installation directory on the new machine as the one that you want to upgrade.

## Verify Port Requirements

The installer sets up the ports for components in the Informatica domain, and it designates a range of dynamic ports to use for some application services.

You can specify the port numbers to use for the components and a range of dynamic port numbers to use for the application services. Or you can use the default port numbers provided by the installer. Verify that the port numbers are available on the machines where you install the Informatica services.

The following table describes the ports that you can set:

| Port | Description |
|---|---|
| Service Manager port | Port number used by the Service Manager on the node. The Service Manager listens for incoming connection requests on this port. Client applications use this port to communicate with the services in the domain. The Informatica command line programs use this port to communicate to the domain. This is also the port for the SQL data service JDBC/ODBC driver. Default is 6006. |
| Service Manager Shutdown port | Port number that controls server shutdown for the domain Service Manager. The Service Manager listens for shutdown commands on this port. Default is 6007. |
| Informatica Administrator port | Port number used by Informatica Administrator. Default is 6008. |
| Informatica Administrator HTTPS port | No default port. Enter the required port number when you create the service. Setting this port to 0 disables an HTTPS connection to the Administrator tool. |
| Informatica Administrator shutdown port | Port number that controls server shutdown for Informatica Administrator. Informatica Administrator listens for shutdown commands on this port. Default is 6009. |
| Minimum port number | Lowest port number in the range of dynamic port numbers that can be assigned to the application service processes that run on this node. Default is 6014. |
| Maximum port number | Highest port number in the range of dynamic port numbers that can be assigned to the application service processes that run on this node. Default is 6114. |

## Create a System User Account

Create a user account specifically to run the Informatica daemon.

Verify that the user account you use to install Informatica has write permission on the installation directory.

## Install Database Client Software

You must install the database clients on the required machines based on the types of databases that the application services access.

To ensure compatibility between the application service and the database, use the appropriate database client libraries and install a client software that is compatible with the database version.

When you upgrade Informatica services, ensure that you install the appropriate database client on the machine that runs the Data Integration Service.

Install the following database client software based on the type of database that the application service accesses:

**IBM DB2 Client Application Enabler (CAE)**

Configure connectivity on the required machines by logging in to the machine as the user who starts Informatica services.

**Microsoft SQL Server 2012 Native Client**

Download the client from the following Microsoft website:
http://www.microsoft.com/en-in/download/details.aspx?id=29065.

**Oracle client**

Install compatible versions of the Oracle client and Oracle database server. You must also install the same version of the Oracle client on all machines that require it. To verify compatibility, contact Oracle.

**Sybase Open Client (OCS)**

Install an Open Client version that is compatible with the Sybase ASE database server. You must also install the same version of Open Client on the machines hosting the Sybase ASE database and Informatica. To verify compatibility, contact Sybase.

## Configure Database Client Environment Variables

Configure database client environment variables on the machines that run the Data Integration Service process.

After you configure the database environment variables, you can test the connection to the database from the database client.

The following table lists the database environment variables you need to set:

| Database | Environment Variable Name | Database Utility | Value |
|---|---|---|---|
| Oracle | ORACLE_HOME<br>PATH | sqlplus | Set to: <*DatabasePath*><br>Add: <*DatabasePath*>/bin |
| IBM DB2 | DB2DIR<br>DB2INSTANCE<br>PATH | db2connect | Set to: <*DatabasePath*><br>Set to: <*DB2InstanceName*><br>Add: <*DatabasePath*>/bin |
| Sybase ASE | SYBASE15<br>SYBASE_ASE<br>SYBASE_OCS<br>PATH | isql | Set to: <*DatabasePath*>/sybase<*version*><br>Set to: ${SYBASE15}/ASE-<*version*><br>Set to: ${SYBASE15}/OCS-<*version*><br>Add: ${SYBASE_ASE}/bin:${SYBASE_OCS}/bin:$PATH |

# Upgrading in Console Mode

When you upgrade in console mode, you can change the node configuration to upgrade the domain to a different machine or to a different domain configuration repository database. You can upgrade the domain in console mode.

To upgrade the domain on the same machine and on the same domain configuration repository database, see "Upgrading in Console Mode" on page 25.

When you run the installer in console mode, the words Quit and Back are reserved words. Do not use them as input text.

1. On a shell command line, run the install.sh file from the root directory.

   The installer displays the message to verify that the locale environment variables are set.

2. If the environment variables are not set, press **n** to exit the installer and set them as required.

   If the environment variables are set, press **y** to continue.

3. Press **2** to upgrade Informatica.

   Informatica provides utilities to facilitate the Informatica services installation process. You can run the following utility before you upgrade Informatica services:
   **Informatica Upgrade Advisor.**

   Validates the services and checks for obsolete services in the domain before you perform an upgrade. Fore more information about the Informatica Upgrade Advisor, see "Run the Informatica Upgrade Advisor" on page 19.

   The installer displays a warning to shut down the Informatica domain that you want to upgrade before you continue the upgrade.

4. Read the terms and conditions of Informatica product usage toolkit and press **2** to continue the upgrade.

   Informatica DiscoveryIQ is a product usage tool that sends routine reports on data usage and system statistics to Informatica. Informatica DiscoveryIQ uploads data to Informatica 15 minutes after you install and configure Informatica domain. Thereafter, the domain sends the data every 30 days. You can choose to not send any usage statistics to Informatica. For more information on how to disable sending usage statistics, see *Informatica Administrator Guide*.

5. Version 10.2.2 is for big data products only, such as Big Data Management and Big Data Quality. This version does not support non-big data products, such as PowerCenter or Informatica Data Quality.

   a. Press **1** and type **quit** to quit the installation.

   b. Press **2** to continue the installation.

   If you choose to not accept the terms and condition, the installer prompts you to accept the terms and conditions.

6. The **Upgrade Prerequisites** page displays the upgrade system requirements.

   Verify the requirements before you continue the upgrade.

7. At the prompt, enter the directory of the Informatica version you want to upgrade and the directory in which you want to install Informatica 10.2.2.

   The following table describes the directories you must specify:

| Directory | Description |
|---|---|
| Directory of the Informatica product to upgrade | Directory that contains the version of Informatica services that you want to upgrade. |
| Directory for Informatica 10.2.2 | Directory in which to install Informatica 10.2.2.<br>Enter the absolute path for the installation directory. The directory cannot be the same as the directory that contains the previous version of Informatica services.The directory names in the path must not contain spaces or the following special characters: @\|* $ # ! % ( ) { } [ ] , ; '<br>**Note:** Informatica recommends using alphanumeric characters in the installation directory path. If you use a special character such as á or €, unexpected results might occur at run time. |

8. Enter **2** to allow changes to the node host name and port number.

   Use this option to change the configuration of the Informatica installation that you upgrade. If you are upgrading to a different machine, change the node configuration to match the configuration of the new machine. If you are upgrading to a different domain configuration repository database, change the node configuration to match the configuration of the new database.
9. Press **1** to upgrade Informatica services.
10. Enter the directory for the encryption key for the Informatica domain.

    Informatica uses an encryption key to secure sensitive data, such as passwords, that are stored in the Informatica domain. When you upgrade, you must enter the directory in which to store the encryption key on the node that you are upgrading.

    **Note:** All nodes in an Informatica domain use the same keyword and encryption key. You must keep the name of the domain, the keyword for the encryption key, and the encryption key file in a secure location. The encryption key is required when you change the encryption key of the domain or move a repository to another domain.

| Property | Description |
|---|---|
| Encryption key directory | Directory in which to store the encryption key for the domain. By default, the encryption key is created in the following directory: `<Informatica installation directory>/isp/config/keys`. |

11. Enter the user name and password for the Informatica domain.
12. Review the upgrade information and press **Enter** to continue.

    The installer copies the server files to the Informatica 10.2.2 installation directory.

    The installer displays a warning to shut down the Informatica domain that you want to upgrade before you continue the upgrade.
13. Press **Enter**.
14. If you are upgrading a gateway node, select the database to use for the domain configuration repository.

    If you are upgrading a worker node, the domain configuration repository information does not display. You cannot modify the database connection information. Skip to step 17.

    The following table lists the databases you can use for the domain configuration repository:

| Prompt | Description |
|---|---|
| Database type | Type of database for the domain configuration repository. Select from the following options:<br>1 - Oracle<br>2 - Microsoft SQL Server<br>3 - IBM DB2<br>4 - Sybase ASE |

15. Enter the properties for the database user account.

The following table lists the properties for the database user account:

| Property | Description |
|---|---|
| Database user ID | Name for the domain configuration database user account. |
| User password | Password for the domain configuration database user account. |

16. Enter the parameters for the database. If you do not create a secure domain configuration repository, enter the parameters for the database.
    a. If you select IBM DB2, select whether to configure a tablespace and enter the tablespace name.

       The following table describes the properties that you must configure for the IBM DB2 database:

| Property | Description |
|---|---|
| Configure tablespace | Select whether to specify a tablespace:<br>1 - No<br>2 - Yes<br>In a single-partition database, if you select No, the installer creates the tables in the default tablespace. In a multi-partition database, you must select Yes. |
| Tablespace | Name of the tablespace in which to create the tables. Specify a tablespace that meets the pageSize requirement of 32768 bytes.<br>In a single-partition database, if you select Yes to configure the tablespace, enter the name of the tablespace in which to create the tables.<br>In a multi-partition database, specify the name of the tablespace that resides in the catalog partition of the database. |

    b. If you select Microsoft SQL Server, enter the schema name for the database.

       The following table describes the properties that you must configure for the Microsoft SQL Server database:

| Property | Description |
|---|---|
| Schema name | Name of the schema that will contain domain configuration tables. If this parameter is blank, the installer creates the tables in the default schema. |

    c. To enter the JDBC connection information using the JDBC URL information, press **1**. To enter the JDBC connection information using a custom JDBC connection string, press **2**.
    d. Enter the JDBC connection information.
       - To enter the connection information using the JDBC URL information, specify the JDBC URL properties.

The following table describes the database connection information:

| Prompt | Description |
|---|---|
| Database host name | Host name for the database. |
| Database port number | Port number for the database. |
| Database service name | Service or database name :<br>- Oracle: Enter the service name.<br>- Microsoft SQL Server: Enter the database name.<br>- IBM DB2: Enter the service name.<br>- Sybase ASE: Enter the database name. |
| Configure JDBC Parameters | Select whether to add additional JDBC parameters to the connection string:<br>1 - Yes<br>2 - No<br>If you select Yes, enter the parameters or press Enter to accept the default. If you select No, the installer creates the JDBC connection string without parameters. |

- To enter the connection information using a custom JDBC connection string, type the connection string.
  Use the following syntax in the JDBC connection string:
  **IBM DB2**

  ```
  jdbc:Informatica:db2://host_name:port_no;DatabaseName=
  ```

  **Oracle**

  ```
  jdbc:Informatica:oracle://host_name:port_no;ServiceName=
  ```

  **Microsoft SQL Server**

  ```
  jdbc:Informatica:sqlserver://
  host_name:port_no;SelectMethod=cursor;DatabaseName=
  ```

  **Microsoft Azure SQL Database**

  ```
  jdbc:Informatica:sqlserver://
  host_name:port_no;SelectMethod=cursor;DatabaseName=database_name;SnapshotSeria
  lizable=true;EncryptionMethod=SSL;HostNameInCertificate=*.database.windows.net
  ;ValidateServerCertificate=false
  ```

  **Sybase**

  ```
  jdbc:Informatica:sybase://host_name:port_no;DatabaseName=
  ```

  Verify that the connection string contains all the connection parameters required by your database system.

17. Modify the node host name and port number to match the configuration of the new version of Informatica.

The following table describes the domain and node properties that you can specify:

| Property | Description |
|---|---|
| Domain name | Name of the domain. The default domain name is Domain_<MachineName>. The name must not exceed 128 characters and must be 7-bit ASCII only. It cannot contain a space or any of the following characters: ` % * + ; " ? , < > \ / |
| Node name | Name of the node that you are upgrading. |
| Node host name | Host name of the machine that hosts the node you are upgrading. If the machine has a single network name, use the default host name. If the machine has multiple network names, you can modify the default host name to use an alternate network name. Optionally, you can use the IP address.<br>Note: Do not use localhost. The host name must explicitly identify the machine. |
| Custom keystore password | Plain text password for the custom keystore file. Enter the custom keystore password if you are securing the Informatica Administrator with a custom keystore file and you are upgrading to a different gateway node configuration. |
| Custom keystore file | Path and file name of the custom keystore file. Enter the custom keystore file if you are securing the Informatica Administrator with a custom keystore file and you are upgrading to a different gateway node configuration.<br>If you leave this field blank, the installer looks for the keystore file in the following directory:<br><Informatica installation directory>\tomcat\conf\ |
| Node port number | Port number for the node you are upgrading. The default port number for the node is 6005. |
| Gateway node host name | Host name of the machine that hosts the gateway node for the domain.<br>Available if you upgrade a worker node. |
| Gateway node port number | Port number of the gateway node.<br>Available if you upgrade a worker node. |

18. The installer displays the port numbers assigned the domain components.

    You can specify new port numbers or use the default port numbers.

    The following table describes the ports that you can specify:

| Port | Description |
|---|---|
| Service Manager port | Port number used by the Service Manager in the node. Client applications and the Informatica command line programs use this port to communicate to the services in the domain. |
| Service Manager Shutdown port | Port number that controls server shutdown for the domain Service Manager. The Service Manager listens for shutdown commands on this port. |

| Port | Description |
|---|---|
| Informatica Administrator port | Port number used by the Administrator tool.<br>Available if you upgrade a gateway node. |
| Informatica Administrator shutdown port | Port number used by the Administrator tool to listen for shut down commands.<br>Available if you upgrade a gateway node. |

The Post-Installation Summary window indicates whether the upgrade completed successfully. It also shows the status of the installed components and their configuration.

You can view the upgrade log files to get more information about the upgrade tasks performed by the installer and to view the configuration properties for the installed components.

# Upgrading in Silent Mode

When you upgrade in silent mode, you can change the node configuration to upgrade the domain to a different machine or to a different domain configuration repository database.

To upgrade the domain on the same machine and on the same domain configuration repository database, see "Upgrading in Silent Mode" on page 28.

To upgrade the Informatica services without user interaction, upgrade in silent mode. Use a properties file to specify the upgrade options. The installer reads the file to determine the upgrade options. You can use silent mode upgrade to upgrade the Informatica services on multiple machines on the network or to standardize the upgrade process across machines.

Copy the Informatica installation files to the hard disk on the machine that hosts the Informatica instance you plan to upgrade.

To upgrade in silent mode, complete the following tasks:

1. Create the upgrade properties file and specify the upgrade options.
2. Run the installer with the upgrade properties file.
3. Secure the passwords in the upgrade properties file.

CHAPTER 6

# Before You Upgrade the Application Services

This chapter includes the following topics:



## Configure Locale Environment Variables

Verify that the locale setting is compatible with the code page for the repository. If the locale setting is not compatible with the repository code page, you cannot create an application service.

Use LANG, LC_CTYPE, or LC_ALL to set the UNIX code page.

Different UNIX operating systems require different values for the same locale. The value for the locale variable is case sensitive.

Use the following command to verify that the value for the locale environment variable is compatible with the language settings for the machine and the type of code page you want to use for the repository:

```
locale -a
```

The command returns the languages installed on the UNIX operating system and the existing locale settings.

Set the following locale environment variables:

**Locale on Linux**

All UNIX operating systems except Linux have a unique value for each locale. Linux allows different values to represent the same locale. For example, “utf8,” “UTF-8,” “UTF8,” and “utf-8” represent the same locale on a Linux machine. Informatica requires that you use a specific value for each locale on a Linux machine. Make sure that you set the LANG environment variable appropriately for all Linux machines.

**Locale for Oracle database clients**

For Oracle database clients, set NLS_LANG to the locale that you want the database client and server to use with the login. A locale setting consists of the language, territory, and character set. The value of NLS_LANG depends on the configuration.

For example, if the value is american_america.UTF8, set the variable in a C shell with the following command:

```
setenv NLS_LANG american_america.UTF8
```

To read multibyte characters from the database, set the variable with the following command:

```
setenv NLS_LANG=american_america.AL32UTF8
```

You must set the correct variable on the Data Integration Service machine so that the Data Integration Service can read the Oracle data correctly.

# Configure Locale Environment Variables

Use LANG, LC_CTYPE, or LC_ALL to set the UNIX code page.

Different UNIX operating systems require different values for the same locale. The value for the locale variable is case sensitive.

Use the following command to verify that the value for the locale environment variable is compatible with the language settings for the machine and the type of code page you want to use for the repository:

```
locale -a
```

The command returns the languages installed on the UNIX operating system and the existing locale settings.

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All UNIX operating systems except Linux have a unique value for each locale. Linux allows different values to represent the same locale. For example, “utf8,” “UTF-8,” “UTF8,” and “utf-8” represent the same locale on a Linux machine. Informatica requires that you use a specific value for each locale on a Linux machine. Make sure that you set the LANG environment variable appropriately for all Linux machines.

**Locale for Oracle database clients**

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For example, if the value is american_america.UTF8, set the variable in a C shell with the following command:

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setenv NLS_LANG american_america.UTF8
```

To read multibyte characters from the database, set the variable with the following command:

```
setenv NLS_LANG=american_america.AL32UTF8
```

You must set the correct variable on the Data Integration Service machine so that the Data Integration Service can read the Oracle data correctly.

# Clear Browser Cache

Before you access the Administrator tool, clear the browser cache.

On Windows Internet Explorer, delete the browsing history, including temporary files, cookies, and history.

If you do not clear the browser cache, the previous Administrator tool URL is not redirected to the latest URL and some menu options may not appear.

# Complete Changing the Node Configuration

If you chose to change the node configuration during the domain upgrade because you migrated the Informatica services installation to a different machine, you must perform additional tasks before you upgrade the application services.

**Note:** If you chose to change the node configuration during the domain upgrade because you migrated the domain configuration repository to a different database, you do not need to perform additional tasks.

You must perform the following additional tasks:

1. Configure the environment variables.
2. Verify the range of dynamic port numbers.
3. Verify the location of the node backup directory.
4. Configure PowerExchange® Adapters.

## Configure Environment Variables

Informatica uses environment variables to store configuration information when it runs the application services and connects to the clients. Configure the environment variables to meet the Informatica requirements. Incorrectly configured environment variables can cause the Informatica domain or nodes to fail to start or can cause connection problems between the Informatica clients and the domain.

To configure environment variables, log in with the system user account you used to install Informatica.

### Configure Library Path Environment Variables

Configure library path environment variables on the machines that run the Data Integration Service processes. The variable name and requirements depend on the platform and database.

Configure the LD_LIBRARY_PATH environment variable.

The following table describes the values that you set for the LD_LIBRARY_PATH for the different databases:

| Database | Value |
|---|---|
| Oracle | <Database path>/lib |
| IBM DB2 | <Database path>/lib |
| Sybase ASE | "${SYBASE_OCS}/lib:${SYBASE_ASE}/lib:${LD_LIBRARY_PATH}" |
| Informix | <Database path>/lib |
| Teradata | <Database path>/lib |
| ODBC | <CLOSEDODBCHOME>/lib |

## Verify the Range of Dynamic Port Numbers

When you upgrade a migrated node, the upgrade wizard assigns a default range of port numbers that can be dynamically assigned to application service processes that run on the node.

The default range of dynamic port numbers is 6013 to 6113. Verify that the default range of port numbers are available on the machine that runs the new version of Informatica. If the range of port numbers are not available, use the Administrator tool to update the range. Configure the minimum and maximum dynamic port numbers for service processes in the **Advanced Properties** section of the node **Properties** view.

## Verify the Node Backup Directory

Verify that the backup directory for the node is accessible by the machine that runs the new version of Informatica. In the Administrator tool, view the **Backup Directory** property in the **Advanced Properties** section of the node **Properties** view.

## Configure PowerExchange Adapters

If your previous installation included PowerExchange adapters, configure the PowerExchange adapters on the machine that runs the new version of Informatica. If the PowerExchange adapter has an installer, re-install the PowerExchange adapter.

CHAPTER 7

# Application Service Upgrade

This chapter includes the following topics:



## Application Service Upgrade Overview

The Informatica services version that you upgrade from determines the application service upgrade process.

Some Informatica services versions require that you upgrade the application services. When you upgrade an application service, you must also upgrade the dependent services. When you upgrade an application service, the upgrade process upgrades the database contents of the databases associated with the service.

Use the service upgrade wizard, the actions menu of each service, or the command line to upgrade application services. The service upgrade wizard upgrades multiple services in the appropriate order and checks for dependencies. If you use the actions menu of each service or the command line to upgrade application services, you must upgrade the application services in the correct order and verify that you upgrade dependent services.

The privileges required to upgrade application services depend on the service.

After you upgrade the Model Repository Service, check the log to verify that the upgrade completed successfully.

### Privileges to Upgrade Services

The privileges required to upgrade application services depend on the application service.

A user with the Administrator role on the domain can access the service upgrade wizard.

A user must have these roles, privileges, and permissions to upgrade the following application services:

**Model Repository Service**

To upgrade the Model Repository Service using the service upgrade wizard, a user must have the following credentials:

- Administrator role on the domain.
- Create, Edit, and Delete Projects privilege for the Model Repository Service and write permission on projects.

To upgrade the Model Repository Service from the Actions menu or from the command line, a user must have the following credentials:

- Manage Services privilege for the domain and permission on the Model Repository Service.
- Create, Edit, and Delete Projects privilege for the Model Repository Service and write permission on projects.

**Data Integration Service**

To upgrade the Data Integration Service, a user must have the Administrator role on the Data Integration Service.

**Content Management Service**

To upgrade the Content Management Service, a user must have the Administrator role on the Content Management Service.

## Service Upgrade from Previous Versions

When you upgrade from a previous version, some application services require an upgrade. Upgrade the application services that you used in the previous version.

Verify that all application services are enabled.

To upgrade application services, upgrade the following services and associated databases in this order:

1. Model Repository Service
2. Data Integration Service
3. Profiling warehouse for the Data Integration Service

**Note:** When you upgrade all other application services, the upgrade process upgrades the database contents of the databases associated with the service.

# Running the Service Upgrade Wizard

Use the service upgrade wizard to upgrade application services and the database contents of the databases associated with the services. The service upgrade wizard displays upgraded services in a list along with services and associated databases that require an upgrade. You can also save the current or previous upgrade report.

**Note:** The Metadata Manager Service must be disabled before the upgrade. All other services must be enabled before the upgrade.

1. In the Informatica Administrator header area click **Manage** > **Upgrade**.
2. Select the application services and associated databases to upgrade.
3. Optionally, specify if you want to **Automatically recycle services after upgrade**.

   If you choose to automatically recycle application services after the upgrade, the upgrade wizard restarts the services after they have been upgraded.
4. Click **Next**.
5. If dependency errors exist, the **Dependency Errors** dialog box appears. Review the dependency errors and click **OK**. Then, resolve dependency errors and click **Next**.
6. Enter the repository login information.

7. Click **Next**.

   The service upgrade wizard upgrades each application service and associated database and displays the status and processing details.

8. When the upgrade completes, the **Summary** section displays the list of application services and their upgrade status. Click each service to view the upgrade details in the **Service Details** section.
9. Optionally, click **Save Report** to save the upgrade details to a file.

   If you choose not to save the report, you can click **Save Previous Report** the next time you launch the service upgrade wizard.

10. Click **Close**.
11. If you did not choose to automatically recycle application services after the upgrade, restart the upgraded services.

You can view the upgrade report and save the upgrade report. The second time you run the service upgrade wizard, the Save Previous Report option appears in the service upgrade wizard. If you did not save the upgrade report after upgrading services, you can select this option to view or save the previous upgrade report.

# Verify the Model Repository Service Upgrade

After you upgrade the Model Repository Service, check the Model Repository Service log to verify that the upgrade completed successfully.

## Object Dependency Graph

When you upgrade a Model Repository Service, the upgrade process upgrades the contents of the Model repository and rebuilds the object dependency graph.

If the upgrade process encounters a fatal error while upgrading the Model repository contents, then the service upgrade fails. The Administrator tool or the command line program informs you that you must perform the upgrade again.

If the upgrade process encounters a fatal error while rebuilding the object dependency graph, then the upgrade of the service succeeds. You cannot view object dependencies in the Developer tool until you rebuild the object dependency graph.

After you upgrade the Model Repository Service, verify that the Model Repository Service log includes the following message:

```
MRS_50431 "Finished rebuilding the object dependency graph for project group '<project group>'."
```

If the message does not exist in the log, run the infacmd mrs rebuildDependencyGraph command to rebuild the object dependency graph. Users must not access Model repository objects until the rebuild process completes, or the object dependency graph might not be accurate. Ask the users to log out of the Model Repository Service before service upgrade.

The infacmd mrs rebuildDependencyGraph command uses the following syntax:

```
rebuildDependencyGraph
<-DomainName|-dn> domain_name
[<-SecurityDomain|-sdn> security_domain]
<-UserName|-un> user_name
<-Password|-pd> password
```

```
<-ServiceName|-sn> service_name
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
```

## Maximum Heap Size

The upgrade process resets the Model Repository Service maximum heap size to 4 GB. After the upgrade, reset the maximum heap size property to the value to which it was set prior to the upgrade, or to the setting that Global Customer Support recommended for your environment.

Prior to Model Repository Service upgrade, set the value for -Xss parameter in the JVM Command Line Options to 1m. After the upgrade, reset the -Xss parameter value to the pre-upgrade value. The default value for -Xss parameter is 512k.

Effective in version 10.1, the property **MaxPermSize** in the JVM Command Line Options is replaced with **MaxMetaspaceSize**.

To reset the maximum heap size, select the service in the **Domain Navigator**, click the **Properties** view, and expand **Advanced Properties**. Set the **Maximum Heap Size** property to the pre-upgrade value. Set the **MaxMetaspaceSize** property to the minimum of 512 MB.

CHAPTER 8

# Informatica Client Upgrade

This chapter includes the following topics:



## Informatica Client Upgrade Overview

Use the client installer to upgrade a previous version of the Informatica Developer. The Informatica Developerare installed on the installation directory you specify. The client installer configures the newly installed Informatica Developer with the same settings as the previous version. The client installer does not modify the files of the previous version of the client tools.

Complete the pre-upgrade tasks before you start the upgrade. Run the installer on all machines that host previous versions of the Informatica Developer that you want to upgrade. You can upgrade the Informatica clients in graphical or silent mode.

When you run the client installer, you can upgrade the Informatica Developer.

Informatica Developer is a client application that you use to create and run mappings, data objects, and virtual databases. Objects created in Informatica Developer are stored in a Model repository and are run by a Data Integration Service. If you upgrade Informatica Developer, verify that the Informatica version, including the hotfix version, matches the version of the domain upgrade.

By default, the when you upgrade the Informatica Developer, the following components are also upgraded:

- DataDirect ODBC drivers
- Java Runtime Environment libraries

You can perform the upgrade from the root of the directory where you download the installation files.

On Windows, the length of the entire installation directory path, including the zip file name, must be 60 characters or less. Verify that the zip utility version is compatible with the Windows operating system version. When you unzip the file, verify that the zip utility also extracts empty folders.

# Informatica Client Upgrade Options

You can upgrade the Informatica client tools in one of the following ways:

- Upgrade in Graphical Mode. Upgrades the Informatica client tools in graphical mode. The installer guides you through the upgrade process.
- Upgrade in Silent Mode. Upgrades the Informatica client tools using a properties file that contains the upgrade options.

# Review the Patch Requirements

Before you upgrade the Informatica clients, verify that the machine has the required operating system patches and libraries.

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

# Upgrading in Graphical Mode

If you encounter problems when you run the install.bat file from the root directory, run the following file:

```
<Informatica installation directory>\client\install.exe
```

1. Close all applications.
2. Run install.bat from the root directory.
3. On the **Installation Type** page, select **Upgrade to Informatica 10.2.2 Clients** and click **Next**.
4. Read the terms and conditions for Informatica installation and the product usage toolkit and select **I agree to the terms and conditions**.

   Informatica DiscoveryIQ is a product usage tool that sends routine reports on data usage and system statistics to Informatica. Informatica DiscoveryIQ uploads data to Informatica 15 minutes after you install and configure Informatica domain. Thereafter, the domain sends the data every 30 days. You can choose to disable usage statistics from the Administrator tool.

   a. Press **1** if you do not want to accept the terms and conditions.

   b. Press **2** to accept the terms and conditions.
5. Version 10.2.2 is for big data products only, such as Big Data Management and Big Data Quality. This version does not support non-big data products, such as PowerCenter or Informatica Data Quality.

   a. Press **1** and type **quit** to quit the installation.

   b. Press **2** to continue the installation.

   If you choose to not accept the terms and condition, the installer prompts you to accept the terms and conditions.
6. On the **Upgrade Pre-Requisites** page, verify the system requirements before you continue the installation and click **Next**.
7. Click **Next**.

8. On the **Select Directory** page, enter the directory of the Informatica version you want to upgrade and the directory in which you want to install Informatica 10.2.2.

   The following table describes the directories you must specify:

| Directory | Description |
|---|---|
| Directory of the Informatica client to upgrade | Directory that contains the previous version of the Informatica client tool that you want to upgrade. |
| Directory for the Informatica 10.2.2 client tools | Directory in which to install the Informatica 10.2.2 client tools.<br>Enter the absolute path for the installation directory. The installation directory must be on the current machine. The directory names in the path must not contain spaces or the following special characters: @|* $ # ! % ( ) { } [ ] , ; '<br>**Note:** Informatica recommends using alphanumeric characters in the installation directory path. If you use a special character such as á or €, unexpected results might occur at run time. |

9. Click **Next**.
10. On the **Pre-Installation Summary** page, review the installation information and click **Install**.

    The installer copies the Informatica client files to the installation directory.
11. On the **Post-installation Summary** page, verify whether the upgrade completed successfully and click **Done** to close the installer.
12. After you complete an upgrade of Informatica Developer, log off the Windows machine and then log back on to complete the system configurations.

You can view the installation log files to get more information about the upgrade tasks performed by the installer.

# Upgrading in Silent Mode

To upgrade the Informatica client tools without user interaction, upgrade in silent mode. Use a properties file to specify the upgrade options. The installer reads the file to determine the upgrade options. You can use silent mode upgrade to upgrade the Informatica client tools on multiple machines on the network or to standardize the upgrade process across machines.

Copy the Informatica installation files to the hard disk on the machine that hosts the Informatica client you plan to upgrade.

To upgrade in silent mode, complete the following tasks:

1. Create the upgrade properties file and specify the upgrade options.
2. Run the installer with the upgrade properties file.

## Creating the Properties File

Informatica provides a sample properties file that includes the upgrade parameters that are required by the installer. You can customize the sample properties file to specify the options for your upgrade.

The sample properties file is named SilentInput.properties and is located in the root of the client installer directory.

1. Go to the root of the directory that contains the client installation files.
2. Locate the file named SilentInput.properties.

   Back up the file before you modify it.
3. Use a text editor to open the file and modify the values of the upgrade parameters.

   The following table describes the upgrade parameters you can modify:

| Property Name | Description |
|---|---|
| INSTALL_TYPE | Indicates whether to install or upgrade the Informatica client tools.<br>To upgrade from a previous version of Informatica, set the value to 1. |
| UPGRADE_WITHOUT_PC | Informatica does not support PowerCenter for version 10.2.2. If you want to install or upgrade to this version, the PowerCenter functionality will not be available.<br>Set the value to 1, to continue with the installation.<br>Set the value to 0, to quit the installer. |
| USER_INSTALL_DIR | Directory in which to install the new version of the Informatica client tools. |
| UPG_BACKUP_DIR | Directory of the previous version of the Informatica tools that you want to upgrade. |

4. Save the properties file.

## Running the Silent Installer

After you create the properties file, open a command prompt to start the silent upgrade.

1. Open a command prompt.
2. Go to root of the client installer directory.
3. Verify that the directory contains the file SilentInput.properties with the upgrade options.
4. To start the silent upgrade process, run silentInstall.bat.

   The silent upgrade runs in the background. The process can take a while. The silent upgrade process is complete when the Informatica_<Version>_Client_InstallLog.log is created in the installation directory.

   The silent upgrade fails if you incorrectly configure the properties file or if the installation directory is not accessible. If the upgrade fails, view the installation log files and correct the errors. Then run the silent installer again.
5. After you complete an upgrade of Informatica Developer, log off the Windows machine and then log back on to complete the system configurations.

CHAPTER 9

# After You Upgrade

This chapter includes the following topics:



## Secure Client Connections to the Domain

If you used a keystore file that you created to secure communication between client applications and the Informatica domain, you must verify the keystore location. If you used the default keystore file generated by the installer, you do not need to verify the keystore location.

**Note:** If you used RSA encryption with fewer than 512 bits to create the private key and SSL certificate, you must create new SSL certificate files. Due to the FREAK vulnerability, Informatica does not support RSA encryption with fewer than 512 bits.

The tasks that you must perform depend on the following locations where you previously stored the keystore files:

**A location inside the previous Informatica installation directory structure**

If you stored the keystore file in a location inside the previous Informatica installation directory structure, perform the following steps:

1. Copy the file to another location.
2. Update the gateway node with the copied keystore file location.
   Run the infasetup UpdateGatewayNode command on all gateway nodes update the gateway nodes with the location of the keystore file.
3. Update the application service with the copied keystore file location.

   Use the Administrator tool to update the location of the keystore file for application services. For example, if the keystore file is used for Analyst tool security, update the keystore file location in the Analyst Service properties.

**A location outside the previous Informatica installation directory structure**

If you stored the keystore file in a location outside the previous Informatica installation directory structure, verify all nodes in the domain can access the keystore file.

# Update the Log Events Directory

After you upgrade, you might want to update the log events directory for the domain.

The default value of the log events directory after an upgrade depends on the following upgrade types:

**Upgrade the domain without changes to the node configuration.**

The log events directory points to the location that you specified in the previous version.

**Upgrade the domain with changes to the node configuration.**

The log events directory points to the `isp/logs` directory in the new installation directory.

To use a different directory for the logs, update the Log Directory Path property for the domain in the Administrator tool. You can also use the infasetup updateGatewaynode command to update the directory. For example, you can configure the log events directory as the `server/infa_shared/logs` directory in the new installation directory.

# Data Integration Service

After you upgrade, complete the post-upgrade tasks for each Data Integration Service.

## Reset the HTTP Proxy Server Password

If the Data Integration Service runs Web Service Consumer transformations and is configured to use an HTTP proxy server with authentication, reset the HTTP proxy server password.

If you do not reset the password, then the Data Integration Service cannot successfully process Web Service Consumer transformations.

Reset the HTTP Proxy Server Password for the Data Integration Service in the Administrator tool.

## Verify the Execution Options

If the Data Integration Service runs on multiple nodes and you configured the execution options differently for each service process, verify that the Execution Options on the Properties view use the correct values. Use the values that you recorded for each Data Integration Service process before upgrading.

Effective in version 10.0, the execution options on the Processes view are moved to the Properties view for the Data Integration Service. You configure the execution options for the Data Integration Service. Each Data Integration Service process uses the same value for each option.

The upgrade determines the values based on the following situations:

- If the option defines a maximum integer value, the highest value defined for all processes is used as the Data Integration Service value on the Properties view.
- If the option defines a string value, the value defined for the first node encountered during the upgrade is used as the Data Integration Service value on the Properties view.

## Verify the Maximum Heap Size for Data Integration Service

If you work with rule specifications in the Analyst tool or in the Developer tool, verify the Maximum Heap Size property on the Data Integration Service. The property determines the amount of memory that the Data Integration Service can use to test rule specifications and to run mappings that contain rule specifications.

Find the Maximum Heap Size property in the Advanced Properties on the Data Integration Service. Verify that the Maximum Heap Size value is at least 2048 MB.

## Verify Maximum Memory Per Request

If you changed the default value of the Maximum Session Size property for a Data Integration Service process in the previous version, verify that the Maximum Memory Per Request property for the service uses the correct values.

Effective in version 10.0, the Data Integration Service process property Maximum Session Size is renamed to Maximum Memory Per Request. You configure the Maximum Memory Per Request property for the following Data Integration Service modules:

- Mapping Service Module. Default is 536,870,912 bytes.
- Profiling Service Module. Default is 536,870,912 bytes.
- SQL Service Module. Default is 50,000,000 bytes.
- Web Service Module. Default is 50,000,000 bytes.

The upgraded service uses the version 10.0 default value for each module. If you changed the default value of Maximum Session Size in a previous version, you must change the value of Maximum Memory Per Request after you upgrade. Use the value that you recorded for each Data Integration Service process before upgrading.

# Metadata Access Service

After you upgrade, you can create a Metadata Access Service. The Metadata Access Service is an application service that allows the Developer tool to access Hadoop connection information to import and preview metadata.

The Metadata Access Service contains information about the Service Principal Name (SPN) and keytab information if the Hadoop cluster uses Kerberos authentication.

The Metadata Access Service is not dependent on other services. You can create a Metadata Access Service in any order. When you import an object from a Hadoop cluster, the HBase, the Hive, and the HDFS connections use Metadata Access Service to extract the object metadata at design time.

## Create the Metadata Access Service

The Metadata Access Service allows the Developer tool to access Hadoop connection information to import and preview metadata from the Hadoop environment. The Metadata Access Service is required for design-time access to the Hadoop environment.

1. In the Administrator tool, click the **Manage** tab.
2. Click the **Services and Nodes** view.
3. In the Domain Navigator, select the domain.
4. Click **Actions** > **New** > **Metadata Access Service**.

   The **New Metadata Access Service** wizard appears.
5. On the **New Metadata Access Service - Step 1 of 3** page, enter the following properties:

| Property | Description |
|---|---|
| Name | Name of the service. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters or begin with @. It also cannot contain spaces or the following special characters:<br>` ~ % ^ * + = { } \ ; : ' " / ? . , < > \| ! ( ) ] [ |
| Description | Description of the service. The description cannot exceed 765 characters. |
| Location | Domain and folder where the service is created. Click **Browse** to choose a different folder. You can move the service after you create it. |
| License | License object that allows use of the service. |
| Node | Node on which the service runs. |
| Backup Nodes | If your license includes high availability, nodes on which the service can run if the primary node is unavailable. |

6. Click **Next**.

   The **New Metadata Access Service - Step 2 of 3** page appears.
7. Select the HTTP Protocol Type and enter the respective port number to use for the Metadata Access Service.
8. Accept the default values for the remaining security properties. You can configure the security properties after you create the Metadata Access Service.

9. Select **Enable Service**.

   The Metadata Access Service does not have any other service dependency.

10. Click **Next**.

    The **New Metadata Access Service - Step 3 of 3** page appears.

11. If applicable, specify the execution options for impersonation user, Kerberos cluster, logging options, and click **Next**.

12. Click **Finish**.

    The domain creates and enables the Metadata Access Service.

# Analyst Service

After you upgrade, complete the post-upgrade tasks for each Analyst Service.

## Enter the Model Repository Username and Password

If you use Business Glossary approval in a domain with Kerberos authentication, you must enter the user name and password for the Model Repository Service in the Analyst Service. The user name and password are not mandatory when you create the Analyst Service, but they are required for the approval workflow to work in a domain with Kerberos authentication.

To ensure that the approval workflow works in a domain with Kerberos authentication, perform the following steps:

1. In the Administrator tool, click the **Services and Nodes** tab.
2. In the Domain Navigator, select the Analyst Service.
3. Edit the Model Repository Service properties.
4. In the **Edit Model Repository Service Properties** dialog box, enter the user name and password for the Model Repository Service.
5. Click **OK**.

## Verify the Flat File Cache Location

You must verify the location of the flat file cache directory after you upgrade. The upgrade process does not update this location.

If you created the flat file cache directory within the previous Informatica installation directory, copy the directory to the upgraded Informatica installation directory and update the Analyst Service property with the new location.

If you created the directory outside of the previous Informatica installation directory, verify that both the Analyst Service and the Data Integration Service can access the directory.

If the Analyst Service and the Data Integration Service run on different nodes, configure the flat file directory to use a shared directory. If the Data Integration Service runs on primary and back-up nodes or on a grid, each Data Integration Service process must be able to access the files in the shared directory.

To verify the location of the flat file cache directory, view the **Flat File Cache Location** property in the run-time properties for the Analyst Service.

## Verify the Temporary Export File Location

You must verify or provide the location of the temporary export file directory after you upgrade. The Analyst tool uses this location to store business glossaries that you export. The upgrade process does not update this location.

If you created the temporary export file directory within the previous Informatica installation directory, copy the directory to the upgraded Informatica installation directory and update the Analyst Service property with the new location. If you created the directory outside of the previous Informatica installation directory, verify that the machine that runs the Analyst Service can access the directory. If you have not configured the location of the temporary export file directory, provide a location where the Analyst tool can store glossaries during export.

To verify or provide the location of the temporary export file directory, view the **Temporary Export File Directory** property in the Business Glossary properties for the Analyst Service.

## Recycle the Analyst Service

To access the Analyst tool after you upgrade, recycle the Analyst Service. Before you recycle the Analyst Service, complete the upgrade and post-upgrade steps for the Model Repository Service and Data Integration Service. After you recycle the Analyst Service, wait for at least 10 minutes before you access the **Glossary** workspace.

Before you recycle the Analyst Service, verify that you have performed the following tasks:

- Upgrade the Model Repository Service.
- Upgrade the Data Integration Service.

**Note:** The Model Repository Service and the Data Integration Service must be running before you recycle the Analyst Service.

# Search Service

To perform searches in the Analyst tool after you upgrade, delete the existing Search Service index file location and re-index the Search Service in the Informatica domain. Before you re-index the Search Service, complete the upgrade and post-upgrade steps for the Model Repository Service, Data Integration Service, and Analyst Service.

Before you enable and re-index the Search Service, perform the following tasks:

- Delete the existing Search Service index file location.
- Upgrade the Model Repository Service.
- Upgrade the Data Integration Service.
- Recycle the Analyst Service.

**Note:** The Model Repository Service, Data Integration Service, and Analyst Service must be running before you enable the Search Service.

# Reference Data

After you upgrade, complete the post-upgrade tasks for reference data objects and files.

## Compile Probabilistic Models

Informatica uses Named Entity Recognition technology to compile the logic in a probabilistic model. To verify that a probabilistic model uses the current Named Entity Recognition engine, a Developer tool user can recompile the model after the upgrade is complete.

Recompilation is optional. A probabilistic model generates the same results for an input data set before and after you upgrade. A Developer tool user might recompile a probabilistic model to take advantage of any change to the data analysis algorithms in the Named Entity Recognition engine.

# Profiles

After you upgrade, complete the post-upgrade tasks for profiles and scorecards.

## Import Data Domains

To add predefined data domain groups and related data domains to the data domain glossary, import the `Informatica_IDE_DataDomain.xml` file into the Developer tool using the **Windows > Preferences > Informatica > Data Domain Glossary > Import** menu option.

To view and make changes to rules associated with data domains, import the `Informatica_IDE_DataDomainRule.xml` file using the **File > Import** menu option in the Developer tool.

## Run infacmd Commands

After the upgrade, run the following infacmd commands:

1. Run infacmd ps restoreProfilesAndScorecards command to restore the profiles and scorecards from a previous version to the current version. Sometimes, after you upgrade and drill down on the existing profile results or scorecard results, rule columns might not appear in the drilldown results. To include rule columns in the results, run the infacmd ps restoreProfilesAndScorecards command. Make sure that you create a backup of the Model repository content before you run the command.

# Upgrade the Connection Provider Type for Microsoft SQL Server

After you upgrade, the Microsoft SQL Server connection is set to the OLEDB provider type by default.

It is recommended that you upgrade all your Microsoft SQL Server connections to use the ODBC provider type. You can upgrade all your Microsoft SQL Server connections to the ODBC provider type by using the Informatica services in the following format:

```
ODBCINST=<INFA_HOME>/ODBC7.1/odbcinst.ini
```

After you set the environment variable, you must restart the node that hosts the Informatica services.

# Update the Microsoft SQL Server ODBC Driver File Name

Effective in version 10.2.2, the Microsoft SQL Server ODBC driver file name has changed from `DWsqls27.so` to `DWsqls28.so`.

When you upgrade and you want to use an existing Microsoft SQL Server connection with the **Use DSN** enabled in the connection from an earlier version, you must update the `odbc.ini` file to point to the ODBC driver path that contains the `DWsqls28.so` file.

# Upgrade the Informatica Drivers for SQL Data Services

Upgrade the Informatica JDBC or ODBC drivers for SQL data services.

Upgrade the Informatica ODBC or JDBC driver on the machine from which you connect to the SQL data service. To upgrade the driver, run the Informatica JDBC/ODBC driver installation program and select the upgrade option.

# Upgrade the Informatica Cassandra ODBC Data Sources

After you upgrade, you must replace the `odbc.ini` file with the back up copy of the `odbc.ini` file and change the Cassandra ODBC driver name.

After you replace the `odbc.ini` file, you must update the value of the `Driver` property in the `odbc.ini` file to `<Informatica installation directory>\tools\cassandra\lib\libcassandraodbc_sb64.so`.

# Copy the Data Transformation Files

After you upgrade Data Transformation, copy the files from the previous installation directories to the new installation directories, to get the same workspace, repository, and custom global components as in the previous version.

| File or Directory | Default Location |
|---|---|
| Repository | <Informatica installation directory>\DataTransformation\ServiceDB |
| Custom Global Components directory (TGP files) | <Informatica installation directory>\DataTransformation\autoInclude\user |
| Custom Global Components directory (DLL and JAR files) | <Informatica installation directory>\DataTransformation\externLibs\user |

Do not copy the Data Transformation Library files. Instead, install the Data Transformation Libraries again.

# Update Connection Properties

If you upgraded the Informatica platform, update the Kafka and Amazon Kinesis connection properties. Review connections that you created in a previous release to update the values for connection properties.

Based on the data objects in the streaming mapping, update the following connections before you run the mapping:

**Amazon Kinesis**

Update the region before you run a streaming mapping that contains an Amazon Kinesis data object. Perform the following steps:

1. Delete the existing Amazon Kinesis connection and create a new connection with the same name. Specify the region where the endpoint for your service is available.
2. Update the Amazon Kinesis data object properties with the new connection details.

**Kafka**

After you upgrade, Configure the Kafka messaging broker version to 0.10.1.x-2.0.0.

# Update Mappings for Dropped Hive Engine Support

After you upgrade, you need to update mappings that have the Hive engine configured within the Hadoop validation environment. Run a series of infacmd commands to update mappings to change the Hive engine configuration. Informatica continues to support the Blaze and Spark engines in the Hadoop environment.

Run commands using the following infacmd plugins.

- **infacmd dis plugin**. Run commands with the dis plugin to update mappings that are deployed to the Data Integration Service. For example, dis enableMappingValidationEnvironment.
- **infacmd mrs plugin**. Run commands with the mrs plugin to update mappings that are not deployed to the Data Integration Service. For example, mrs enableMappingValidationEnvironment.

**Note:** When you run the commands, the -sn (Service Name) parameter depends on the plugin that you use. Use the name of the Data Integration Service when you run dis commands, and use the name of the Model Repository Service when you run mrs commands.

Run the following commands against both the dis and the mrs plugins.

**listMappingEngines**

To identify mappings that have the Hive engine configured for validation, run the listMappingEngines command. Consider the following sample syntax:

```
mrs|dis listMappingEngines -dn domain_3987 -un Administrator -pd Password -vef hive -sn
SN_3986
```

**enableMappingValidationEnvironment**

If you want to enable other validation environments, run the enableMappingValidationEnvironment command for each environment that you want to enable. You can enable the following environments: native, blaze, spark, or spark-databricks. Consider the following sample syntax examples based on different command filters:

- Modify all mappings.
  ```
  mrs|dis enableMappingValidationEnvironment -dn domain_3987 -un Administrator -pd
  Password -sn SN_3986 -ve spark -cn HADOOP_cco_hdp619
  ```
- Modify mappings based on mapping name.
  ```
  mrs|dis enableMappingValidationEnvironment -dn domain_3987 -un Administrator -pd
  Password -sn SN_3986 -ve spark -cn HADOOP_cco_hdp619 -mnf m_nav327,m_nav376
  ```
- Modify mappings based on execution environment, mapping name, and project name.
  ```
  mrs|dis enableMappingValidationEnvironment -dn domain_3987 -un Administrator -pd
  Password -sn SN_3986 -ve spark -cn HADOOP_cco_hdp619 -eef hadoop -mnf
  m_nav327,m_nav376 -pn project1
  ```

**setMappingExecutionEnvironment**

If you want to change the execution environment, run the setMappingExecutionEnvironment. Consider the following sample syntax based on mapping name filter:

```
mrs|dis setMappingExecutionEnvironment -dn domain_3987 -un Administrator -pd Password -sn
SN_3986 -ee Databricks -mnf m_nav327,m_nav376 -cn DATABRICKS_cco_db619
```

**disableMappingValidationEnvironment**

Update all mappings in the Model repository to disable the Hive engine from the Hadoop validation environment. Consider the following sample syntax:

```
mrs|dis disableMappingValidationEnvironment -dn domain_3987 -un Administrator -pd
Password -sn SN_3986 -ve hive
```

**listMappingEngines**

Run the listMappingEngines command again to verify that there are no mappings with a Hive validation environment.

For information about the commands, see the *Informatica Command Reference*.

### Warnings

Consider the following points of failure if you do not update the environments:

- Mappings fail at run time if configured with the Hive engine as the only validation environment.
- If you edit the validation environment in the Developer tool that has the Hive engine as the only validation environment, the Hadoop connection in the mapping is lost. You need to set the validation environments and select the Hadoop connection again. This can happen when you upgrade from a previous version or when you import a mapping from a previous version.

# Update Profiles for Dropped Hive Engine Support

Effective in version 10.2.2, Informatica dropped support for the Hive engine. If you have profiles configured to run on the Hive engine, you need to update them to run on a different engine. Informatica continues to support the Blaze engine in the Hadoop environment.

You must manually identify and change profiles configured to run on the Hive engine.

# Read the Release Guide

The *Informatica Release Guide* lists new features and enhancements, behavior changes between versions, and tasks that you might need to perform after you upgrade. Read the *Informatica Release Guide* to view the list of new functionality that you might want to implement or new options that you might want to enable.

APPENDIX A

# Upgrade Checklist

This appendix includes the following topics:



## Upgrade Checklist Overview

The upgrade checklist summarizes the tasks that you must perform to complete an upgrade. If you upgrade the Informatica product on more than one machine, complete the first upgrade using the detailed instructions in this guide. You can use this checklist to perform subsequent upgrades.

## Before You Upgrade the Domain

Before you upgrade the domain, perform the following pre-upgrade tasks:

- ❑ Read the Informatica Release Notes.
- ❑ Split the Domain.
- ❑ Perform the following tasks to set up the machine to meet the requirements on UNIX:
  - Verify that the machine has the required operating system patches and libraries.
  - Verify that the machine meets the minimum system requirements to upgrade the domain.
  - Verify that the machine meets the hardware requirements to upgrade the application services.
  - Review the environment variables.
  - Verify that the operating system meets the file descriptor requirement.
  - Review the maximum heap size setting.

- Extract the installer files.
- Run the pre-installation (i10Pi) system check tool.
- Run the Informatica Upgrade Advisor.

❑ Back up the Data Transformation Files.

❑ Disable the Analyst Service through Administrator tool or through infacmd DisableService.

❑ Perform the following tasks to prepare the Model repository:
- Back up the Model repository.
- Verify the user account requirements for the Model repository database.

❑ Perform the following tasks to prepare the Data Integration Service:
- Record the execution options for each Data Integration Service process.
- Verify that all workflows are complete.

❑ Perform the following tasks to prepare the profiling warehouse:
- Use the native database back up option to back up the profiling warehouse.
- Verify the user account permissions for the database.

❑ Use the native database back-up option to back up profiling warehouse, reference data warehouse, and workflow database.

❑ Back Up the odbc.ini File for Informatica Cassandra ODBC Driver.

❑ Perform the following tasks to prepare the domain:
- Shut down the domain. To shut down the domain, stop the Informatica service process on each node in the domain.
- Back up the domain.

❑ Prepare to change the node configuration.
Perform the additional pre-upgrade tasks if you choose to change the node configuration for the following reasons:

# Domain Upgrade

Use the server installer to upgrade the domain. The server installer provides a domain upgrade wizard to guide you through the upgrade process.

The upgrade wizard installs the Informatica files in the installation directory that you specify. It does not modify the files in the directory of the previous version.

When you run the upgrade wizard, select the option to change the node configuration if you upgrade the domain to a different machine or to a different domain configuration repository database.

# Before You Upgrade the Application Services

Before you upgrade application services, perform the following pre-upgrade tasks:

- ❑ Configure locale environment variables.
  Verify that the locale setting is compatible with the code page for the repository.
- ❑ Clear the browser cache.
- ❑ If you chose the option to change the node configuration to migrate the Informatica installation to a different machine, perform the following tasks:
  - Configure the environment variables.
  - Configure Library Path Environment Variables.
  - Verify the range of port numbers that can be dynamically assigned to application service processes that run on the node.
  - Verify that the backup directory for the node is accessible by the node.
  - Configure PowerExchange adapters. If the PowerExchange adapter has an installer, re-install the PowerExchange adapter.

# Application Service Upgrade

Some service versions require a service upgrade. You can use the service upgrade wizard to upgrade services.

- ❑ Verify the privileges required to upgrade for the following application services:
  - Model Repository Service
  - Data Integration Service
  - Content Management Service
- ❑ Upgrade the following services and associated databases:
  - Model Repository Service
  - Data Integration Service
  - Profiling warehouse for the Data Integration Service
- ❑ Run the Service Upgrade Wizard to upgrade application services and the database contents of the databases associated with the services.
- ❑ Verify the Model Repository Service Upgrade.
  - Object dependency graph.
  - Maximum heap size

# Informatica Client Upgrade

Use the client installer to upgrade the client tools. The client tools are installed in the installation directory you specify. The client installer configures the newly installed client tools with the same settings as the previous version.

# After You Upgrade

After you upgrade the domain, application services, and client files, perform the following post-upgrade tasks:

- ❑ Perform the following tasks for the domain:
  - If you used your SSL certificate files to enable secure communication in the previous domain, verify the keystore and truststore file locations. The upgrade process does not update these locations.
  - You can optionally configure the domain configuration repository on a database that is secured with the SSL protocol.
- ❑ Create the Metadata Access Service to access Hadoop connection information to import and preview metadata from the Hadoop environment.
- ❑ Perform the following tasks for each Data Integration Service:
  - Reset the HTTP proxy server password.
    If the Data Integration Service runs Web Service Consumer transformations and is configured to use an HTTP proxy server with authentication, reset the HTTP proxy server password.
  - If the Data Integration Service runs on multiple nodes and you configured the execution options differently for each service process, verify that the Execution Options on the Properties view use the correct values.
  - If you work with rule specifications in the Analyst tool or the Developer tool, verify the Maximum Heap Size value.
  - Verify that the Maximum Memory Per Request property uses the correct value for each Data Integration Service module.
- ❑ Perform the following tasks for each Analyst Service:
  - If you use Business Glossary approval workflow in a domain with Kerberos authentication, enter the user name and password for the Model Repository Service.
  - Verify the location of the flat file cache directory. The upgrade process does not update this location.
  - Verify or configure the location of the temporary export file directory for Business Glossary files. The upgrade process does not update this location.
  - Verify or configure the location of the asset attachment directory for Business Glossary files. The upgrade process does not update this location.
  - If you will run workflows that contain Human tasks, optionally specify an exception management audit database and schema.
  - Recycle the Analyst Service.
    Before you recycle the Analyst Service, complete the upgrade and post-upgrade steps for the Model Repository Service, Data Integration Service, and Content Management Service.

- ❑ Verify that a probabilistic model uses the current Named Entity Recognition engine for reference data objects and files. A Developer tool user can recompile the model after the upgrade is complete.
- ❑ Perform the following tasks for profiles and scorecards:
  - Import data domain groups and related data domains to the data domain glossary. If you want to add predefined data domain groups and their related data domains to the data domain glossary, import the `Informatica_IDE_DataDomain.xml` file.
  - Run infacmd ps restoreProfilesAndScorecards command to restore the profiles and scorecards from a previous version to the current version.
  - Run the scorecards to view the statistics in the Cumulative Metrics Trend pane for the scorecards that you had created.
- ❑ Upgrade all your Microsoft SQL Server connections to use the ODBC provider type.
- ❑ Upgrade the Informatica Drivers for SQL Data Service.
- ❑ Upgrade the Informatica Cassandra ODBC Data Sources.
- ❑ Copy the Data Transformation files from the previous installation directories to the new installation directories, to get the same workspace, repository, and custom global components as in the previous version.
- ❑ Read the *Informatica Release Guide* to view the list of new functionality that you might want to implement or new options that you might want to enable.

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