Informatica®

Informatica® Cloud Data Integration

Google Cloud Storage Connector

Informatica Cloud Data Integration Google Cloud Storage Connector
October 2022

© Copyright Informatica LLC 2016, 2022

This software and documentation are provided only under a separate license agreement containing restrictions on use and disclosure. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC.

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation is subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License.

Informatica, the Informatica logo, Informatica Cloud, and PowerCenter are trademarks or registered trademarks of Informatica LLC in the United States and many jurisdictions throughout the world. A current list of Informatica trademarks is available on the web at https://www.informatica.com/trademarks.html. Other company and product names may be trade names or trademarks of their respective owners.

Portions of this software and/or documentation are subject to copyright held by third parties. Required third party notices are included with the product.

See patents at https://www.informatica.com/legal/patents.html.

DISCLAIMER: Informatica LLC provides this documentation "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of noninfringement, merchantability, or use for a particular purpose. Informatica LLC does not warrant that this software or documentation is error free. The information provided in this software or documentation may include technical inaccuracies or typographical errors. The information in this software and documentation is subject to change at any time without notice.

NOTICES

This Informatica product (the "Software") includes certain drivers (the "DataDirect Drivers") from DataDirect Technologies, an operating company of Progress Software Corporation ("DataDirect") which are subject to the following terms and conditions:

1. THE DATADIRECT DRIVERS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.
2. IN NO EVENT WILL DATADIRECT OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO THE END-USER CUSTOMER FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING OUT OF THE USE OF THE ODBC DRIVERS, WHETHER OR NOT INFORMED OF THE POSSIBILITIES OF DAMAGES IN ADVANCE. THESE LIMITATIONS APPLY TO ALL CAUSES OF ACTION, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS.

The information in this documentation is subject to change without notice. If you find any problems in this documentation, report them to us at infa_documentation@informatica.com.

Informatica products are warranted according to the terms and conditions of the agreements under which they are provided. INFORMATICA PROVIDES THE INFORMATION IN THIS DOCUMENT "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

Publication Date: 2022-10-06

Table of Contents

Preface 4

Informatica Resources 4

- Informatica Documentation 4
- Informatica Intelligent Cloud Services web site 4
- Informatica Intelligent Cloud Services Communities 4
- Informatica Intelligent Cloud Services Marketplace 4
- Data Integration connector documentation 5
- Informatica Knowledge Base 5
- Informatica Intelligent Cloud Services Trust Center 5
- Informatica Global Customer Support 5

Chapter 1: Introduction to Google Cloud Storage Connector 6

Google Cloud Storage Connector assets 6

Google Cloud Storage Connector example 6

Administration of Google Cloud Storage Connector 7

Introduction to Google Cloud Storage 8

Chapter 2: Google Cloud Storage connections 11

Google Cloud Storage connection properties 11

Configuring the proxy settings on Windows 12

Configuring the proxy settings on Linux 13

Chapter 3: Synchronization tasks with Google Cloud Storage Connector 15

Google Cloud Storage sources in synchronization tasks 15

Google Cloud Storage targets in synchronization tasks 16

Troubleshooting a synchronization task 17

Chapter 4: Mappings and Mapping Tasks with Google Cloud Storage Connector 18

Google Cloud Storage sources in mappings 18

Google Cloud Storage targets in mappings 19

Troubleshooting a mapping task 21

Appendix A: Data type reference 22

Google Cloud Storage and transformation data types 22

Index 23

Preface

Use *Google Cloud Storage Connector* to learn how to read from or write to Google Cloud Storage by using Cloud Data Integration. Learn to create a connection, develop mappings, synchronization tasks, and run synchronization and mapping tasks in Cloud Data Integration.

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 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.

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

Informatica Intelligent Cloud Services web site

You can access the Informatica Intelligent Cloud Services web site at http://www.informatica.com/cloud. This site contains information about Informatica Cloud integration services.

Informatica Intelligent Cloud Services Communities

Use the Informatica Intelligent Cloud Services Community to discuss and resolve technical issues. You can also find technical tips, documentation updates, and answers to frequently asked questions.

Access the Informatica Intelligent Cloud Services Community at:

https://network.informatica.com/community/informatica-network/products/cloud-integration

Developers can learn more and share tips at the Cloud Developer community:

https://network.informatica.com/community/informatica-network/products/cloud-integration/cloud-developers

Informatica Intelligent Cloud Services Marketplace

Visit the Informatica Marketplace to try and buy Data Integration Connectors, templates, and mapplets:

https://marketplace.informatica.com/

Data Integration connector documentation

You can access documentation for Data Integration Connectors at the Documentation Portal. To explore the Documentation Portal, visit https://docs.informatica.com.

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 Intelligent Cloud Services Trust Center

The Informatica Intelligent Cloud Services Trust Center provides information about Informatica security policies and real-time system availability.

You can access the trust center at https://www.informatica.com/trust-center.html.

Subscribe to the Informatica Intelligent Cloud Services Trust Center to receive upgrade, maintenance, and incident notifications. The Informatica Intelligent Cloud Services Status page displays the production status of all the Informatica cloud products. All maintenance updates are posted to this page, and during an outage, it will have the most current information. To ensure you are notified of updates and outages, you can subscribe to receive updates for a single component or all Informatica Intelligent Cloud Services components. Subscribing to all components is the best way to be certain you never miss an update.

To subscribe, go to https://status.informatica.com/ and click **SUBSCRIBE TO UPDATES**. You can then choose to receive notifications sent as emails, SMS text messages, webhooks, RSS feeds, or any combination of the four.

Informatica Global Customer Support

You can contact a Customer Support Center by telephone or online.

For online support, click **Submit Support Request** in Informatica Intelligent Cloud Services. You can also use Online Support to log a case. Online Support requires a login. You can request a login at https://network.informatica.com/welcome.

The telephone numbers for Informatica Global Customer Support are available from the Informatica web site at https://www.informatica.com/services-and-training/support-services/contact-us.html.

CHAPTER 1

Introduction to Google Cloud Storage Connector

You can use Google Cloud Storage Connector to connect to Google Cloud Storage from Data Integration. Use Google Cloud Storage Connector to read data from or write data to Google Cloud Storage. You can use Google Cloud Storage objects as sources and targets in synchronization tasks, mapping tasks, and mappings.

You can use Google Cloud Storage Connector to read files that contain string and binary data. You can use Google Cloud Storage Connector to write to files that contain text, string, and binary data.

You can switch mappings to advanced mode to include transformations and functions that enable advanced functionality.

When you run a task or mapping, the Secure Agent uses the Google Cloud Storage API to perform the specified operation and reads data from or writes data to Google Cloud Storage buckets.

Google Cloud Storage Connector assets

Create assets to integrate data using Google Cloud Storage Connector.

You can insert data into a Google Cloud Storage target. You cannot perform update, upsert, or delete operations on a Google Cloud Storage target.

When you use Google Cloud Storage Connector, you can include the following Data Integration assets:

- Mapping
- Synchronization

For more information about configuring assets and transformations, see *Mappings*, *Transformations*, and *Tasks* in the Data Integration documentation.

Google Cloud Storage Connector example

You run the IT department of a major bank and are responsible for storing huge volumes of transaction files in a relational database. You want to store the data in another database to avoid data loss if the relational database fails.

You can use Google Cloud Storage Connector to upload huge volumes of transaction files to Google Cloud storage from any location and at any time. You can back up data in Google Cloud Storage for disaster recovery purposes and retrieve the data later, if needed.

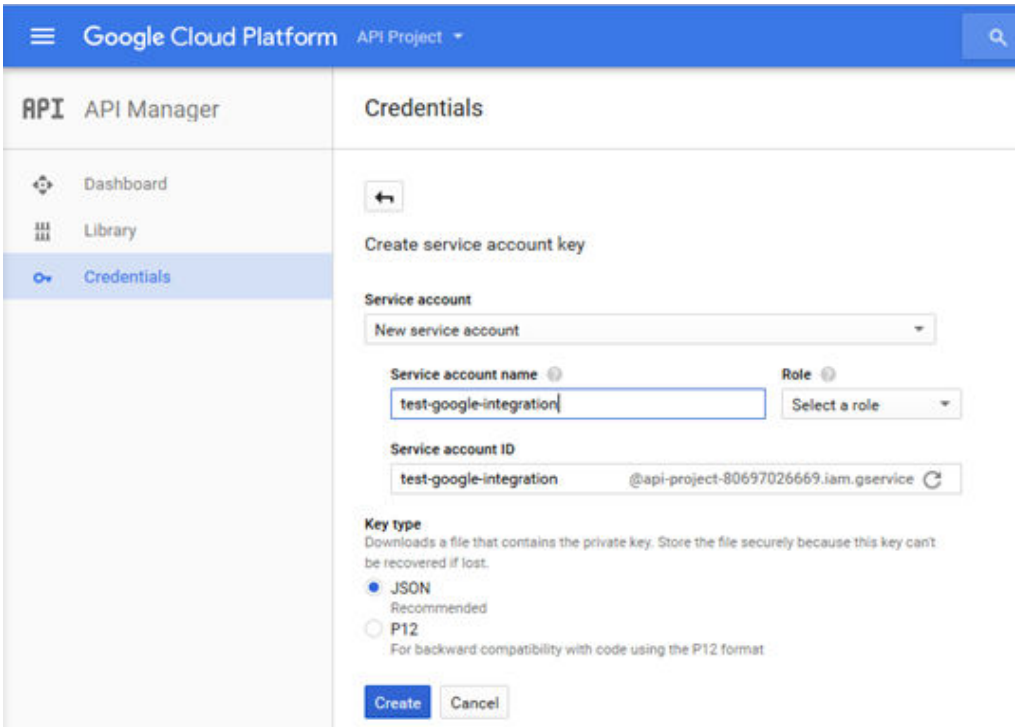
You can configure a synchronization task, mapping task, or mapping to write data to Google Cloud Storage.

Administration of Google Cloud Storage Connector

Before you use Google Cloud Storage Connector, you must complete the following prerequisite tasks:

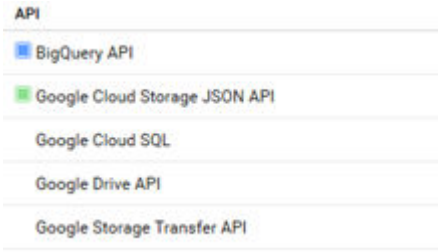
1. Create a Google account to access Google Cloud Storage.
2. On the **Credentials** page, navigate to the APIs and auth section, and create a service account. After you create the service account, you can download a JSON file that contains the project_id, client_email, and private_key values. You will need to enter these details when you create a Google Cloud Storage connection in Data Integration.

   The following image shows the **Credentials** page where you can create the service account and key:



3. On the **Dashboards** page of the Google API Console, https://console.developers.google.com/, enable the Google Cloud Storage JSON API. Google Cloud Storage Connector uses the Google API to integrate with Google Cloud Storage.

The following image shows the **Dashboard** page where you can enable the API:



4. Create a project, bucket, source file, and target file. You will need to enter the project_id, path, source file name, and target file name when you create tasks and mappings in Data Integration.
5. Verify that you have read and write access to the Google Cloud Storage bucket that contains the source file and target file.

Introduction to Google Cloud Storage

Google Cloud Storage is a web service that allows global storage and retrieval of large volumes of data at any time.

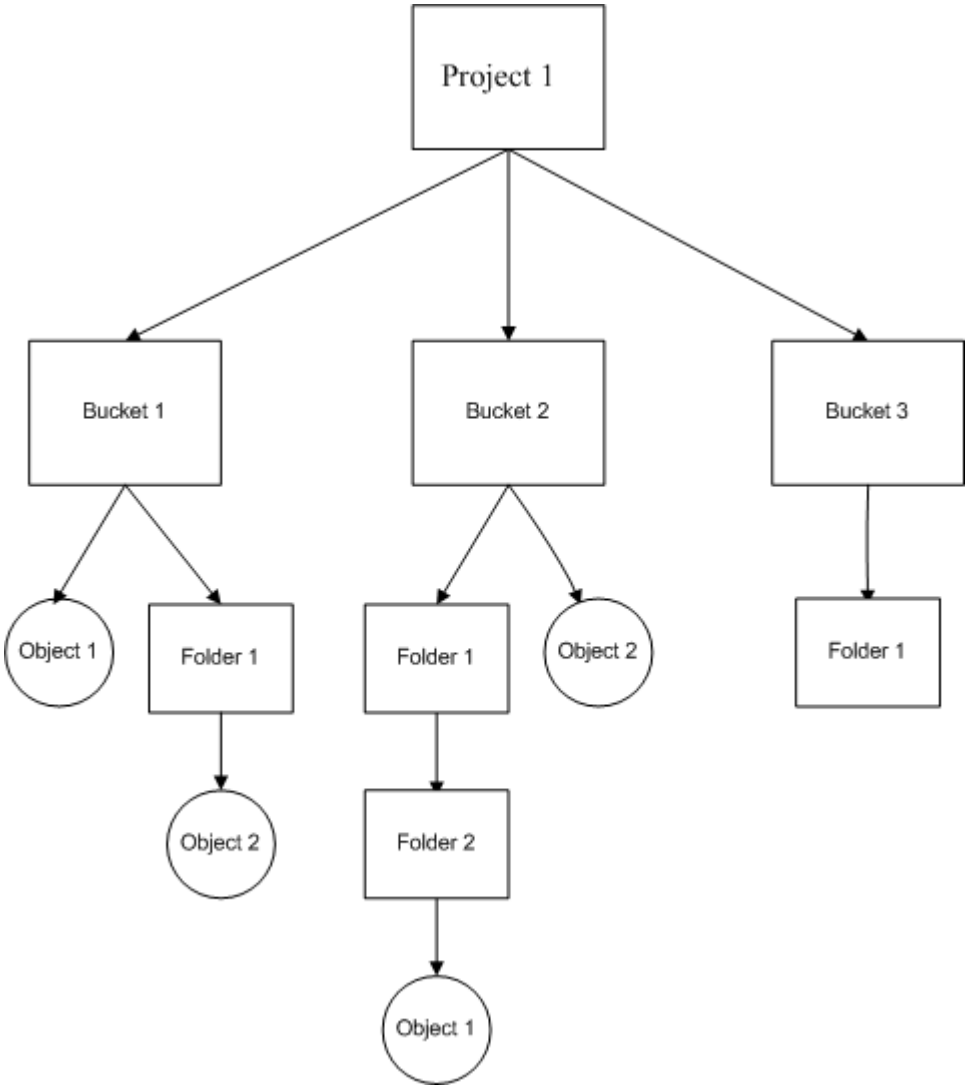
You can use Google Cloud Storage to stream multimedia, store custom data analytics pipelines, or distribute large data objects to users through direct download. You can write data to Google Cloud Storage for data backup. In the event of a database failure, you can read the data from Google Cloud Storage and restore it back to the database.

Google Cloud Storage offers different storage classes based on factors such as data availability, latency, and price.

Google Cloud Storage comprises the following components:

- Projects
- Buckets
- Objects

The following image shows how data can be organized in Google Cloud Storage:



You can use the following components to write to Google Cloud Storage:

Projects

In Google Cloud Storage, all resources are stored within a project. Project is a top-level container that stores billing details and user details. You can create multiple projects. A project has a unique project name, project ID, and project number.

Buckets

Each bucket acts like a container that stores data. You can use buckets to organize and access data. You can create more than one bucket but you cannot nest buckets.

You can create multiple folders within a bucket and you can also nest folders.

You can define access control lists to manage objects and buckets. An access control list consists of permission and scope entries. Permission defines the access to perform a read or write operation. Scope defines a user or a group who can perform the operation.

Objects

Objects comprise the data that you upload to Google Cloud Storage. You can create objects in a bucket. Objects consist of object data and object metadata components. The object data is a file that you store

in Google Cloud Storage. The object metadata is a collection of name-value pairs that describe object qualities.

CHAPTER 2

Google Cloud Storage connections

Create a Google Cloud Storage connection to connect to Google Cloud Storage and read data from or write data to Google Cloud Storage buckets. You can use Google Cloud Storage connections in synchronization tasks, mapping tasks, and mappings.

Google Cloud Storage connection properties

When you create a Google Cloud Storage connection, you must configure the connection properties.

The following table describes the Google Cloud Storage connection properties:

Property	Description
Runtime Environment	Runtime environment that contains the Secure Agent used to access Google Cloud Storage.
Project ID	Specifies the project_id value present in the JSON file that you download after you create a service account. If you have created multiple projects with the same service account, enter the ID of the project that contains the bucket that you want to connect to.
Service Account ID	Specifies the client_email value present in the JSON file that you download after you create a service account.
Service Account Key	Specifies the private_key value present in the JSON file that you download after you create a service account.
File Path	Path in Google Cloud Storage where you want to read or write data. You can either enter the bucket name or the bucket name and folder name. For example, enter `<bucket name>` or `<bucket name>/<folder name>`

Configuring the proxy settings on Windows

If your organization uses an outgoing proxy server to connect to the internet, the Secure Agent connects to Informatica Intelligent Cloud Services through the proxy server.
To configure the proxy server settings for the Secure Agent on a Windows machine, you must configure the proxy server settings through the Secure Agent Manager and the JVM options of the Secure Agent.

Contact your network administrator for the correct proxy settings.

1. Click **Start** > **All Programs** > **Informatica Cloud Secure Agent** > **Informatica Cloud Secure Agent** to launch the Secure Agent Manager.

   The Secure Agent Manager displays the Secure Agent status.
2. Click **Proxy** in the Secure Agent Manager page.
3. Click **Use a Proxy Server** to enter proxy server settings.
4. Configure the following proxy server details:

Field	Description
Proxy Host	Host name of the outgoing proxy server that the Secure Agent uses.
Proxy Port	Port number of the outgoing proxy server.
User Name	User name to connect to the outgoing proxy server.
Password	Password to connect to the outgoing proxy server.

5. Click **OK**.
6. Log in to Informatica Intelligent Cloud Services.
7. Open Administrator and select **Runtime Environments**.
8. Select the Secure Agent for which you want to configure a proxy server.
9. On the upper-right corner of the page, click **Edit**.
10. In the **System Configuration Details** section, select the **Type** as **DTM** for the Data Integration Service.
11. To use a proxy server, add the following parameters in any **JVMOption** field and specify appropriate values for each parameter:

Parameter	Description
-Dproxy.host=	Host name of the outgoing HTTPS proxy server.
-Dproxy.port=	Port number of the outgoing HTTPS proxy server.
-Dproxy.user=	User name for the HTTPS proxy server.
-Dproxy.password=	Password for the HTTPS proxy server.

Note: You must specify the parameter and the value for the parameter enclosed in single quotation marks.

For example,

```
JVMOption1='-Dproxy.host=INPQ8583WI29'
JVMOption2='-Dproxy.port=8081'
JVMOption3='-Dproxy.user=adminuser'
JVMOption4='-Dproxy.password=password'
```

Note: You can configure only five **JVMOption** fields in the **System Configuration Details** section. To configure the remaining parameters, you must add the **JVMOption** fields in the **Custom Configuration Details** section. In the **Custom Configuration Details** section, select the **Type** as **DTM** for the Data Integration Service, add the **JVMOption** fields, and specify the remaining parameters and appropriate values for each parameter.

12. Click **Save**.

    The Secure Agent restarts to apply the settings.

    Note: The session log does not log the proxy server details even if you have configured a proxy server.

Configuring the proxy settings on Linux

If your organization uses an outgoing proxy server to connect to the internet, the Secure Agent connects to Informatica Intelligent Cloud Services through the proxy server.
You can update the proxy server settings defined for the Secure Agent from the command line. To configure the proxy server settings for the Secure Agent on a Linux machine, you must update the `proxy.ini` file and configure the JVM options of the Secure Agent.

Contact your network administrator for the correct proxy settings.

1. Navigate to the following directory:

   ```
   <Secure Agent installation directory>/apps/agentcore/conf
   ```

2. To update the `proxy.ini` file, add the following parameters and specify appropriate values for each parameter:

   ```
   InfaAgent.ProxyHost=<proxy_server_hostname>
              InfaAgent.ProxyPort=<proxy_server_port>
              InfaAgent.ProxyUser=<user_name>
              InfaAgent.ProxyPassword=<password>
              InfaAgent.ProxyPasswordEncrypted=false
   ```

   For example,

   ```
   InfaAgent.ProxyHost=INW2PF0MT01V
              InfaAgent.ProxyPort=808
              InfaAgent.ProxyUser=user06
              InfaAgent.ProxyPassword=user06
              InfaAgent.ProxyPasswordEncrypted=false
   ```

3. Log in to Informatica Intelligent Cloud Services.
4. Open Administrator and select **Runtime Environments**.
5. Select the Secure Agent for which you want to configure a proxy server.
6. On the upper-right corner of the page, click **Edit**.
7. In the **System Configuration Details** section, select the **Type** as **DTM** for the Data Integration Service.

8. To use a proxy server, add the following parameters in any **JVMOption** field and specify appropriate values for each parameter:

Parameter	Description
-Dproxy.host=	Host name of the outgoing HTTPS proxy server.
-Dproxy.port=	Port number of the outgoing HTTPS proxy server.
-Dproxy.user=	User name for the HTTPS proxy server.
-Dproxy.password=	Password for the HTTPS proxy server.

Note: You must specify the parameter and the value for the parameter enclosed in single quotation marks.

For example,

```
JVMOption1='-Dproxy.host=INPQ8583WI29'
JVMOption2='-Dproxy.port=8081'
JVMOption3='-Dproxy.user=adminuser'
JVMOption4='-Dproxy.password=password'
```

Note: You can configure only five **JVMOption** fields in the **System Configuration Details** section. To configure the remaining parameters, you must add the **JVMOption** fields in the **Custom Configuration Details** section. In the **Custom Configuration Details** section, select the **Type** as **DTM** for the Data Integration Service, add the **JVMOption** fields, and specify the remaining parameters and appropriate values for each parameter.

9. Click **Save**.

   The Secure Agent restarts to apply the settings.

   Note: The session log does not log the proxy server details even if you have configured a proxy server.

CHAPTER 3

Synchronization tasks with Google Cloud Storage Connector

Use the Synchronization task to synchronize data between a source and target.

You can configure a synchronization task using the Synchronization Task wizard.

When you create a task, you can associate it with a schedule to run it at specified times or on regular intervals. Or, you can run it manually. You can monitor tasks that are currently running in the activity monitor and view logs about completed tasks in the activity log.

Google Cloud Storage sources in synchronization tasks

You can use a single object in a synchronization task.

You can configure the Google Cloud Storage source properties on the **Source** page of the Synchronization Task wizard.

The following table describes the Google Cloud Storage source properties:

Property	Description
Connection	Name of the Google Cloud Storage source connection.
Source Type	Type of the Google Cloud Storage source object available. You can read data to a single Google Cloud Storage source object.
Source Object	Name of the source object.
Display technical names instead of labels	Displays technical names instead of business names.
Display source fields in alphabetical order	Displays source fields in alphabetical order. By default, fields appear in the order returned by the source system.

Note: You can preview files that contain text. You cannot preview files that contain string data and binary data.

Google Cloud Storage targets in synchronization tasks

You can use a single Google Cloud Storage object as a target in a synchronization task.

The following table describes the Google Cloud Storage target properties:

Property	Description
Connection	Name of the Google Cloud Storage target connection.
Target Object	Name of the Google Cloud Storage target object.
Child Object	This attribute is not applicable for Google Cloud Storage Connector.
Display target fields in alphabetical order	Displays target fields in alphabetical order. By default, fields appear in the order returned by the target system.

The following table describes the advanced properties for Google Cloud Storage targets:

Property	Description
Google Cloud Storage path	Overrides the Google Cloud Storage path that you specified in the connection. Use the following format: `gs://<bucket name>` or `gs://<bucket name>/<folder name>` This property is required in the following situations: - You create a target at run time. - The source is not a flat file.
Target file name	Optional. Overrides the Google Cloud Storage target object name.
Writer header	Determines whether the Secure Agent must write the header to the target file.
Number of Threads for Uploading Data to the Target	Specifies the number of threads that the Secure Agent must create to write data to the Google Cloud Storage target. You can configure multi-threading to write data to the Google Cloud Storage target in parallel and improve the performance. Set the number of threads based on your system configuration. You might need to test different settings for optimal performance. If you configure more than one thread, you must increase the Java heap size in the **JVMOption3** field for DTM under the **System Configuration Details** section of the Secure Agent. You must then restart the Secure Agent for the changes to take effect. Default is 1.
Order Target Data	Specifies whether the Secure Agent must retain the order of text data when it writes to the Google Cloud Storage target. You can retain the order of text data if you configure more than one thread to write text data to a Google Cloud Storage target. **Note:** This property is not applicable for binary and string data types. For example, if you specify five threads to write data to the target and select this option, the Secure Agent writes data to a local file and then splits data across multiple local files. The Secure Agent then writes data from the local files to the Google Cloud Storage target. If you do not select this option, the Secure Agent writes data into five local files, writes data to the target, and then merges the file in the Google Cloud Storage target. Default is selected.

Property	Description
Success File Directory	This attribute is not applicable for Google Cloud Storage Connector.
Error File Directory	This attribute is not applicable for Google Cloud Storage Connector.

Note: When you run a synchronization task and configure multiple threads to write data to a Google Cloud Storage target, the Secure Agent appends the carriage return (\r) or newline character (\n) and increases the length of the file.

Troubleshooting a synchronization task

When you create a Google Cloud Storage target at runtime and then edit the synchronization task, the following error message appears:

```
The synchronization task was updated by another user while you were completing your edits.
```

Workaround: To avoid overwriting the changes made by the other user, click the **Cancel** button, and then edit this task.

CHAPTER 4

Mappings and Mapping Tasks with Google Cloud Storage Connector

Use the Data Integration Mapping Designer to create a mapping. When you create a mapping, you can configure Google Cloud Storage object to represent a source and a target.

Describe the flow of data from the source and target along with the required transformations before the Secure Agent reads data from and writes data to the Google Cloud Storage source. In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality. Use the Mapping Task wizard to create a mapping task and select the mapping that you configured. The mapping task processes data based on the data flow logic you define in the mapping.

Google Cloud Storage sources in mappings

To read data from a Google Cloud Storage bucket, configure a Google Cloud Storage object as the Source transformation in a mapping.

Specify the name and description of the Google Cloud Storage source. Configure the source and advanced properties for the source object.

The following table describes the properties that you can configure for a Google Cloud Storage source:

Property	Description
Connection	Name of the active source connection.
Source Type	Type of the Google Cloud Storage source object available. You can read data to a single Google Cloud Storage source object.
Object	Name of the source object for the mapping. You can specify a custom query for a source object. **Note:** Ensure that the column names in the source object do not begin with special characters.

Property	Description
Filter	This attribute is not applicable for Google Cloud Storage Connector.
Sort	This attribute is not applicable for Google Cloud Storage Connector.

You can set the tracing level in the advanced properties session to determine the amount of details that logs contain.

The following table describes the tracing levels that you can configure:

Tracing Level	Description
Terse	The Secure Agent logs initialization information, error messages, and notification of rejected data.
Normal	The Secure Agent logs initialization and status information, errors encountered, and skipped rows due to transformation row errors. Summarizes session results, but not at the level of individual rows.
Verbose Initialization	In addition to normal tracing, the Secure Agent logs additional initialization details, names of index and data files used, and detailed transformation statistics.
Verbose Data	In addition to verbose initialization tracing, the Secure Agent logs each row that passes into the mapping. Also notes where the Secure Agent truncates string data to fit the precision of a column and provides detailed transformation statistics. When you configure the tracing level to verbose data, the Secure Agent writes row data for all rows in a block when it processes a transformation.

Note: If you set the logging option to verbose and run a task to read files that contain data of the String data type, the log does not show the detailed information.

Google Cloud Storage targets in mappings

To write data to a Google Cloud Storage target, configure a Google Cloud Storage object as the Target transformation in a mapping.

Specify the name and description of the Google Cloud Storage target. You can configure the target and advanced properties for the target object.

The following table describes the properties that you can configure for a Google Cloud Storage target:

Property	Description
Connection	Name of the Google Cloud Storage target connection.
Target Type	Type of the Google Cloud Storage target objects available. You can write data to a single or parameterize Google Cloud Storage target object. You cannot write data to multiple objects.
Object	Name of the Google Cloud Storage target object. **Note:** Ensure that the column names in the target object do not begin with special characters.

Property	Description
Create New at Runtime	Creates a target. Enter a name and path for the target object and select the source fields that you want to use. By default, all source fields are used. The target name can contain alphanumeric characters. You can use the following special characters in the file name: `., _, @, $, %` If you specify the path, the Secure Agent creates the target object in the path you specify in this property. The Secure Agent creates the target object in the following path: `<bucket_name>/<path_name>/<target_object_name>` You cannot parameterize the target at runtime. **Note:** If you specify a delimiter other than comma, the target file is generated with comma as the delimiter.
Operation	Select insert as the target operation. You cannot perform update, upsert, or delete operations on a Google Cloud Storage object.

The following table describes the advanced properties that you can configure for a Google Cloud Storage target:

Property	Description
Google cloud storage path	Overrides the Google Cloud Storage path that you specified in the connection. This property is required when the source is not a flat file. Use the following format: `gs://<bucket name>` or `gs://<bucket name>/<folder name>`
Target file name	Optional. Overrides the Google Cloud Storage target object name.
Writer header	Determines whether the Secure Agent must write the header to the target file.
Number of Threads for Uploading Data to the Target	Specifies the number of threads that the Secure Agent must create to write data to the Google Cloud Storage target. You can configure multi-threading to write data to the Google Cloud Storage target in parallel and improve the performance. Set the number of threads based on your system configuration. You might need to test different settings for optimal performance. If you configure more than one thread, you must increase the Java heap size in the **JVMOption3** field for DTM under the **System Configuration Details** section of the Secure Agent. You must then restart the Secure Agent for the changes to take effect. Default is 1.
Order Target Data	Specifies whether the Secure Agent must retain the order of text data when it writes to the Google Cloud Storage target. You can retain the order of text data if you configure more than one thread to write text data to a Google Cloud Storage target. **Note:** This property is not applicable for binary and string data types. For example, if you specify five threads to write data to the target and select this option, the Secure Agent writes data to a local file and then splits data across multiple local files. The Secure Agent then writes data from the local files to the Google Cloud Storage target. If you do not select this option, the Secure Agent writes data into five local files, writes data to the target, and then merges the file in the Google Cloud Storage target. Default is selected.
Success File Directory	This attribute is not applicable for Google Cloud Storage Connector.

Property	Description
Error File Directory	This attribute is not applicable for Google Cloud Storage Connector.
Forward Rejected Rows	This attribute is not applicable for Google Cloud Storage Connector.

Troubleshooting a mapping task

When you use a task flow to run a mapping task to read data from Google Cloud Storage and write data to any target, the following error message appears in the job details even though the task runs successfully:

```
ERROR Google Storage WriterDeinitialization Succeed.
```

Workaround: Ignore the error message.

APPENDIX A

Data type reference

Data Integration uses the following data types in mappings, synchronization tasks, and mapping tasks with Google Cloud Storage:

Google Cloud Storage native data types

Google Cloud Storage data types appear in the **Fields** tab for Source and Target transformations when you choose to edit metadata for the fields.

Transformation data types

Set of data types that appear in the remaining transformations. They are internal data types based on ANSI SQL-92 generic data types, which Data Integration uses to move data across platforms. Transformation data types appear in all remaining transformations in a mapping, synchronization task, or mapping task.

When Data Integration reads source data, it converts the native data types to the comparable transformation data types before transforming the data. When Data Integration writes to a target, it converts the transformation data types to the comparable native data types.

Google Cloud Storage and transformation data types

The following table describes the data types that Data Integration supports for Google Cloud Storage sources and targets:

Google Cloud Storage Data Type	Transformation Data Type	Range and Description for the Transformation Data Type
BYTE	Byte	Precision 65535
STRING	String	1 to 104,857,600 characters. Default precision is 256. You can increase the value up to 104857600 characters.

INDEX

C

Cloud Application Integration community
  URL 4
Cloud Developer community
  URL 4
connections
  Google Cloud Storage 11

D

Data Integration community
  URL 4
data type reference
  overview 22

G

Google Cloud Storage
  sources properties 15
  targets properties 16
  access control lists 8
  components 8
  connection properties 11
  data types 22
  features 8
  introduction 8
  native data types 22
Google Cloud Storage components
  buckets 8
  objects 8
  projects 8
Google Cloud Storage connections
  overview 11
Google Cloud Storage Connector
  administration 7
  example 6
  overview 6
  supported task and object types 6
Google Cloud Storage sources
  Synchronization task 15
Google Cloud Storage targets
  Synchronization task 16

I

Informatica Global Customer Support
  contact information 5
Informatica Intelligent Cloud Services
  web site 4

L

Linux
  configuring proxy settings 13

M

maintenance outages 5
mapping
  Google Cloud Storage sources 18
  Google Cloud Storage targets 19
mapping advanced properties
  Google Cloud Storage source 18
  Google Cloud Storage target 19
mapping properties
  Google Cloud Storage source 18
  Google Cloud Storage targets 19
mapping tasks
  overview 18

O

ODBC
  Synchronization task 15

P

proxy settings
  configuring on Linux 13
  configuring on Windows 12

S

status
  Informatica Intelligent Cloud Services 5
system status 5

T

transformation
  data types 22
troubleshooting
  mapping task 21
  synchronization task 17
trust site
  description 5

U

upgrade notifications 5

W
web site 4
Windows
configuring proxy settings 12