



Azure Cosmos DB Adapter for SAP Integration Suite

Version 1.0.3 – February 2026

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1 Introduction

1.1 Objective

This is the official guide for the Azure Cosmos DB Adapter for SAP Integration Suite. This guide covers all relevant information for integration developers to start working with the Azure Cosmos DB adapter. Read this guide carefully before using the Adapter.

1.2 Coding Samples

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules of certain coding. The correctness and completeness of the Code given herein are not guaranteed.

1.3 Internet Hyperlinks

The documentation may contain hyperlinks to the Internet. These hyperlinks are intended to serve as a hint about where to find related information. The availability and the correctness of this related information or the ability of this information to serve a particular purpose are not warranted.

1.4 Overview

Azure Cosmos database is a platform as a service and a cloud-based NoSQL database by Microsoft Azure. It is a fully managed, globally distributed JSON-based database that supports high-level horizontal scaling, replication, and partitioning.

The Azure Cosmos DB lets you use the API of your choice to connect and store data. In Azure Cosmos DB you can provision throughput on the Database and the Container/Collection level too. The Azure Cosmos DB adapter can help you exchange the data between Azure Cosmos DB and other systems.


1.5 Features

- Provides the ability to interact with entities such as **Database**, **Container**, and **Document**.
- Supports standard **CRUD** (Create, Read, Update, and Delete) operations in Azure Cosmos DB.
- Supports operations such as **list**, **query**, and **replace** on various entities in Azure Cosmos DB.
- Efficiently handles large sets of documents with **bulk** operation capabilities.
- Supports **multiple API versions** of Azure Cosmos DB.
- Offers a range of authentication control options from full access to resource-based access using **Master Key Token** and **Resource Token**.
- Uses **dynamic values** and parameters to customize integration flows seamlessly with SAP Integration Suite headers and properties.

2 Installation and Configuration

This section describes the prerequisites and procedure to install the Azure Cosmos DB adapter.


2.1 Prerequisites

 The Azure Cosmos DB adapter is available as part of your Standard license for SAP Integration Suite. For more information, see [SAP Note](#).

Before you start working with the adapter, you must deploy it to your SAP Integration Suite tenant.

2.2 Procedure

You can deploy the adapter using the following methods:

 The following installation procedure is compatible with Apache Camel 2, Apache Camel 3, and Edge Integration Cell (EIC) platform.

2.2.1 Adapter Installation by creating a New Integration Flow



The Azure Cosmos DB adapter is available for selection in the receiver adapter list and can be deployed in the **Design** tab directly as you use it in an Integration flow.

Purpose

To install an adapter for use in your Integration flow.

Procedure

Go to **Design** workspace and select the integration package where you want to create a new Integration flow.

1. Click **Edit** to make the package editable.
2. Go to the **Artifacts** tab. Click **Add** and select **Integration Flow**.
3. Enter **Name** and **ID** for your flow. Additionally, select **Runtime Profile** from the drop-down and choose **Sender** and **Receiver** systems from the list . Finally, click **Add** to create the integration flow.
4. Go to the newly created integration flow and click **Edit** to make it editable.
5. In the integration flow, click **End** to add a **Connector**  between the **End** and the **Receiver Box**.

A drop-down with the available adapters appears. The **Azure Cosmos DB** adapter should show up in the list.

6. Select the **Azure Cosmos DB** adapter from the list. The adapter is now imported which *triggers* an adapter deployment. Once Azure Cosmos DB Adapter is deployed, a success message is displayed.

After the above steps are done, the Azure Cosmos DB Adapter is successfully deployed in your Design workspace of the SAP Integration Suite tenant.

2.2.2 Adapter Installation without Creating a New Integration Flow



The following procedure explains how the Azure Cosmos DB adapter is migrated from the Discover workspace to the Design workspace of the SAP Integration tenant.

This method is useful for scenarios where integration flow packages are migrated from development to a higher environment such as Production.

The Azure Cosmos DB adapter can be imported into the Design workspace without creating an integration flow. Use the Transport Management Service (TMS) to import/transport the Azure Cosmos DB adapter to a higher environment. Alternatively, If the TMS is not available in the landscape, the adapter package can be imported to the Design workspace by copying it from the Discover workspace.

Purpose

To copy the integration package from the Discover workspace and import the Azure Cosmos DB adapter to the Design workspace, follow these steps:

Procedure

1. Go to **Discover** workspace.
2. In the search box, search for **AzureCosmosDB adapter for SAP Integration Suite** package.
3. Select the package and click **Copy**. This copies the package from the Discover workspace to the Design workspace.
4. Go to Design workspace and select the copied **AzureCosmosDB adapter for SAP Integration Suite** package.
5. In the **Actions** tab of the selected package, click **Deploy**. This completes the adapter deployment to the Design workspace.

After the adapter deployment is complete, you can check the status in the **Monitor** section.

Purpose

To check the status of the deployed adapter.

Procedure

1. Under the **Monitor** tab, click **Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Integration Content** section and click **All**. This opens **Integration Content** page with a list of all the deployed adapters.
3. Here, you can check and confirm the deployment status of your adapter.

The screenshot displays the 'Integration Content (577)' management page. On the left, a search bar contains 'AzureCosmosDB' and a table lists the adapter with the name 'AzureCosmosDB' and status 'Started'. The main panel shows the details for 'AzureCosmosDB', including deployment time (Nov 21, 2024, 14:09:32), version (1.0.0), and a success message: 'The Integration Adapter is deployed successfully.' Action buttons for 'Undeploy' and 'Download' are visible in the top right.

Name	Status
AzureCosmosDB	Started

AzureCosmosDB Undeploy Download

Deployed On: Nov 21, 2024, 14:09:32 ID: [REDACTED]
Deployed By: [REDACTED] Version: 1.0.0
Package: [REDACTED]

Status Details

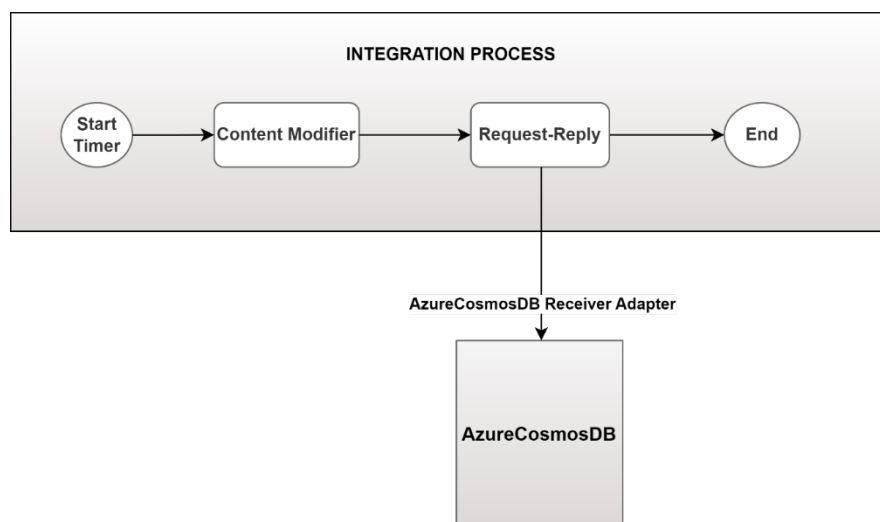
The Integration Adapter is deployed successfully.

3 Getting Started: Azure Cosmos DB Adapter

This section explains how to configure the Azure Cosmos DB adapter for SAP Integration Suite. You can find information about adapter architecture, application configuration, authentication, and supported versions for Azure Cosmos DB Adapter.

3.1 Architecture Overview

The Azure Cosmos DB adapter is designed to function as a receiver adapter. In such a scenario where the Azure Cosmos DB Adapter is used as a receiver adapter, SAP Integration Suite acts as the initiator of the calls.



3.2 Application Configuration

You can connect to Azure Cosmos DB via the Azure Cosmos DB Adapter using your user credentials. Before you begin, the following links can be helpful to set up your Azure Cosmos DB application.

- To create an Azure Cosmos DB Account, see [Create an Azure Cosmos DB account](#).
- For an introduction to authentication in Azure CosmosDB, see [Access control in Azure Cosmos DB](#).

3.3 Authentication

This section details the authentication mechanism supported by the Azure Cosmos DB Adapter in SAP Integration Suite. You can find a Master Key in the **Keys** section of the account, or you can have a **Resource Token** for a user.

Both authentication methods require a Secure Parameter security artifact to be created. For more information, see [3.3.1 Creating Secure Parameter in Security Material](#).

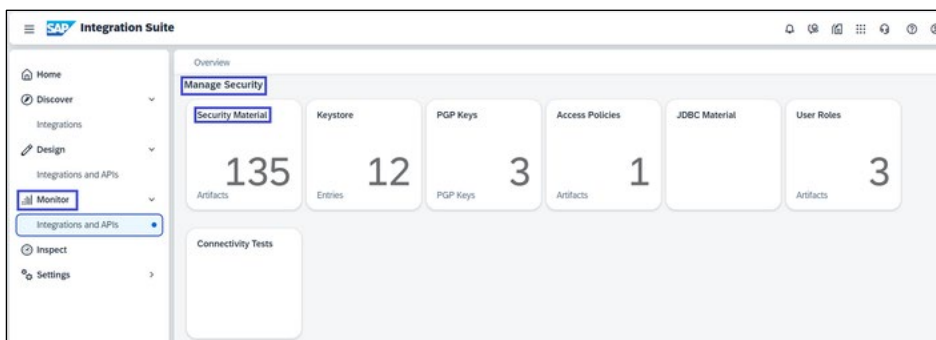
3.3.1 Creating Secure Parameter in Security Material

Purpose

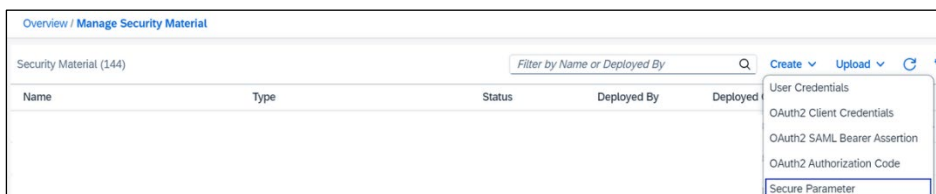
To create credentials in Security Material for Secure Parameter.

Procedure

1. In SAP Integration Suite, navigate to **Monitor > Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Security** section and click **Security Material**.



3. On **Manage Security Material** page, click **Create** to select **Secure Parameter** from the dropdown.



4. In the **Create Secure Parameter** popup, provide the below details.

Parameter	Description
Name	Specify the name of the security artifact. The artifact name is used as an alias for the confidential data.

Parameter	Description
Description	Enter a description for the artifact (optional).
Secure Parameter	Enter the confidential value of the attribute. The permissible length of the secure parameter for Cloud Foundry is a maximum of 4096 characters.
Repeat Secure Parameter	Repeat the confidential value of the attribute.

5. Click **Deploy** to complete the process.

When you refresh the **Manage Security Material** page, the new artifact is displayed (with Type **Secure Parameter**) in the artifact table.

3.4 Supported Versions

The supported API versions are listed in the table below.

- 2018-12-31
- 2018-09-17
- 2018-08-31
- 2018-06-18
- 2017-11-15
- 2017-05-03
- 2017-02-22
- 2017-01-19
- 2016-07-11
- 2015-12-16
- 2015-08-06
- 2015-06-03
- 2015-04-08
- 2014-08-21



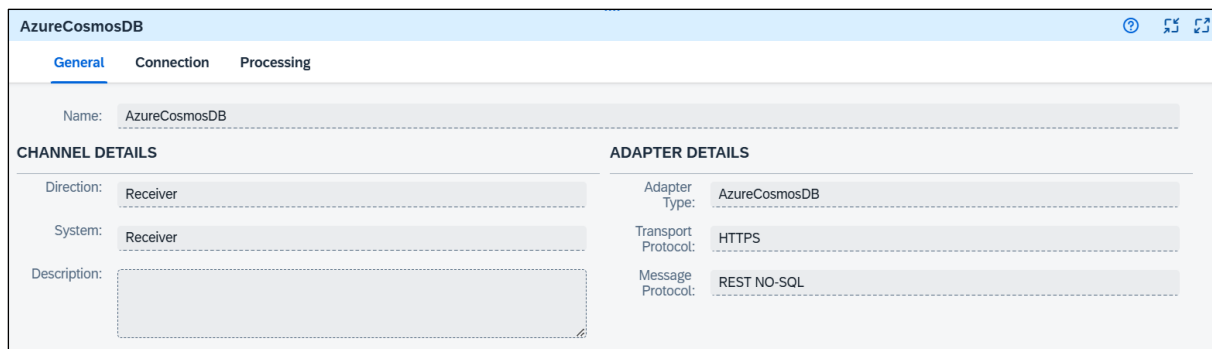
The version field is editable and can be updated to use the latest API version available in Azure Cosmos DB.

4 Azure Cosmos DB Adapter Configuration

In this section, you will learn how to configure the Azure Cosmos DB receiver adapter. On selecting the Azure Cosmos DB adapter from the list of adapters, you must configure the **General**, **Connection**, and **Processing** tabs.

4.1 General

The General tab provides an overview of basic adapter information including **Channel** and **Adapter** details.



Only the Name and Description fields are editable.

Parameter	Description
Name	Name of the adapter integration flow
Description	Description of the adapter

4.2 Connection

The Connection tab contains connection and authentication parameters for Azure Cosmos DB.

The Security artifact created in the previous section ([Creating Secure Parameter in Security Material](#)) should be used in the **Connection tab** of the Adapter as shown in the figure below.

AzureCosmosDB Externalize ⓘ □

General **Connection** Processing

CONNECTION DETAILS

Address: *

Authentication: Master Key Token ▾




Key Alias: *

Reuse Connection:

Connection Timeout (in ms): 60000

Response Timeout (in ms): 60000



The connection tab contains the following fields:





Parameter	Description
Address	Specify the address with port of the host. Example: <code>https://{databaseaccount}.documents.azure.com:443/</code>
Authentication	Select the type of key for connecting to the Azure Cosmos DB account. <ul style="list-style-type: none"> • Master Key Token • Resource Token
Key Alias	Specify the Master key alias for connecting to the Azure Cosmos DB account.
Token Alias	Specify the Resource token alias for connecting to the Azure Cosmos DB account.
Reuse Connection	Enable this property to reuse the connection.  This field is applicable to a scenario when Processing Mode is set to Single .
Connection Timeout (in ms)	Specify the connection timeout in milliseconds. The timeout controls the maximum waiting time for the connection to Cosmos DB.  This field is applicable to a scenario when Processing Mode is set to Single .
Response Timeout (in ms)	Specify the response timeout in milliseconds. The timeout controls the maximum waiting time until a response message is received.  This field is applicable to a scenario when Processing Mode is set to Single .

4.3 Processing

The Processing tab lists all the operations that can be performed on the database through the adapter.

The screenshot shows the 'Processing' tab in the Azure Cosmos DB interface. It features a 'PROCESSING DETAILS' section with the following settings: Processing Mode: Single, Version: 2018-12-31, Entity: Database, and Operation: Create. Below this is a 'HEADERS DETAILS' section with input fields for Request Headers and Response Headers.

Parameter	Description
Processing Details	
Processing Mode	Select the type of processing mode. <ul style="list-style-type: none"> • Single • Bulk
Version	Select the API version. <p> This field is editable and can be updated to use the latest API version available in Azure Cosmos DB.</p>
Entity	Select the entity for the operation to be performed. <ul style="list-style-type: none"> • Database • Container • Document
Operation	Select the type of operation to be performed.
Patch Operation	Select the type of bulk patch operation for Documents.
Database	Specify the ID of the Database. <p> This value can be a valid string.</p>

Parameter	Description
Container	Specify the ID of the Container. <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;">  This value can be a valid string. </div>
Document	Specify the ID of the Document. <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;">  This value can be a valid string. </div>
Partition Key	Specify the partition key for the operation. <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;">  <ul style="list-style-type: none"> This field is mandatory only for some specific versions. For more information, see Azure Cosmos DB documentation. This is required while performing operation in Single processing mode. </div>
Partition Key Path	Specify the path of the partition key. Example: <code>/partitionkey</code>
Path	Specify the path of the bulk patch operation. Example: <code>/address/city</code>
Header Details	
Request Headers	Enter a list of custom headers, separated by a pipe (), to send to the target system. By default, no custom headers are sent. Use an asterisk(*) to send all custom headers to the target system. Alternatively, you can dynamically pass on the values by defining a property that includes a list of headers. <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;">  This field is applicable to a scenario when Processing Mode is set to Single. </div>
Response Headers	Enter a list of headers coming from the target system's response, separated by a pipe (), to be received in the message. Use an asterisk(*) to receive all the headers from the target system, which is also the default value.

5 Azure Cosmos DB Supported Operations

This section lists and describes some of the operations supported by the Azure Cosmos DB adapter. There are two processing modes available to execute an operation which are **Single** and **Bulk** by selecting the option in the dropdown.

5.1 Single Processing Mode

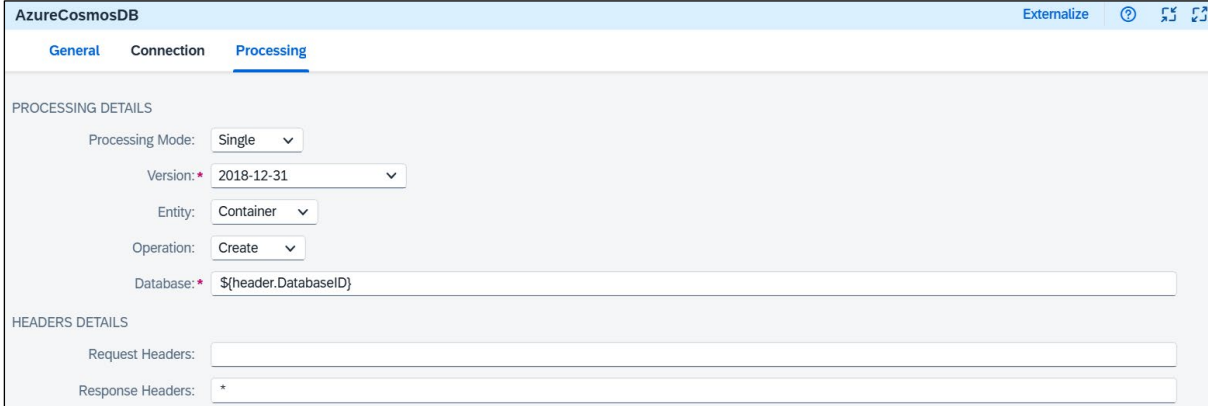
The following operations for single processing pertain to three entities within Azure Cosmos DB: **Database**, **Container**, and **Document**.

5.1.1 Create

The **Create** operation can be used to create a Database, Container, or Document in Azure Cosmos DB.

You can set the Processing mode to **Single**, select the API **Version**, choose an **Entity** type from options such as **Database**, **Container**, and **Document**, and select operation as **Create**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided for creating a container:



The screenshot shows the 'Processing' tab in the Azure Cosmos DB configuration tool. The 'PROCESSING DETAILS' section includes the following fields:

- Processing Mode: Single (dropdown)
- Version: 2018-12-31 (dropdown)
- Entity: Container (dropdown)
- Operation: Create (dropdown)
- Database: \${header.DatabaseID} (text input)

The 'HEADERS DETAILS' section includes:

- Request Headers: (text input)
- Response Headers: *

Sample payload to create a container:

```
{
  "id": "testcoll",
  "indexingPolicy": {
    "automatic": true,
    "indexingMode": "Consistent",
    "includedPaths": [
      {
        "path": "/*",
        "indexes": [
          {
            "dataType": "String",
            "precision": -1,
            "kind": "Range"
          }
        ]
      }
    ]
  },
  "partitionKey": {
    "paths": [
      "/AccountNumber"
    ],
    "kind": "Hash",
    "Version": 2
  }
}
```

5.1.2 Delete

The **Delete** operation can be used to delete a Database, Container, or Document in Azure Cosmos DB.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type from options such as **Database**, **Container**, and **Document**, and select operation as **Delete**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided for deleting a database:

The screenshot shows the 'Processing' tab in the Azure Cosmos DB configuration tool. Under 'PROCESSING DETAILS', the 'Processing Mode' is set to 'Single', 'Version' is '2018-12-31', 'Entity' is 'Database', and 'Operation' is 'Delete'. The 'Database' field contains the placeholder text '\$(header.DatabaseID)'. Under 'HEADERS DETAILS', the 'Request Headers' and 'Response Headers' fields are empty, with a '*' in the 'Response Headers' field.

5.1.3 Get

The **Get** operation can be used to fetch details about a Database, Container, or Document in Azure Cosmos DB.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type from options such as **Database**, **Container**, and **Document**, and select operation as **Get**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided to get a document:

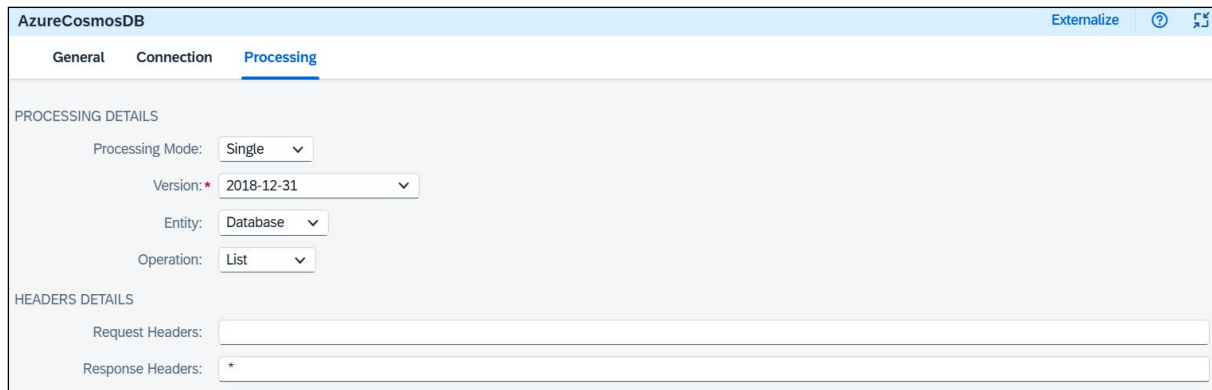
The screenshot shows the 'Processing' tab in the Azure Cosmos DB configuration tool. Under 'PROCESSING DETAILS', the 'Processing Mode' is set to 'Single', 'Version' is '2018-12-31', 'Entity' is 'Document', and 'Operation' is 'Get'. The 'Database', 'Container', and 'Document' fields contain the placeholder text '\$(header.DatabaseID)', '\$(header.ContainerID)', and '\$(header.DocumentID)' respectively. The 'Partition Key' field is empty. Under 'HEADERS DETAILS', the 'Request Headers' and 'Response Headers' fields are empty, with a '*' in the 'Response Headers' field.

5.1.4 List

The **List** operation can be used to retrieve a list of resources such as Database, Container, or Document in Azure Cosmos DB.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type from options such as **Database**, **Container**, and **Document**, and select operation as **List**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided to List the Database:



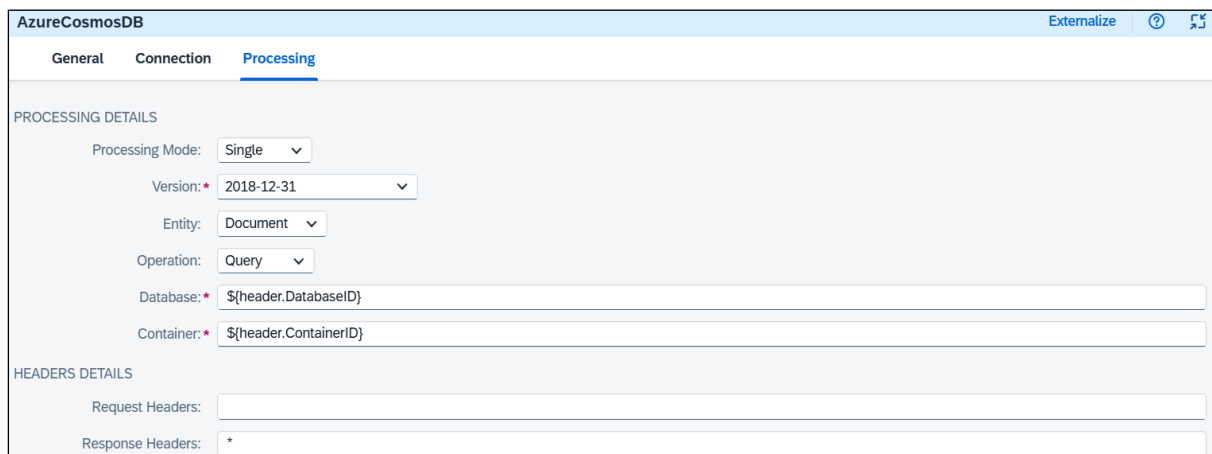
The screenshot shows the 'Processing' tab in the Azure Cosmos DB interface. Under 'PROCESSING DETAILS', the 'Processing Mode' is set to 'Single', 'Version' is '2018-12-31', 'Entity' is 'Database', and 'Operation' is 'List'. Under 'HEADERS DETAILS', 'Request Headers' is empty and 'Response Headers' is set to '*'.

5.1.5 Query

The **Query** operation can be used to query a Document in Azure Cosmos DB.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type as **Document**, and select operation as **Query**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided to Query a Document:



The screenshot shows the 'Processing' tab in the Azure Cosmos DB interface. Under 'PROCESSING DETAILS', the 'Processing Mode' is 'Single', 'Version' is '2018-12-31', 'Entity' is 'Document', and 'Operation' is 'Query'. The 'Database' field contains the placeholder `\${header.DatabaseID}` and the 'Container' field contains the placeholder `\${header.ContainerID}`. Under 'HEADERS DETAILS', 'Request Headers' is empty and 'Response Headers' is set to '*'.

Sample payload for Query documents:

```
{ "query": "SELECT * FROM Families f WHERE f.id = @id AND f.Address.City = @city",
  "parameters": [
    {
      "name": "@id",
      "value": "AndersenFamily"
    },
    {
      "name": "@city",
      "value": "Seattle"
    }
  ]
}
```

5.1.6 Update

The **Update** operation can be used to modify the contents of an existing Document within a container in Azure Cosmos DB.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type as **Document**, and select operation as **Update**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided to update a Document:

The screenshot shows the 'Processing' tab in the Azure Cosmos DB portal. The 'PROCESSING DETAILS' section includes the following fields:

- Processing Mode: Single (dropdown)
- Version: 2018-12-31 (dropdown)
- Entity: Document (dropdown)
- Operation: Update (dropdown)
- Database: \${header.DatabaseID} (text input)
- Container: \${header.ContainerID} (text input)
- Document: \${header.DocumentID} (text input)
- Partition Key: (text input)

The 'HEADERS DETAILS' section includes:

- Request Headers: (text input)
- Response Headers: *

Sample payload:

```
{
  "operations": [
    {
      "op": "set",
      "path": "/Parents/0/FamilyName",
      "value": "Bob"
    }
  ]
}
```

5.1.7 Replace

The **Replace** operation can be used to completely overwrite an existing document with a new one for the Document entity and changes the indexing policy settings of a container after creation. Changing other properties of a container like the ID or the partition key is not supported.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type from options such as **Container** or **Document**, and select operation as **Replace**. For more information about the configuration fields, see [Processing Tab](#).

Below is the example provided to replace a Document:

The screenshot shows the 'Processing' tab in the Azure Cosmos DB portal. The 'PROCESSING DETAILS' section is active, showing the following configuration:

- Processing Mode: Single
- Version: 2018-12-31
- Entity: Document
- Operation: Replace
- Database: \${header.DatabaseID}
- Container: \${header.ContainerID}
- Document: \${header.DocumentID}
- Partition Key: (empty)

The 'HEADERS DETAILS' section shows:

- Request Headers: (empty)
- Response Headers: *

Sample payload for Replace document:

```
{
  "id": "_SalesOrder5",
  "AccountNumber": "NewUser01",
  "PurchaseOrderNumber": "P018009186470",
  "OrderDate": "2016-03-29T02:03:07.3526153Z",
  "Total": 5.95,
  "_rid": "d9RzAJRFKgwEAAAAAAAAA==",
  "_self": "dbs/d9RzAA==/colls/d9RzAJRFKgw=/docs/d9RzAJRFKgwEAAAAAAAAA==/",
  "_etag": "\"0000de86-0000-0000-0000-56f9e25c0000\"",
  "_ts": 1459216988,
  "_attachments": "attachments/",
  "shippedDate": "2016-03-29T02:03:07.4680723Z",
  "foo": "bar"
}
```

5.1.8 Get Partition Key Ranges

The **Get Partition Key Ranges** operation can be used to retrieve information about the partition key ranges within a Container, providing insights into how data is distributed across partitions.

You can set the Processing mode to **Single**, select the API Version, choose an Entity type as **Container**, and select operation as **Get Partition Key Ranges**. For more information about the configuration fields, see [Processing Tab](#).


The screenshot shows the 'Processing' tab in the Azure Cosmos DB management console. It is divided into two sections: 'PROCESSING DETAILS' and 'HEADERS DETAILS'. In the 'PROCESSING DETAILS' section, the 'Processing Mode' is set to 'Single', the 'Version' is '2018-12-31', the 'Entity' is 'Container', and the 'Operation' is 'Get P...'. The 'Database' and 'Container' fields are both set to '\$(header.DatabaseID)'. The 'HEADERS DETAILS' section has 'Request Headers' and 'Response Headers' fields, with the 'Response Headers' field containing an asterisk (*).

5.2 Bulk Processing Mode

The following operation for bulk processing pertains to the **Document** entity within Azure Cosmos DB.

5.2.1 Create

The **Create** operation can be used to create multiple Documents in a single batch request in Azure Cosmos DB.



The screenshot shows the 'Processing' tab in the Azure Cosmos DB configuration interface. It is titled 'AzureCosmosDB' and includes an 'Externalize' button and a help icon. The 'Processing' tab is active, showing 'PROCESSING DETAILS' and 'HEADERS DETAILS'. Under 'PROCESSING DETAILS', there are several fields: 'Processing Mode' is set to 'Bulk', 'Entity' is 'Document', and 'Operation' is 'Create'. Below these are three text input fields: 'Database: *' with the value '\$\${header.DatabaseID}', 'Container: *' with '\$\${header.ContainerID}', and 'Partition Key Path: *' with '\$\${header.PartitionKeyPath}'. Under 'HEADERS DETAILS', there is a 'Response Headers' field with an asterisk '*'.

For more information about the configuration fields, see [Processing Tab](#).

Sample payload:

i Note that the following information must be present in the payload which denotes the Document data.

```
[
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  },
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  }
]
```

5.2.2 Replace

The **Replace** operation in Azure Cosmos DB involves replacing/updating multiple documents in a single batch operation. This is useful when you need to modify existing documents in bulk rather than inserting new ones.

AzureCosmosDB Externalize ?

General **Connection** **Processing**

PROCESSING DETAILS

Processing Mode: Bulk

Entity: Document

Operation: Replace

Database: * \${header.DatabaseID}

Container: * \${header.ContainerID}

Partition Key Path: * \${header.PartitionKeyPath}

HEADERS DETAILS

Response Headers: *

For more information about the configuration fields, see [Processing Tab](#).
 Sample payload:

i Note that the following information must be present in the payload which denotes the Document data.

```
[
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  },
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  }
]
```

5.2.3Upsert

The **Upsert** operation is used to insert or update multiple documents in a single operation. It updates any existing documents in CosmoDB and insert it if they are not already present.

AzureCosmosDB Externalize ?

General **Connection** **Processing**

PROCESSING DETAILS

Processing Mode: Bulk

Entity: Document

Operation: Upsert

Database: * \${header.DatabaseID}

Container: * \${header.ContainerID}

Partition Key Path: * \${header.PartitionKeyPath}

HEADERS DETAILS

Response Headers: *

For more information about the configuration fields, see [Processing Tab](#).

Sample payload:



Note that the following information must be present in the payload which denotes the Document data.

```
[
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  },
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  }
]
```

5.2.4 Delete

A **Delete** operation refers to the process of deleting multiple documents in a single operation.

The screenshot shows the 'Processing' tab in the Azure Cosmos DB interface. It is divided into two sections: 'PROCESSING DETAILS' and 'HEADERS DETAILS'. In the 'PROCESSING DETAILS' section, the 'Processing Mode' is set to 'Bulk', 'Entity' is 'Document', and 'Operation' is 'Delete'. The 'Database' field contains the placeholder text `\${header.DatabaseID}`, 'Container' contains `\${header.ContainerID}`, and 'Partition Key Path' contains `\${header.PartitionKeyPath}`. The 'HEADERS DETAILS' section has a 'Response Headers' field with an asterisk (*) as its value.

For more information about the configuration fields, see [Processing Tab](#).

Sample payload:

```
[
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  },
  {
    "id": "_id",
    "partitionKey": "_partitionKey"
  }
]
```

5.2.5 Patch

A **Patch** operation involves path-level updates to specific files/properties to multiple documents in a single batch. These operations include modifications such as add, increment, move, remove, replace, and set.

Patch operations are particularly useful for making partial updates to documents without needing to replace the entire document. You can choose the appropriate Patch Operations from the table below. For more information about the configuration fields, see [Processing Tab](#).



The screenshot shows the 'Processing' tab in the Azure Cosmos DB configuration interface. It includes the following fields:

- Processing Mode: Bulk
- Entity: Document
- Operation: Patch
- Patch Operation: Add
- Database: * \${header.DatabaseID}
- Container: * \${header.ContainerID}
- Partition Key Path: * \${header.PartitionKeyPath}
- Path: * \${header.Path}

Patch Operation type	Description
Add	Add a new element or value to an existing document.
Set	Set or update the value of an element.
Replace	Replace operation is similar to Set except it follows <i>strict</i> replace-only semantics.
Remove	Remove operation deletes the element specified in the target path.
Increment	Increment a field by the specified value. It can accept both positive and negative values.
Move	Move operation removes the value at a specified location and adds it to the target location.

For more information about the above fields, see [Azure Cosmos DB documentation](#).

Sample payload:

```
[
  {
    "id": "_id",
    "partitionKey": "_partitionKey",
    "patchValue": "_patchValue"
  },
  {
    "id": "_id",
    "partitionKey": "_partitionKey",
    "patchValue": "_patchValue"
  }
]
```

Below is the sample response body provided for the bulk operations:

```
{
  "totalDocuments": 2,
  "successDocuments": 2,
  "failedDocuments": 0,
  "responses": [
    {
      "id": "1",
      "message": "The operation for Item ID [1] completed successfully with a 201 response code.",
      "statusCode": 201,
      "requestCharge": 14.666666666666666
    },
    {
      "id": "2",
      "message": "The operation for Item ID [2] completed successfully with a 201 response code.",
      "statusCode": 201,
      "requestCharge": 14.666666666666666
    }
  ]
}
```