Informatica

Informatica® Dynamic Data Masking
9.8.2

Log Loader

Informatica Dynamic Data Masking Log Loader
9.8.2
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Preface

Log Loader contains information to help administrators use the Log Loader to export Dynamic Data Masking log information into database objects. This guide assumes that you have knowledge of Dynamic Data Masking.

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CHAPTER 1

Introduction to Log Loader

This chapter includes the following topics:

- Log Loader Overview, 8
- Using the Log Loader with Multiple Servers, 8

Log Loader Overview

The Log Loader is a utility that loads the content of the Dynamic Data Masking rule log file into a database. You can use the database client tools to analyze log information that the Log Loader loads into the database tables.

The Log Loader loads information from the rule log file into Oracle, DB2, Microsoft SQL Server, and Informix databases. The rule log file logs the statements that the Dynamic Data Masking Server modifies as it sends statements from the application to the database server. The Log Loader can store the log information from multiple servers in the same database tables.

The Log Loader is in the Dynamic Data Masking installation directory and is a separate program from Dynamic Data Masking.

Using the Log Loader with Multiple Servers

The Log Loader can store the content of rule log files from different servers in the same database tables.

If you run Dynamic Data Masking on more than one server, the Log Loader can compile the log information from the servers. Each Log Loader installed with the Dynamic Data Masking Server stores the rule log information in the database you define in the Log Loader properties file. The server name column of the rule log table lists the server that the log information is from.

CHAPTER 2

Prepare the Database

This chapter includes the following topics:

- Prepare the Database Overview, 9
- Create Database User, 9
- Create Log Loader Tables, 9

Prepare the Database Overview

Create the database user that runs the Log Loader and the database tables that store the log information.

Complete the following tasks to prepare the database:

- Create a database user
- Create Log Loader tables in the database

Create Database User

Create a database user that you use to run the log loader and store the log information.

Create a dedicated database Dynamic Data Masking user to run the log loader. You cannot run the log loader as a SYSTEM or SYS database user.

Create Log Loader Tables

The Log Loader directory contains folders for Oracle, DB2, Microsoft SQL Server, and Informix. Each folder contains an SQL script that creates rule log tables and statement log tables for the database.

Run the SQL script in the database to create the tables. The SQL scripts create the following database tables:

- STATEMENT_LOG. Contains SQL statements from the rule log file.
- RULE_LOG. Contains the rules that the Dynamic Data Masking Server uses for the statements in the statement log table.

Note: If you run the Log Loader on an Informix database, you must provide enough space to write large log files into the Log Loader tables.

Creating Log Loader Tables

Create the statement log and rule log tables in the database.

1. Log in to the database with the database user you created to run the Log Loader.
2. Run the appropriate SQL script in the database. The following table lists the location of each SQL script:

Database	Path
Oracle	<Dynamic Data Masking directory>\LogLoader\sql\oracle \create_rule_log_script_oracle.sql
DB2	<Dynamic Data Masking directory>\LogLoader\sql \db2\create_rule_log_script_db2.sql
Microsoft SQL Server	<Dynamic Data Masking directory>\LogLoader\sql\sql_server \create_rule_log_script_sql_server.sql
Informix	<Dynamic Data Masking directory>\LogLoader\sql\informix \create_rule_log_script_informix.sql

Note: To delete the tables, run the drop_rule_log_script file for the appropriate database.

CHAPTER 3

Log Loader Setup

This chapter includes the following topics:

- Log Loader Setup Overview, 11
- Create the Log Loader Properties File, 11
- Encrypt the User Password, 13

Log Loader Setup Overview

Configure the Log Loader to connect to the database and load the log information into the statement log and rule log tables.

Complete the following task to configure the Log Loader:

- Configure the Log Loader properties file to load the log information.
- Encrypt the user password.

Create the Log Loader Properties File

Create and configure the logloader.properties file to load log information into the database tables.

Configure the properties file and save it in the cfg directory with the name logLoader.properties.

The Log Loader contains sample properties files for Oracle, DB2, Microsoft SQL Server, and Informix. The following table lists the location of each file:

Database	Path
Oracle	`<Dynamic Data Masking directory>\LogLoader\cfg\oracle \logLoader_oracle.properties`
DB2	`<Dynamic Data Masking directory>\LogLoader\cfg \db2\logLoader_db2.properties`

Database	Path
Microsoft SQL Server	<Dynamic Data Masking directory>\LogLoader\cfg\sql_server \logLoader_sql_server.properties
Informix	<Dynamic Data Masking directory>\LogLoader\cfg\informix \logLoader_informix.properties

Save the logLoader.properties file in the following directory:

<Dynamic Data Masking directory>\logloader\cfg\logLoader.properties

LogLoader.properties

The Log Loader properties file configures the Log Loader to retrieve information from the rule log file and write the information to the database.

The following table describes the properties that you define the Log Loader properties file:

Property	Description
ak.instance	A unique name to identify the server.
logDir	The path to the log directory of the Dynamic Data Masking Server. Rule logs for Oracle, DB2, and Informix are in the following directory: <Dynamic Data Masking directory>\log Rule logs for Microsoft SQL Server are in the following directory: <Dynamic Data Masking directory>\gs\log
jdbc.driver	The database driver.
jdbc.url	The driver connection URL.
jdbc.user	The database user that stores the log information.
jdbc.password	The password for jdbc.user.
password.Encrypted	Encrypts the jdbc.password property. Run the Log Loader with the encrypt parameter to encrypt the password.
commitCount	Defines the number statements the Log Loader processes before it commits them to the database. The default is 1000.
debug	If debug is set to true, the Log Loader prints debug information to the output stream.

Sample logLoader.properties File

The following text shows a sample Log Loader properties file configured for Oracle:

```
ak.instance=invr28ilm6
logDir=../log
jdbc.driver=com.informatica.jdbc.oracle.OracleDriver
jdbc.url=jdbc:informatica:oracle://127.0.0.1:1521;SID=XE
jdbc.user=DDM
jdbc.password=NNAIGOFHCFMGIDKG
passwordEncrypted=true
```

```
commitCount=1000
debug=false
```

Encrypt the User Password

You can use the encrypt parameter to encrypt the JDBC user password in the Log Loader properties file.

The encrypt parameter creates the passwordEncrypted=true property in the Log Loader properties file. The Log Loader uses the encrypted password.

To encrypt the user password, run the Log Loader with the appropriate command followed by `encrypt`. The Log Loader does not upload the rule log file when you use the encrypt parameter.

To change the password, enter the new password in the Log Loader properties file and remove the password encrypted property.

CHAPTER 4

Running the Log Loader

This chapter includes the following topics:

- Running the Log Loader Overview, 14
- Run the Log Loader, 14

Running the Log Loader Overview

Run the Log Loader regularly to update the database tables with log information.

Each time you run the Log Loader, it appends information to the Log Loader tables. The Log Loader adds new information from the rule log file and does not reload information that is in the log tables. You can configure the Log Loader to run at a specified interval.

Run the Log Loader

Run the Log Loader to append log information to the statement log and rule log tables.

1. To run the Log Loader on Windows, use the following command:

   ```
   <Dynamic Data Masking Directory>\LogLoader\LogLoader.bat
   ```

2. To run the Log Loader on Linux and UNIX, use the following command:

   ```
   <Dynamic Data Masking Directory>/LogLoader/logloader
   ```

CHAPTER 5

Reports

This chapter includes the following topics:

- Reports Overview, 15
- Set Up Reports, 15
- Running Reports, 16
- Output Files, 17

Reports Overview

Dynamic Data Masking Reports is a tool that you can use to create output files with information from the Log Loader database tables.

Run the Log Loader and then run Reports to create PDF and HTML files of the log information.

You can find Dynamic Data Masking Reports in the following location:

```
<Dynamic Data Masking installation>\Reports
```

Set Up Reports

Set up the Reports parameters before you run Reports.

1. Run the Log Loader.

   The Log Loader updates the database tables.
2. Navigate to the following directory:

   ```
   <Dynamic Data Masking installation>\Reports
   ```
3. Open the sample_DDMReports.properties file in a text editor.
4. Configure the properties in the sample_DDMReports.properties file.

The following table describes the properties in the sample_DDMReports.properties file:

Property	Description
jdbc.url	The driver connection URL.
jdbc.driver	The database driver
jdbc.username	The database user that stores the log information.
jdbc.password	The password for jdbc.username.
ReportLocation	The file path to the report output forms. You can find the report output forms in the following location: `<Dynamic Data Masking installation>\Reports`
OutputFile	The name of the output file.
OutputFormat	The output format. You can choose a PDF or HTML output format.

5. Save the file in the Reports directory as DDMReports.properties.

Running Reports

Run Dynamic Data Masking Reports to create Reports output files of the log information in the Log Loader database tables.

Run Reports with the following command:

```
java -Djava.util.logging.config.file=ddmreportlog.properties -classpath .;jars\*;
DDMReportGenerator <Parameters>
```

The following table describes the parameters that you can define:

Parameter	Description
Rule	The name of the Dynamic Data Masking rule.
RuleList	A list of the Dynamic Data Masking rules. Separate rules with a comma.
Database	The server name in the SERVER_NAME column of the RULE_LOG table.
Database List	A list of server names. Separate the server names with a comma.
Program	The program that queried the database.
StartDate*	The date of the log entry in the Dynamic Data Masking log. Reports compiles log information that Dynamic Data Masking logged after the StartDate. Use dd/mm/yyyy format for StartDate.
EndDate*	The date of the log entry in the Dynamic Data Masking log. Reports compiles log information that Dynamic Data Masking logged before the EndDate. Use dd/mm/yyyy format for EndDate.

Parameter	Description
Report Name*	The report name. You can choose the following report names: - Data Source Interaction - Rule Interaction - Rules With Data Masking
**You must define the Report Name and the StartDate or EndDate*	

Output Files

Dynamic Data Masking has different reports for the log information in the Log Loader database tables. Choose a report based on the log information you need.

The following table describes the reports:

Report Name	Description
Data Source Interaction	A summary report that contains the number of rules that Dynamic Data Masking applied per database source.
Rule Interaction	A list of clients and the tables and columns they access on a database.
Rules With Data Masking	A list databases and the number of times each masking rule applied to the database.

APPENDIX A

Log Loader Tables

This appendix includes the following topics:

- STATEMENT_LOG, 18
- RULE_LOG, 18

STATEMENT_LOG

The following table describes the columns in the statement log table:

Column	Description
STMT_ID*	A unique identifier of the original SQL statement.
LINE_NUMBER	The row number in the table.
STMT_LINE	The original SQL statement sent to the Dynamic Data Masking Server. If the SQL statement length exceeds the STMT_LINE column length, the statement is in multiple rows with the LINE_NUMBER value incremented by one and the same STMT_ID value.
*You can use the column to create a join between the statement log table and the rule log table.	

RULE_LOG

The following table describes the columns in the rule log table:

Column	Description
SERVER_NAME	The unique name of the server. The server name is defined in the ak.instance property of the Log Loader properties file.
CONNECTION_DATE	The date that Dynamic Data Masking entered the data into the rule log file.

Column	Description
CONNECTION_TIME	The time that Dynamic Data Masking entered the data into the rule log file.
CONNECTION_MSEC	The millisecond that Dynamic Data Masking entered the data into the rule log file.
THREAD_NAME	The thread subprocess of the Dynamic Data Masking Server that handled the rule.
MODE_NAME	The rule mode. MODE_NAME can be replace, block, none, etc.
RULE_NAME	The rule name you define in the Management Console.
MESSAGE	The error message you define in the Management Console.
ORIGINAL_STATEMENT*	The unique identifier of the original SQL request sent to the Dynamic Data Masking Server. The STMT_ID column of the statement log table references the original statement column.
REPLACED_BY*	The unique identifier of the SQL statement created by Dynamic Data Masking Server. The STMT_ID column of the statement log table references the REPLACED_BY column.
OS_USER_NAME	The operating system user.
HOST_NAME	The IP address or host name of the client machine that sends the request.
PROGRAM_NAME	The name of the application that sent the SQL request.
SESSION_ID	The session identifier of the database process that precedes the SQL statement.
SERIAL_NUMBER	Identifies the database process.
USERNAME	The database username that connected to the database.
INSTANCE_NO	The INSTANCE_NUMBER parameter of Oracle Real Application Clusters.
*You can use the column to create a join between the statement log table and the rule log table.	

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