



Informatica® Data Integration - Free & PayGo

# Microsoft Azure Cosmos DB SQL API Connector

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# Preface

Use *Microsoft Azure Cosmos DB SQL API Connector* to learn how to read from Microsoft Azure Cosmos DB SQL API. Learn to create a connection, develop and run mappings, mapping tasks, and data transfer tasks in Data Integration.

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## CHAPTER 1

# Introduction to Microsoft Azure Cosmos DB SQL API Connector

You can use Microsoft Azure Cosmos DB SQL API Connector to securely read data from Microsoft Azure Cosmos DB SQL API .

Use Microsoft Azure Cosmos DB SQL API Connector to read JSON documents from a collection in the Cosmos DB database.

You can migrate data from Cosmos DB to a data warehouse for reporting. For example, your organization uses a business intelligence tool that does not support Cosmos DB. You must migrate the data from Cosmos DB to a data warehouse so that the business intelligence tool can use the data to generate reports.

## Microsoft Azure Cosmos DB SQL API Connector assets

Create assets in Data Integration to integrate data using Microsoft Azure Cosmos DB SQL API Connector.

When you use Microsoft Azure Cosmos DB SQL API Connector, you can include the following Data Integration assets:

- Data transfer task
- Mapping
- Mapping task

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

## Administration of Microsoft Azure Cosmos DB SQL API Connector

Before you create a connection and run assets with Microsoft Azure Cosmos DB SQL API Connector, complete the prerequisites.

Get the Cosmos DB URI and key values from the Keys tab under the Settings section of your Microsoft Azure Cosmos DB SQL API account.

## CHAPTER 2

# Connections for Microsoft Azure Cosmos DB SQL API

Create a Microsoft Azure Cosmos DB SQL API connection to securely read data from Microsoft Azure Cosmos DB SQL API.

You can use a Microsoft Azure Cosmos DB SQL API connection to specify sources in mappings and mapping tasks.

When you select a Microsoft Azure Cosmos DB SQL API connection and a source object in a mapping, the first document is read and a schema is created from it.

## Microsoft Azure Cosmos DB SQL API connection properties

When you set up a Microsoft Azure Cosmos DB SQL API connection, configure the connection properties.

The following table describes the Microsoft Azure Cosmos DB SQL API connection properties:

Connection property	Description
Connection Name	Name of the connection. Each connection name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: _ . + -, Maximum length is 255 characters.
Description	Description of the connection. Maximum length is 4000 characters.
Type	The Microsoft Azure Cosmos DB SQL API connection type.
Runtime Environment	The name of the runtime environment where you want to run the tasks. Specify a Secure Agent or a Hosted Agent.
Cosmos DB URI	The URI of Microsoft Azure Cosmos DB account.

Connection property	Description
Key	The primary or secondary key that provides you with the complete administrative access to the resources within the Microsoft Azure Cosmos DB account.
Database	Name of the database that contains the collections from which you want to read JSON documents.



## CHAPTER 3

# Mappings for Microsoft Azure Cosmos DB SQL API

When you configure a mapping, you describe the flow of data from the source to the target.

A mapping defines reusable data flow logic that you can use in mapping tasks.

When you create a mapping, you define the Source transformation to represent a Microsoft Azure Cosmos DB SQL API object. Use the Mapping Designer in Data Integration to add the Source or Target transformations in the mapping canvas and configure the Microsoft Azure Cosmos DB SQL API source properties.

You can use Monitor to monitor the jobs.

## Microsoft Azure Cosmos DB SQL API source properties

To read data from Microsoft Azure Cosmos DB SQL API, configure a Microsoft Azure Cosmos DB SQL API object as the Source transformation in a mapping.

The following table describes the Microsoft Azure Cosmos DB SQL API source properties that you can configure in a Source transformation:

Property	Description
Connection	Name of the source connection. You can select an existing connection, create a new connection, or define parameter values for the source connection property. If you want to overwrite the source connection properties at runtime, select the <b>Allow parameter to be overridden at run time</b> option. Specify the parameter file directory and name in the advanced session properties.
Source Type	Type of source object. Select <b>Single Object</b> or <b>Parameter</b> .
Object	Name of the source object.

Property	Description
Parameter	<p>The parameter that holds the value of the object that you want to define at run-time.</p> <p>Select an existing parameter for the source object, or click <b>New Parameter</b> to define a new parameter for the source object.</p> <p>The <b>Parameter</b> property appears only if you select parameter as the source type.</p> <p>If you want to overwrite the parameter at runtime, select the <b>Allow parameter to be overridden at run time</b> option when you create a parameter. When the task runs, the agent uses the parameters from the file that you specify in the advanced session properties.</p>
Formatting Options	<p>Mandatory. Microsoft Azure Cosmos DB format options.</p> <p>Select one of the following formatting options:</p> <ul style="list-style-type: none"> <li>- None. To read multilevel-hierarchical data in the string format.</li> <li>- Json. To read or write JSON documents that have one level of hierarchy.</li> </ul> <p>Default is None.</p>

The following table describes the advanced properties that you can configure in a Source transformation:

Property	Description
Throughput	<p>A positive integer and a multiple of 100. Expressed in RUs (Request Units) per second.</p> <p>If you specify -1, the throughput is not altered during the read operation.</p> <p>400 is the minimum throughput from Cosmos DB.</p> <p>Default is -1.</p>
Partition Key	<p>Mandatory. Value for the partition field key. You can add more than one values to the field.</p> <p>You can specify the following values:</p> <ul style="list-style-type: none"> <li>- &lt;All&gt;. Reads data from all partitions.</li> <li>- Field name. Reads data from the field name partition. For example, you can read data from a partition named on the City field, Boston. You can specify comma-separated multiple field names.</li> <li>- &lt;null&gt;. Reads data from the null partition.</li> </ul> <p>Default is &lt;All&gt;.</p>
Page Size	Number of documents to read per request. Default is 50.
Filter Query	<p>A case-sensitive filter query with conditional and logical operators to filter the source data.</p> <p>Use the following syntax:</p> <pre>&lt;objectName&gt;.&lt;columnName&gt;="conditionValue"</pre> <p>For example, Address.City="Boston"</p>
Tracing Level	Not applicable.

## Parameterization

You can parameterize the connection, objects, and the advanced runtime properties in mappings.

Consider the following rules and guidelines when you use parameterization:

- You cannot parameterize the field mapping.

- When you use input parameters, specify the parameter name in the following format:
  - Format in a mapping task: \$name\$
  - Format in a parameter file: \$name
- When you use in-out parameters, specify the parameter name in the following format in a mapping task or a parameter file: \$\$name

## Edit metadata in a source and target

You can edit field data types to customize the precision and data types of fields. You can edit the field metadata in a Source or Target transformation to change simple data types and precision.

To edit metadata, use the **Edit Metadata** option for the source and target fields on the **Fields** tab of the **Properties** panel.

### Rules and guidelines

- When you read and write values of integer, double, bigint, and boolean data types in a mapping, you cannot edit the precision. You can edit the precision only when you create a mapping task.
- When you read and write values of string data type in a mapping and edit the precision, the mapping does not consider the change in the precision. You can edit the precision when you create a mapping task.

## Rules and guidelines for mappings and mapping tasks

Consider the following rules and guidelines for mappings and mapping tasks:

- If you click **Formatting Options**, the type is selected as *None* by default. To parse JSON documents in the source collection, select **Json** instead of **None**.
- When you select a connection and a source object, the first document is read and a schema is created from it. The schema chosen is applied for all the documents and the additional columns in the documents are ignored.
- If the value of the partition key is null in the source data, specify the value of the partition key as null within angular brackets in the advanced source properties.  
For example, <null>.
- When you read from Microsoft Azure Cosmos DB SQL API, ensure that the collection contains at least one document to infer the schema.
- When you update or delete data in a partitioned collection in a Microsoft Azure Cosmos DB SQL API target and use the bulk API, ensure that the source data has more than one row.

## CHAPTER 4

# Data type reference

Data Integration uses the following data types in Microsoft Azure Cosmos DB SQL API mappings and mapping tasks:

- Microsoft Azure Cosmos DB SQL API native data types appear in the Source transformation when you choose to edit metadata for the fields.
- Transformation data types. Set of data types that appear in the transformations. These are internal data types based on ANSI SQL-92 generic data types, which the Secure Agent uses to move data across platforms. They appear in all transformations in a mapping.

When the Secure Agent reads source data, it converts the native data types to the comparable transformation data types before transforming the data.

## Microsoft Azure Cosmos DB SQL API and transformation data types

The following table compares the JSON data type to the transformation data type:

JSON Data Type	Transformation Data Type	Range and Description
array	array	The size of a document must be less than or equal to 4 MB.
boolean	integer	The default transformation type for boolean is integer. You can specify string data type with values of True and False. True is equivalent to the integer 1 and False is equivalent to the integer 0.
Number (double)	double	-1.79769313486231570E+308 to +1.79769313486231570E+308. Precision 15.
Number (float)	double	-1.79769313486231570E+308 to +1.79769313486231570E+308. Precision 15.
Number (int)	integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0

JSON Data Type	Transformation Data Type	Range and Description
Number (long)	bigint	-9,223,372,036,854,775,000 to 9,223,372,036,854,775,000. Precision 19, scale 0.
string	string	1 to 104,857,600 characters.
struct	struct	The size of a document must be less than or equal to 4 MB.

## Data type parsing for Microsoft Azure Cosmos DB SQL API

When you read from Microsoft Azure Cosmos DB SQL API, Data Integration parses data based on the data types defined in the schema. If the data values do not match the data types defined in the schema, Data Integration rejects the document.

The following table lists the data types allowed at run time for the data types specified in the schema:

Data Type in Schema	Allowed Run-time Data Type
Integer	Short, Integer
BigInt or Long	Short, Integer, Long (maximum precision 19)
Float	Short, Integer, Long, Float
Double	Short, Integer, Long, Float, Double
Decimal (maximum precision 28)	Short, Integer, Long, Float, Double, Long
String	String

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