Microsoft Teams Adapter for SAP Integration Suite

Version 1.0.0 – April 2025

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Contents

1 Introduction

1.1 Objective

This is the official guide for the Microsoft Teams Adapter for SAP Integration Suite. This guide covers all relevant information for integration developers to start working with the Microsoft Teams 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

The Microsoft Teams adapter enables seamless integration between Microsoft Teams and SAP Integration Suite, improving communication and automating workflows.

The adapter allows you to manage resources to streamline operations, improve collaboration, and manage data across platforms efficiently. You can optimize productivity, enhance user experience, and ensure secure data sharing by adopting the Microsoft Teams adapter.

1.5 Features

- Supports standard operations for various Microsoft Teams resources like **Channel**, **Team**, **Member**, **Message**, and **Chat**.

- Supports secure and reliable authentication methods: **OAuth2 Authorization Code** and **OAuth2 Client Credentials**.

- Supports **querying** on resources to retrieve the **desired output** as per your requirements.

- Supports **pagination** using the **Get next results page** operation.

- Flexibility to perform operations at the user level (**Delegated Permission**) and organization/admin level (**Application Permission**).

2 Installation and Configuration

This section details the file(s) available as part of the installation package and the prerequisites to configure the Microsoft Teams adapter.

The Microsoft Teams adapter is available as part of your SAP Integration Suite license.

2.1 Adapter Installation on Cloud Foundry

Before the adapter can be used in the Cloud Foundry environment, it must be deployed to the SAP Integration Suite tenant.

2.1.1 Prerequisites

To deploy the Microsoft Teams adapter, you must have access to the *SAP Integration Suite* license.

2.1.2 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.

2.1.3 Adapter Installation by creating a New Integration Flow

The Microsoft Teams 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 **MicrosoftTeams** adapter should show up in the list.
6. Select the **MicrosoftTeams** adapter from the list. The adapter is now imported which *triggers* an adapter deployment. Once Microsoft Teams Adapter is deployed, a success message is displayed.
   After the above steps are done, the Microsoft Teams Adapter is successfully deployed in your Design workspace of the SAP Integration Suite tenant.

2.1.4 Adapter Installation without Creating a New Integration Flow

The following procedure explains how the Microsoft Teams 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 Microsoft Teams adapter can be imported into the Design workspace without creating an integration flow. Use the Transport Management Service (TMS) to import/transport the Microsoft Teams 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 Microsoft Teams adapter to the Design workspace, follow these steps:

Procedure

1. Go to **Discover** workspace.
2. In the search box, search for **MicrosoftTeams 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 **MicrosoftTeams 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.

2.2 Monitor the Deployment Status

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

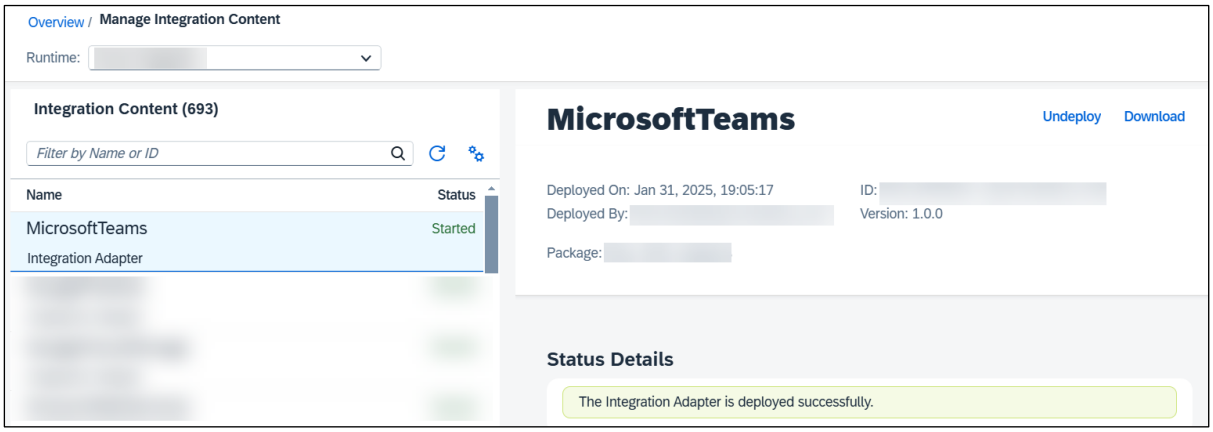
Purpose

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 the **Integration Content** page with a list of all the deployed adapters.

Here, you can check and confirm the deployment status of your adapter.

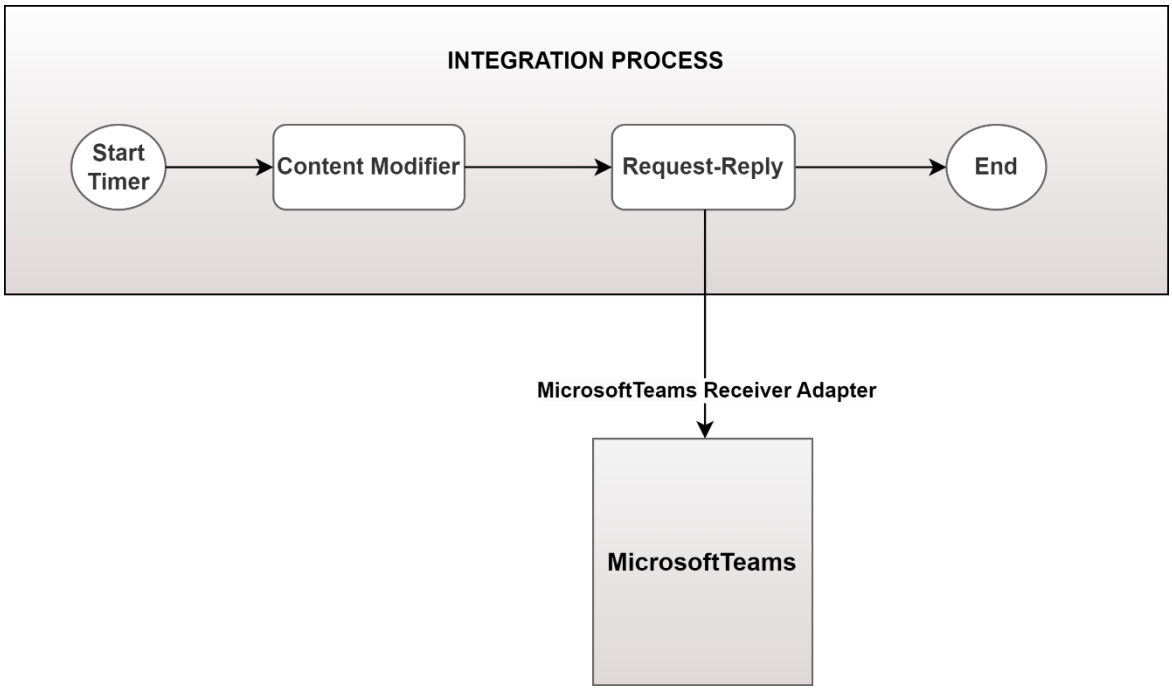


3 Getting Started: Microsoft Teams Adapter

This section explains how to configure the Microsoft Teams adapter for SAP Integration Suite. You can find information about adapter architecture, application configuration, and authentication for Microsoft Teams Adapter.

3.1 Architecture Overview

The Microsoft Teams adapter is designed to function as a receiver adapter. In such a scenario where the Microsoft Teams 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 Microsoft Teams via the Microsoft Teams Adapter using your user credentials. Before you begin, the following links can be helpful to set up your Microsoft Teams application.

To create a Microsoft Teams Account, see Create a Microsoft Teams account.

Additionally, refer to the official Microsoft documentation for registering the application on Azure.

3.3 Authentication

This section details the authentication mechanism supported by the Microsoft Teams Adapter in the SAP Integration Suite.

The adapter supports standard authentication methods like **OAuth2 Client Credentials** and **OAuth2 Authorization Code**. You can securely store the security artifacts in SAP Security Material. This ensures that credentials can be safely provided to the Adapter.
Before setting up the authentication, you must create credentials in the Security Material of the SAP Integration Suite.

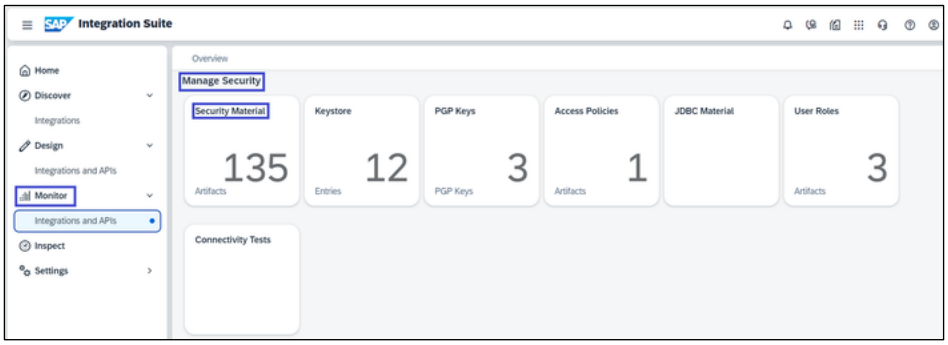
3.3.1 Creation of OAuth2 Client Credentials for Application Permission

Purpose

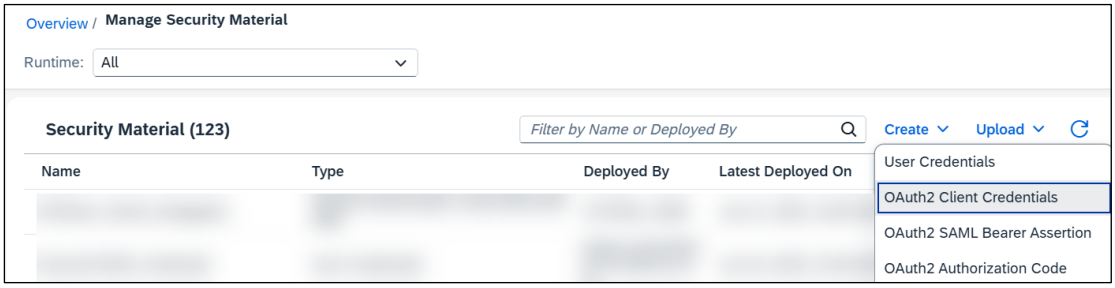
To create credentials in Security Material for **OAuth2 Client Credentials**.

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 **OAuth2 Client Credentials** from the dropdown.



4. In the **Create OAuth2 Client Credentials** popup, provide the below details.

Parameter	Description
Name	Specify the name for the credentials.
Description	Specify the description for the credentials.
Token Service URL	Specify the URL of the OAuth2 authorization server that issues the access token. Example: `https://login.microsoftonline.com/<tenantID>/oauth2/v2.0/token`
Client ID	Specify the ID of the client to which you are connecting.
Client Secret	Specify the Secret key of the client to which you are connecting. OAuth2 uses a multiple step authentication pattern: Client credentials (Client ID and Client Secret, as specified in the artifact) are used by the client application to initially request an access token. The access token is then used to authorize the client (for as long as the token is valid) to access the server's resources (for example, the resources that are used in the associated integration flow). In many OAuth2 scenarios, the access token is issued (or generated) by an authorization server.
Client Authentication	Select the Client Authentication which allows you to access an application using Client ID and Client Secret. By default, the Send as Body Parameter is selected, this option sends the Client ID and Client Secret as a JSON content to the authentication server in the request body. If you select the Send as Request Header option, then the Client ID and Client Secret are encoded, and send to the server as an Authorization header. Example: **Send as Body Parameter**
Scope	Specify the OAuth2 scope information to be included in the request body.
Content Type	Select content type to indicate the media type. To use application permissions in the adapter, deploy an OAUTH2 Client Credential security artifact and ensure Content Type is set to **'application/x-www-form-urlencoded'**:

Parameter	Description
Resource	Specify the identifier of the application or service that shares the same client secret. The identifier varies depending on the service that you want to connect with.
Audience	Specify the identifier of the application or service that shares the same client secret. The identifier varies depending on the service that you want to connect with.

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

When you refresh the **Manage Security Material** page, the new artifact is displayed (with Type **OAuth2 Client Credentials**) in the artifact table.

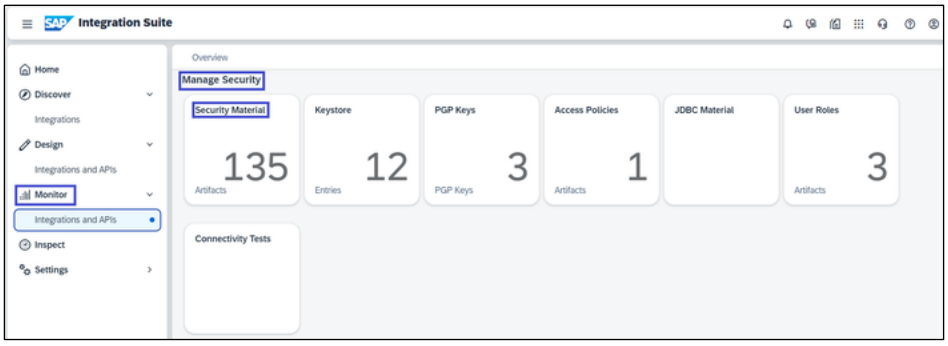
3.3.2 Creation of OAuth2 Authorization Code for Delegated Permission

Purpose

To create credentials in Security Material for **OAuth2 Authorization Code**.

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**.



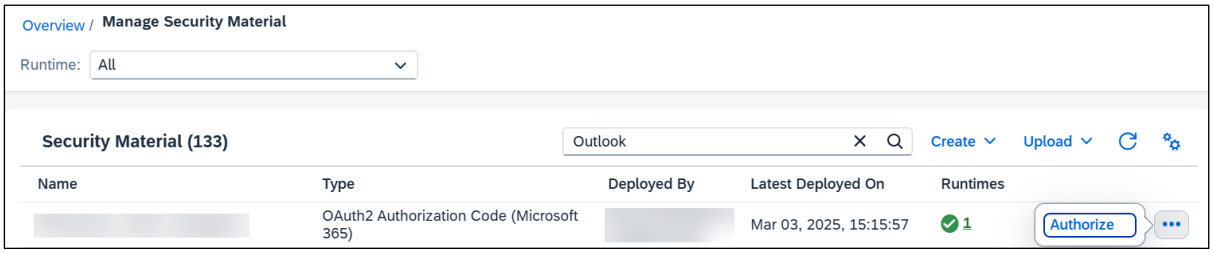
3. On Manage Security Material page, click **Create** to select **OAuth2 Authorization Code** from the dropdown.

4. In the Create OAuth2 Authorization Code popup, provide the below details.

Parameter	Description
Name	Specify the name for the security artifact.
Description	Specify a description for the artifact (optional).
Provider	Select the name of the provider for the platform on which you created the OAuth2 client. Ensure that you select **Microsoft 365** in this field.
Authorization URL	Specify the Authorization URL for authorizing the OAuth client to access resources of a user. Example: `https://login.microsoftonline.com/<tenantID>/oauth2/v2.0/authorize`
Token Service URL	Specify the Address of the token service that issues the access token. Example: `https://login.microsoftonline.com/<tenantID>/oauth2/v2.0/token`
Redirect URL	Displays the URL you need, when creating the OAuth Clients/App in OAuth Authorization Server/Token Server.
Client ID	Specify the ID of the client you want to connect to.
Client Secret	Specify the Secret key of the client to which you are connecting.
Send As	Select as **Body Parameter** which sends the Client ID and Client Secret in the request body when calling the Authorization URL or Token Service URL.
User Name	Specify the name of the user whose resources the OAuth2 client gets access to.

Parameter	Description
Scope	Specify the OAuth2 scopes protecting the access to the resources. The scope value is added to the Authorization URL (see above) as query parameter and is also added to the Token Service URL, in case of the "authorization_code" grant type request; but is not added to the Token Service URL in case of the "refresh_token" grant type request (see above). If you add more than 1 scope, you need to separate your scopes by a blank space.

5. Click **Deploy.**
6. After deployment, click **Authorize** to complete the process.



When you refresh the **Manage Security Material** page, the new artifact is displayed (with Type **OAuth2 Authorization Code**) in the artifact table.

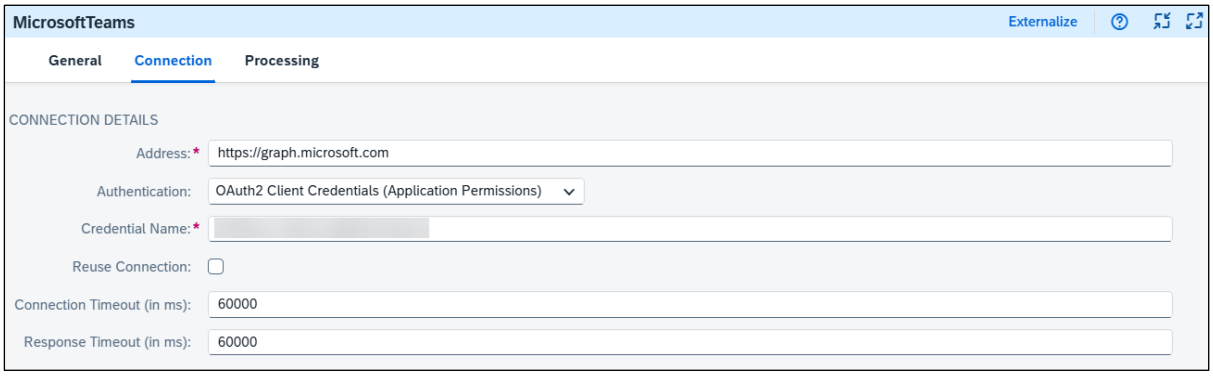
4 Microsoft Teams Adapter Configuration

This section describes the parameters to be configured for your Microsoft Teams adapter. You need to configure the **Connection** and **Processing** tabs. A description and example usage for every field has been added.

4.1 Connection

The Connection tab contains connection and authentication parameters for Microsoft Teams.

The Security artifact created in the previous section (Authentication) should be used in the **Connection tab** of the Adapter as shown in the figure below.



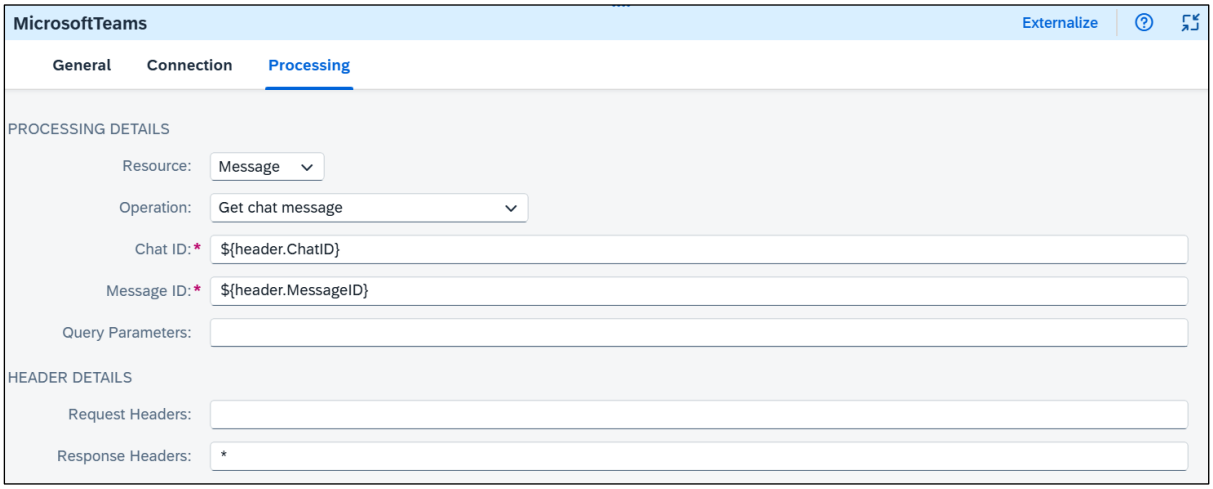
The connection tab contains the following fields:

Parameter	Description
Address	Specify the address for the Microsoft Teams service. Default: `https://graph.microsoft.com`
Authentication	Select the authentication method and permission type: 'Delegated' for user-level access, 'Application' for app-level access: • **OAuth2 Client Credentials (Application Permissions)** • **OAuth2 Authorization Code (Delegated Permissions)**
Credential Name	Specify the security artifact for the selected authentication type to connect to the Microsoft Teams account.

Parameter	Description
Reuse Connection	Enable to reuse the connection.
Connection Timeout (in ms)	Specify the maximum waiting time (in milliseconds) for the connection to be established.
Response Timeout (in ms)	Specify the maximum waiting time (in milliseconds) for a response message to be received.

4.2 Processing

This section lists the processing tab configurations for Microsoft Teams Adapter.



Parameter	Description
Processing Details	
Resource	Select the resource on which to perform an operation: • **Team** • **Channel** • **Member** • **Message** • **Chat**
Operation	Select the operation to be performed.

Parameter	Description
Team ID	Specify the Team ID to perform the operation. Example: `e7cfbfaf-0a6c-44c2-93dd-128ec93fcbcf`
Channel ID	Specify the Channel ID to perform the operation. Example: `19:BMfgIlmyW0dJMrom10A5l0OJZpUXIa_RLegsRRh9eBg1@thread.tacv2`
Message ID	Specify the Message ID to perform the operation. Example: `1738252695781`
Chat ID	Specify the Chat ID to perform the operation. Example: `19:c8812be898a34da3a1b390738569daea@thread.v2`
Membership ID	Specify the Membership ID to perform the operation. Example: `MCMjMCMjZmE2YWZkZDAtZjNmYi00NmQ5LThiMTYtZWRjMjQ4NDcxYzA5IyMxOTpjODgxMmJlODk4ZDM0YWEzYTFiMzkwNzM3NTYyZGFlYUB0aHJlYWQudjIjI2UyOTQwMGE1LWU5YzctNGE5Ni04ZDk2LTQ4OTE5YTkwYzI3NA==` The Membership ID varies across different resource types. For example, the Membership ID for a channel resource is different from the Membership ID for a chat resource.
User ID	Specify the User ID or principal name to perform the operation. Example: `6ad943cb-2cfd-8275-9d07-57a5e4d27cf3 or johndoe@contoso.com`
Reply ID	Specify the message Reply ID to perform the operation. Example: `1738851885090`
Query Parameters	Specify the query parameter. When using multiple parameters, ensure they are separated by "&". Example: `$top=20&$expand=members`

Parameter	Description
Start Date Time	Specify the date and time from when the messages should be fetched. Example: `2024-08-27T07:13:28.000z` Ensure that the format (YYYY-MM-DDTHH:mm:ss.sssz) provided in the example is followed for this field.
Delta Link (URL)	Specify the Delta Link (URL) to perform the operation; leave blank for the initial request.
Shared Channel Team ID	Specify the ID (shared-with-channel-team-info-id) of the team with whom the channel is shared to perform the operation.
Next Link URL	Specify the Next Link URL to perform the operation. Example: `https://graph.microsoft.com/v1.0/users/27eaf6fc-b110-445b-b220-0c239cee2776/chats?$top=1.` The "Next Link" URL is used for pagination through the "Get next page result" operation.
Async Operation Location	Specify the Async Operation Location to perform the operation. Example: `/teams('e6cfbfav-0a6c-44c2-93ed-152fc93acbcf')/operations('bd352c21-2kse-4ae9-aba3-25c3b9hd30ec')` The location header retrieved from an asynchronous operation can be used in this field to check the status of the task.
Wait Retry Interval (ms)	Specify the time (in milliseconds) between each status check performed by the adapter.
Maximum Wait Time (ms)	Specify the maximum time (in milliseconds) the adapter will wait for the final status of the async operation.
Header Details	
Request Headers	Enter a list of custom headers, separated by a pipe (|), to be sent to the target system. Use an asterisk (*) to send all custom headers to the target system. All Camel-specific headers and HTTP protocol headers except "date" are excluded by default even if you specify them. Note that this value can also be read dynamically using an exchange header or property.

Parameter	Description
Response Headers	Enter a list of headers, separated by a pipe (|), coming from the target system's response to be received in the message. Use an asterisk (*) to receive all the headers from the target system, which is also the default value. All Camel-specific headers and HTTP protocol headers except "date" are excluded by default even if you specify them. Note that this value can also be read dynamically using an exchange header or property.

5 Microsoft Teams Supported Operations

This section lists and describes some of the operations supported by the Microsoft Teams adapter. For detailed information on any particular operation, see Microsoft Teams documentation.

For a complete list of all available operations and the corresponding permissions required in the Microsoft Teams Adapter, see Appendix.

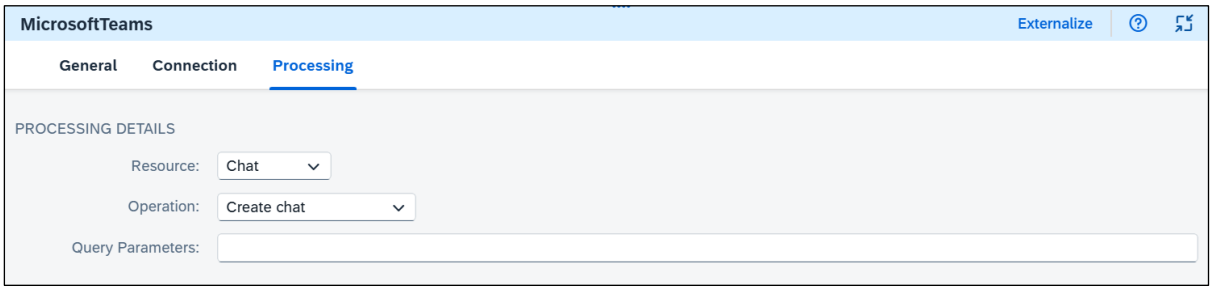
5.1 How to Create a chat?

The **Create chat** operation can be used to create one-on-one or group chats with users.

Users in organization: The User IDs of the chat members can be provided in the request body, and the principal name can also be used instead of the ID.

Guest or federated users: A group chat can be created with a tenant guest user or a one-on-one chat with a federated user (outside of your organization) can also be created. For more information about this operation, see Create chat.

Only one one-on-one chat can exist between two members. If a one-on-one chat already exists, this operation will return the existing chat and not create a new one.



Parameter	Values
Resource	Select as **Chat**.
Operation	Select the operation as **Create chat.**

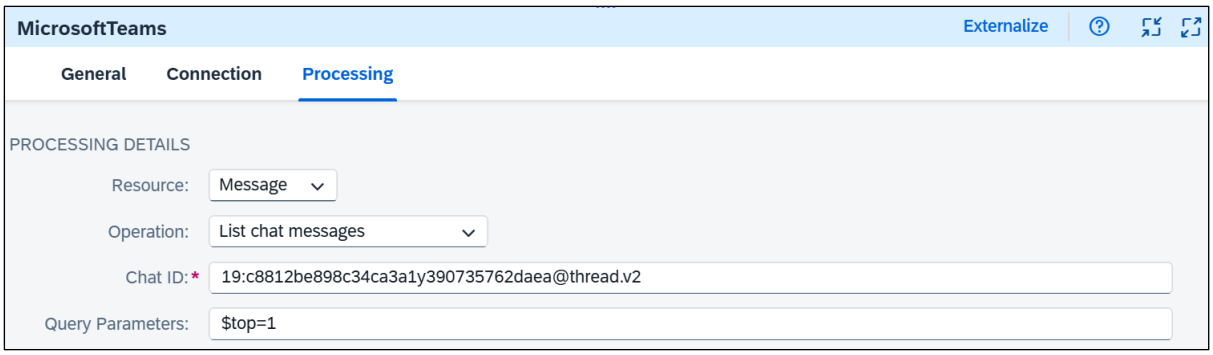
Sample request payload for one-on-one chat:

```
{
  "chatType": "oneOnOne",
  "members": [
    {
      "@odata.type": "#microsoft.graph.aadUserConversationMember",
      "roles": ["owner"],
      "user@odata.bind":
"https://graph.microsoft.com/v1.0/users('8b081ef6-4792-4def-b2c9-
c363a1bf41d5')"
    },
    {
      "@odata.type": "#microsoft.graph.aadUserConversationMember",
      "roles": ["owner"],
      "user@odata.bind":
"https://graph.microsoft.com/v1.0/users('82af01c5-f7cc-4a2e-a728-
3a5df21afd9d')"
    }
  ]
}
```

5.2 How to List chat messages?

This **List chat messages** operation retrieves all messages in a chat. A request body is not required for this operation.

For more information about this operation, see official documentation.



Parameter	Values
Resource	Select as **Message.**
Operation	Select the operation as **List chat messages**.
Chat ID	Specify the Chat ID as `19:c8812be898c34ca3a1y390735762daea@thread.v2`

Parameter	Values
Query Parameter	Specify the query parameter as `$top=1` The $top parameter controls the number of items per response. The maximum allowed value for $top is 50.

Response body for List chat messages filtered by last modified date range:

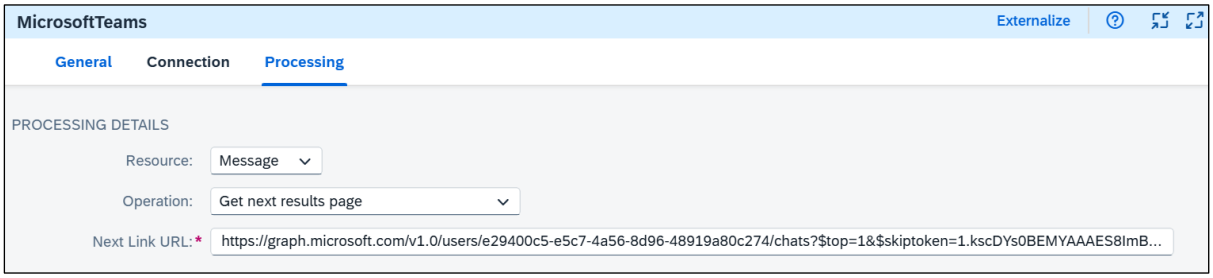

```
{
  "@odata.context":
"https://graph.microsoft.com/v1.0/$metadata#chats('19%3A2da4c29f6d
7041eca70b638b43d78437%40thread.v2')/messages",
  "@odata.count": 1,
  "@odata.nextLink":
"https://graph.microsoft.com/v1.0/chats/19:2da7c29f6d7041eca70b638
b43d45437@thread.v2/messages?$top=1&$orderby=lastModifiedDateTime
desc&$filter=lastModifiedDateTime gt 2022-09-22T00:00:00.000Z and
lastModifiedDateTime lt 2022-09-
24T00:00:00.000Z&$skiptoken=M2UyZDAwMDAwMDMxMzkzYTMyNjQ2MTM0NjMzMj
M5NjYzNjY0MzczMDM0MzE2NTYzNjEzNzMwNjIzNjMzMzg2MjM0MzM2NDM0MzUzNDMz
Mzc0MDc0Njg3MjY1NjE2NDJlSDDzYzMjAxZThmYjY4M2Y7ODAxMDAwMDg4NjA5ODdh
NzgwMTAwMDB8MTYxNjk2NDUwOTgzMg%3d%3d",
  "value": [
    {
      "id": "161904509832",
      "replyToId": null,
      "etag": "1616964539832",
      "messageType": "message",
      "createdDateTime": "2022-09-23T00:00:00.000Z",
      "lastModifiedDateTime": "2022-09-23T00:00:00.000Z",
      "lastEditedDateTime": null,
      "deletedDateTime": null,
      "subject": null,
      "summary": null,
      "chatId": "19:2da4c29f6d7041exa70b638b43d45437@thread.v2",
      "importance": "normal",
      "locale": "en-us",
      "webUrl": null,
      "channelIdentity": null,
      "onBehalfOf": null,
      "policyViolation": null,
      "eventDetail": null,
      "from": {
        "application": null,
        "device": null,
        "user": {
          "id": "8ea0e38b-efb3-4757-924a-5f94061cf8c2",
          "displayName": "Robin Kline",
```

```
            "userIdentityType": "aadUser"
          }
        },
        "body": {
          "contentType": "text",
          "content": "Hello world"
        },
        "attachments": [],
        "mentions": [],
        "reactions": [],
        "messageHistory": []
      }
    ]
}
```


5.3 How to Get next page results?

The **Get Next Results** page can be used for pagination across all resource types. As mentioned in the previous operation, when data is filtered using the query parameter, only a subset of the data is returned.

To retrieve the remaining data, provide the Next Link URL found in the response body of the operation for pagination. (Refer to Response body of the List chat messages operation)

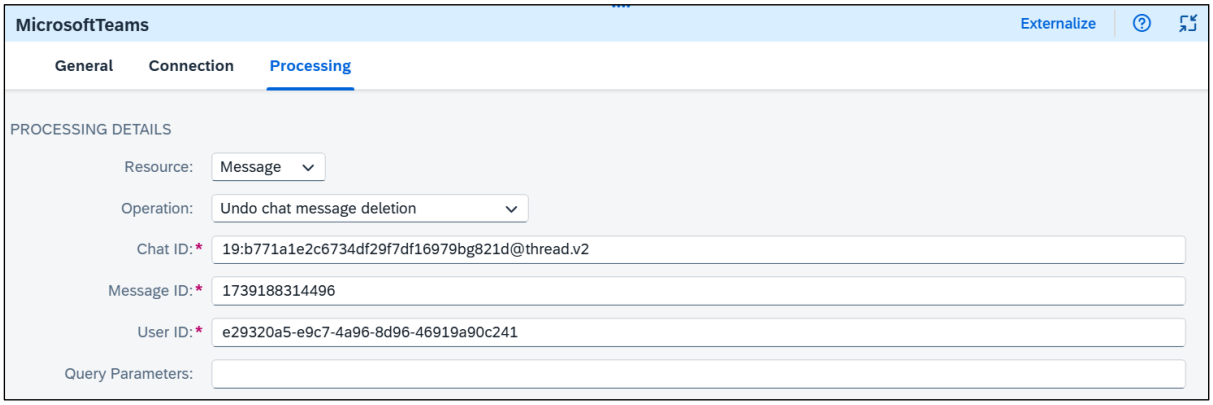


Parameter	Value
Resource	Select as **Message**.
Operation	Select the operation as **Get next results page**.
Next Link URL	Specify the **Next Link URL** to perform the operation.

5.4 How to Undo Deleted Messages from a Channel or Chat?

The **Undo Channel/Chat Message Deletion** operation allows the user to restore a channel/chat message that was previously **soft-deleted**. This feature can be used to recover content that may have been deleted and requires restoration.

Messages can be restored if soft deleted; once hard deleted after the retention period, they cannot be restored. For more information, refer to the retention period.

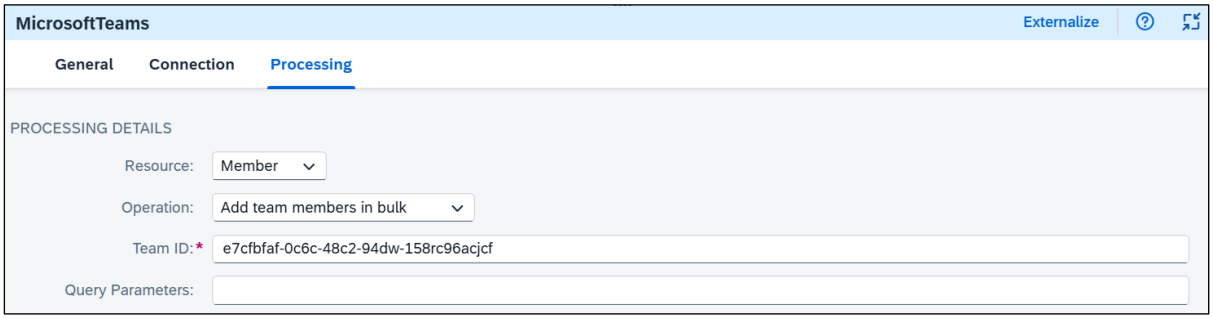


Parameter	Value
Resource	Select as **Message**.
Operation	Select the operation as **Undo chat message deletion**.
Chat ID	Specify the Chat ID as `19:b771a1e2c6734df29f7df16979bg821d@thread.v2`
Message ID	Specify the Message ID as `1738552794782`
User ID	Specify the User ID as `e29320a5-e9c7-4a96-8d96-46919a90c241`

5.5 How to Add team members in bulk?

The **Add Team Members in Bulk** operation allows you to add members to a team in bulk. At a time, a maximum of 200 members can be added. In case some memberships cannot be added, the response provides detailed information on which memberships were successfully added and which ones failed.

Sometimes it takes time to reflect the addition of a member after they are added. Users can use change notifications to subscribe to notifications for membership changes in a particular team.



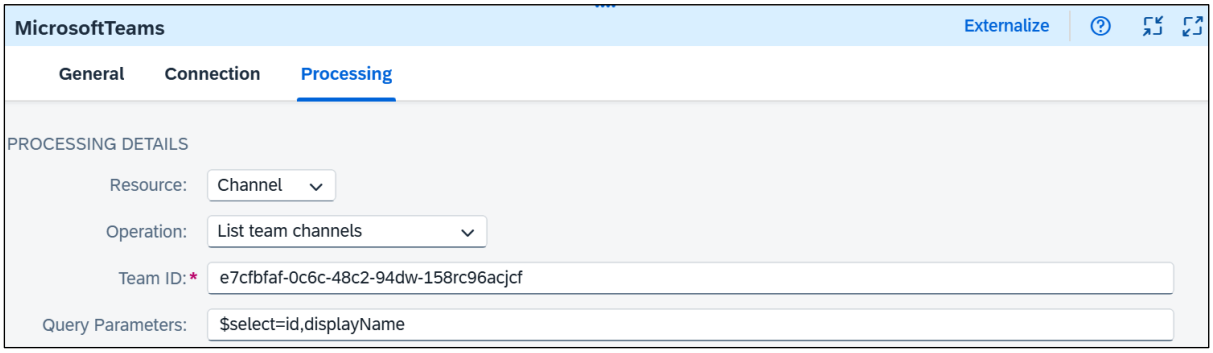
Parameter	Value
Resource	Select as **Member**.
Operation	Select the operation as **Add team members in bulk.**
Team ID	Specify the Team ID as `e7cfbfaf-0c6c-48c2-94dw-158rc96acjcf`

Sample payload:

```
{
    "values": [
        {
            "@odata.type":
"microsoft.graph.aadUserConversationMember",
            "roles":[],
            "user@odata.bind":
"https://graph.microsoft.com/v1.0/users('18a80140-b0bb-4489-b360-
2f6efaf225a0')"
        },
        {
            "@odata.type":
"microsoft.graph.aadUserConversationMember",
            "roles":["owner"],
            "user@odata.bind":
"https://graph.microsoft.com/v1.0/users('88503198-s81b-43fe-81ee-
ad45b8848ac9')"
        }
    ]
}
```

5.6 How to List team channels?

The **List team channels** operation allows you to retrieve all channels within a team, including both standard and private channels. Guest users can only access private channels they are members of and cannot view channels they are not part of.

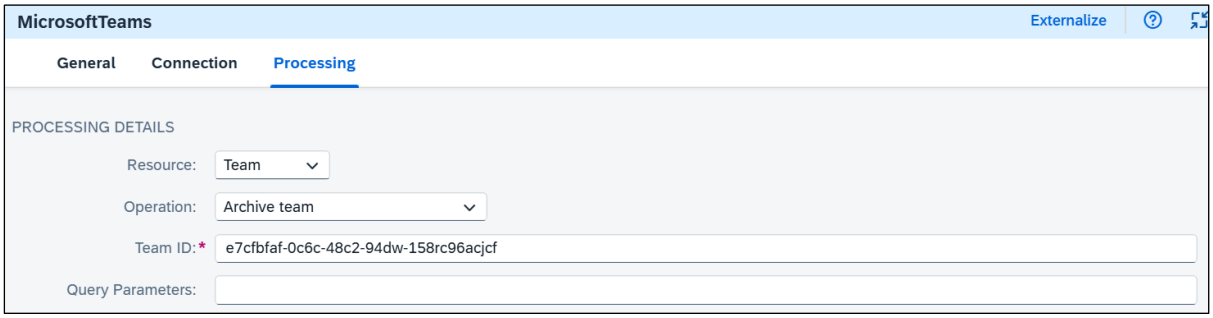


Parameter	Values
Resource	Select as **Channel**.
Operation	Select the operation as **List team channels**.
Team ID	Specify the Team ID as `e7cfbfaf-0c6c-48c2-94dw-158rc96acjcf`
Query Parameter	Specify the query parameter as `$select=id,displayName`

5.7 How to Archive a Team?

The **Archive Team** operation lets you archive a team, making it inactive. After archiving, users can no longer perform most actions. For example, users can no longer send or like messages on any channel in the team, edit the team's name or description, or modify other settings.

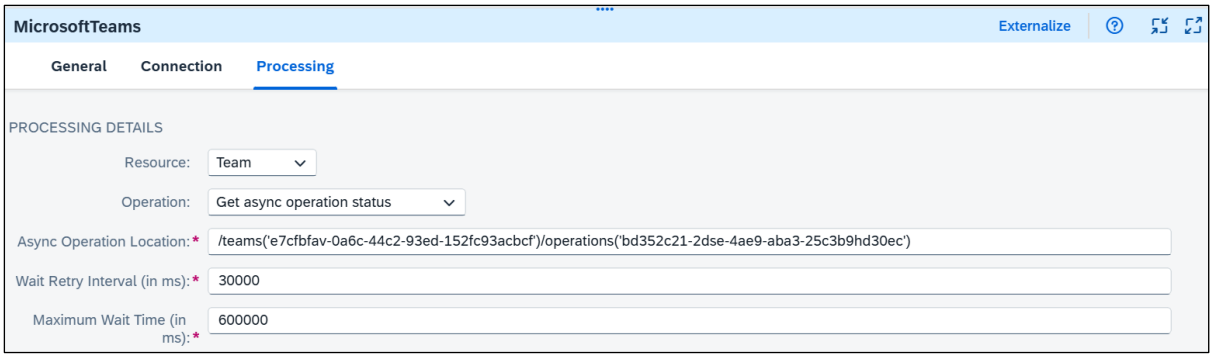
However, membership changes to the team are still allowed. Archiving is an *asynchronous* process, and the team is officially archived once the operation is complete.



Parameter	Values
Resource	Select as **Team.**
Operation	Select the operation as **Archive team.**
Team ID	Specify the Team ID as `e7cfbfaf-0c6c-48c2-94dw-158rc96acjcf`.

5.8 How to Get async operation status?

The **Get Async Operation Status** operation lets you check the status of an asynchronous operation, such as archiving a team. By providing the location header from the response of any async operation in the **Async operation location** field, you can check if the process is still in progress or has been completed. The response will include the current status of the operation.



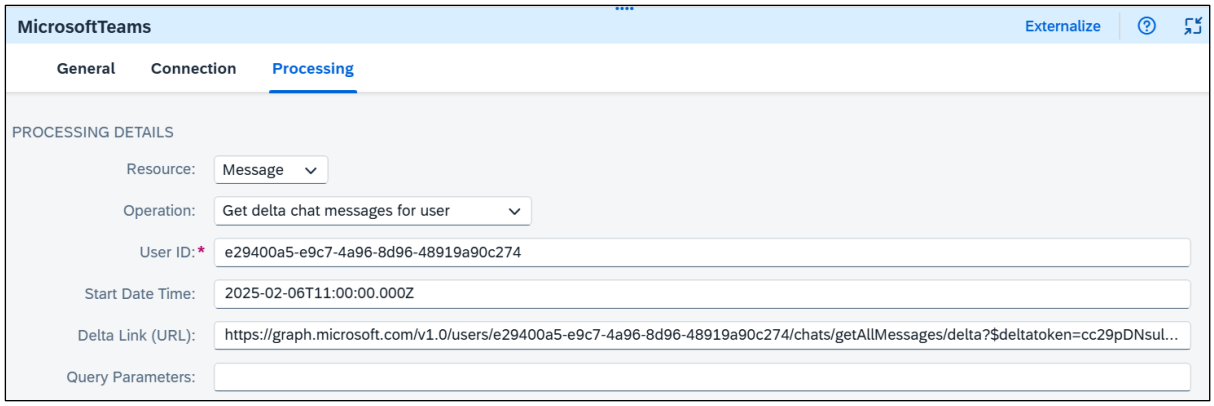
Parameter	Values
Resource	Select as **Team**.
Operation	Select the operation as **Get async operation status** .
Async Operation Location	Specify the Async Operation Location as `/teams('e7cfbfav-0a6c-44c2-93ed-152fc93acbcf')/operations('bd352c21-2dse-4ae9-aba3-25c3b9hd30ec')` The location header retrieved from an asynchronous operation can be used in this field to check the status of the task.
Wait Retry Interval	Specify the time (in milliseconds) between each status check performed by the adapter.
Maximum Wait Time	Specify the maximum time (in milliseconds) the adapter will wait for the final status of the async operation.

5.9 How to Get delta chat messages for user?

The **Get Delta Chat Messages for User** operation allows you to track changes in chat messages for a user. It returns newly added or modified messages since the last delta query.

The **Start Date Time** field should be specified in the initial request. In the final response, a **Delta Link (URL)** will be included. This Delta Link can then be utilized in the user interface to fetch additional data. For more information about this operation, see Delta operation.

Delta only returns messages within the last eight months.



Parameter	Values
Resource	Select as **Message**.
Operation	Select the operation as **Get delta chat messages for user.**
User ID	Specify the User ID as `e29400a5-e9c7-4a96-8d96-48919a90c274`.
Start Date Time	Specify the date and time as `2025-02-06T11:00:00.000Z`. This parameter is intended to be used only in the initial request to define the timeline for fetching records.
Delta Link (URL)	Specify the Delta Link (URL) to perform the operation; leave blank for the initial request. This parameter should be used in subsequent requests after retrieving the Delta Link from the previous response.

6 Reference

6.1 Troubleshooting

Behaviour	Reason	Resolution
Inconsistent Data Retrieval while Pagination	Server-side pagination does not always return the expected response in the initial request, leading to inconsistent data retrieval in certain cases and this could also impact the Delta operation.	It is recommended to implement additional checks, such as handling next-page tokens or retry mechanisms, to ensure complete data retrieval. For more details, see Paging Microsoft Graph Data.
Query Parameter Handling with Parentheses	The query parameters having parentheses () may not be correctly interpreted by SAP CI during deployment. Example: `$filter=startswith(displayName,'abc')&$select=displayName,description`	It is recommended to handle the query parameters **dynamically** to avoid iflow deployment issues.
Payment Model	API usage has exceeded Microsoft's evaluation limits. When the monthly evaluation quota is reached, further API access is restricted until billing is set up. **Error:** "code": "PaymentRequired", "message": "Evaluation capacity for the month has exceeded. Complete billing onboarding."	This occurs when the API usage reaches the evaluation limits set by Microsoft. For example, when using Delta operation, you may encounter an error message indicating **PaymentRequired.** For more information, see Payment Models.

Behaviour	Reason	Resolution
Asynchronous Operation Failure	The Asynchronous operations in Microsoft Teams are long-running operations that may exceed execution time constraints. Concurrent updates can also cause conflicts. **Error:** "code": "Unknown", "message": "Another update to this team is ongoing. Try again later.", "target": "Templates"	Allow sufficient time for operations to complete before initiating new requests. Periodically check operation status using a GET request with intervals greater than 30 seconds. For more information, see Async Operation Resource type.
Soft Delete in Microsoft Teams	Deleted resources (e.g., channels, chats) are not immediately removed and may take several days for permanent deletion.	The resources are initially soft deleted and remain recoverable for a certain period. The actual timeline for permanent deletion depends on system settings. Additionally, administrators at the organization level can modify the retention period. For more information, see Retention Policy.
Microsoft Teams Limits and Throttling Specifications	Microsoft Teams and Graph API enforce limits and throttling for performance optimization	For more information about this, refer to Limits & Throttling Specifications.

7 Appendix

This section lists and describes all the operations supported by the Microsoft Teams adapter. For detailed information on any particular operation, see Microsoft Teams documentation.

The following table provides information regarding various operations available in Microsoft Teams Adapter.

Resource	Operation	Permissions Allowed
Channel	Create standard channel	Delegated and Application
Channel	Create private channel	Delegated and Application
Channel	Create shared channel	Delegated and Application
Channel	Get async operation status	Delegated and Application
Channel	Get team sharing a channel	Delegated and Application
Channel	Get next results page	Delegated and Application
Channel	Get channel	Delegated and Application
Channel	Update channel	Delegated and Application
Channel	Delete channel	Delegated and Application
Channel	Remove incoming channel	Delegated and Application
Channel	Get primary channel	Delegated and Application
Channel	Unshare channel with team	Delegated and Application
Channel	List all channels	Delegated and Application
Channel	List incoming channels	Delegated and Application
Channel	List team channels	Delegated and Application
Channel	List teams sharing a channel	Delegated and Application
Chat	Create chat	Delegated and Application
Chat	Get chat	Delegated and Application
Chat	Update chat	Delegated and Application
Chat	Delete chat	Delegated and Application
Chat	List chats of a user	Delegated and Application
Chat	Get next results page	Delegated and Application
Member	Add channel member	Delegated and Application

Resource	Operation	Permissions Allowed
Member	Get channel member	Delegated and Application
Member	List channel members	Delegated and Application
Member	Remove channel member	Delegated and Application
Member	Update channel member	Delegated and Application
Member	List channel allowed members	Delegated and Application
Member	List chat members	Delegated and Application
Member	Get chat member	Delegated and Application
Member	Get next results page	Delegated and Application
Member	Remove chat member	Delegated and Application
Member	List team members	Delegated and Application
Member	Add team member	Delegated and Application
Member	Add team members in bulk	Delegated and Application
Member	Get team member	Delegated and Application
Member	Remove team member	Delegated and Application
Member	Update team member	Delegated and Application
Member	Add chat member	Delegated and Application
Message	Get channel message	Delegated and Application
Message	Get channel message reply	Delegated and Application
Message	List channel messages	Delegated and Application
Message	List channel message replies	Delegated and Application
Message	Delete channel message	Delegated
Message	Delete channel message reply	Delegated
Message	Undo channel message deletion	Delegated
Message	Undo channel reply message deletion	Delegated
Message	Delete chat message	Delegated
Message	Undo chat message deletion	Delegated
Message	Send channel message reply	Delegated
Message	Send channel message	Delegated
Message	List chat messages	Delegated and Application
Message	Get chat message	Delegated and Application

Resource	Operation	Permissions Allowed
Message	Send chat message	Delegated
Message	Get next results page	Delegated and Application
Message	Get delta chat messages for user	Application
Team	Create new default team	Delegated and Application
Team	Get team	Delegated and Application
Team	Update team	Delegated and Application
Team	Archive team	Delegated and Application
Team	Unarchive team	Delegated and Application
Team	Clone team	Delegated and Application
Team	List joined team of a user	Delegated and Application
Team	List all teams in an organization	Delegated and Application
Team	List associated teams of a user	Delegated and Application
Team	List deleted teams	Delegated and Application