



SharePoint APIs

SharePoint Online (M365) & REST API

I. Overview

- a. Background and Introduction. Explaining the variations of API sets that developers can access and use to interact with SharePoint.
- b. Brief overview of APIs, Includes information on REST and REST API.
- c. Significance, how the use of these different API sets can be used to interact with SharePoint data and services as well as how you can determine which one would best suit your needs.
- d. SharePoint Online and its implementation on how we can utilize the M365 instance in relation to our SharePoint.

II. Methodology

- a. With prerequisite knowledge provided previously by the overview we can implement the information we gained and investigate the SharePoint REST API.
- b. Introduces the ability for you to remotely interact with SharePoint sites by using REST.
- c. Working with list and list items, as well as working with folders and files are integral for use in SharePoint.
- d. Within the information for retrieving information from a list it notes XML as the payload being returned. Can it return the Json payload instead?

III. Purpose

- a. We want to work with JSON objects, and we'll be using an HTTP request to make the transaction.
- b. Interaction with REST endpoints is something that we will want to investigate and work with.
- c. Working with CRUD operations and responses is going to be most beneficial.
- d. Where within our M365 instance we can find authorization tokens that allow us to connect to our SharePoint instance.

IV. References



Overview:

I have been researching and understanding the usage and purpose of SharePoint APIs, which are powerful tools within SharePoint and provide API sets that developers can use to interact with data and services. Further information is discussed within the synopsis...

API (application programming interface):

- Set of rules or protocols that enables software applications to communicate with each other to exchange, data, features, and functionality.
- It allows different software components to interact and share information.
- Commonly used in web development, mobile apps, and other software systems.

REST API:

- SharePoint includes a Representational State Transfer (REST) service that allows remote interaction with SharePoint data using REST web requests.
- Developers can use any technology that supports REST to perform CRUD operations on SharePoint entities.
- REST endpoints correspond to types and members in the SharePoint client object models.
- You construct RESTful HTTP requests using the OData standard, which serves responses in either Atom or JSON format.

REST (Representational State Transfer):

- Architectural style that guides the design and development of networked systems. It's lightweight and flexible in how it interacts with SharePoint remotely using technology that supports its protocol.
- Focuses on the notion of resources, which are identified by unique URLs and is based on the standard Open Data Protocol (ODATA) allows developers to perform basic create, read, update, and delete (CRUD) operations.

REST Endpoints:

- The endpoints in SharePoint REST correspond to the types and members in SharePoint client object models. By using HTTP requests, you can use REST endpoints to do CRUD operations against SharePoint entities like lists and sites.
- REST endpoints closely mimic the API signature of the resource in the SharePoint client object model. The main entry points for the REST service represent the site collection and site of the specified context.
- RESTful Endpoints or REST endpoints are individual URLs or entry points for accessing the resources of a RESTful API.



OData (Open Data Protocol):

- ISO/IEC approved, OASIS standard that defines a set of best practices for building and consuming REST APIs.

HTTP commands with SharePoint REST service:

- a. **GET:** Retrieve information from the server
- b. **POST:** Create a new item on the server
- c. **PUT:** Update an existing item on the server
- d. **DELETE:** Remove an item from the server

SharePoint M365 (Cloud Based Instances)

- Also known as SharePoint Online is a cloud-based service provided by Microsoft. It offers a platform that allows organizations to efficiently store, share, and manage digital information.
- It is included in Microsoft 365, and allows you to build intranet sites such as the one we have, manage content, etc.
- A SharePoint site is a collection of pages, libraries, lists, and content. Which store and manage folders, data, tasks, events, and information of our choosing.
- It is a digital workspace that allows us to transform the way we can collaborate and manage information by providing a workspace on the cloud. It allows us to work together on projects, documents, and tasks remotely and fluidly.



Methodology:

To fully understand and use the REST capabilities that are built into SharePoint by constructing a RESTful HTTP request by using the OData standard, we introduce and use the **client.scv** web service in SharePoint. That handles HTTP requests and serves the appropriate response in either Atom or Java Script Notation (JSON) format. Our client application then must parse the response.

SharePoint REST API integration:

- For SharePoint Online, innovation using a REST API against SharePoint is driven from the Microsoft Graph REST API's.
- However, Legacy CRUD commands can still be used when completing basic operations using SharePoint REST endpoints.

Read Operations (GET commands):

- To read information from a REST endpoint, you must know both the URL of the endpoint and the OData representation of the SharePoint entity that is exposed at that endpoint.
- You could make a GET request to retrieve lists in a specific SharePoint site if you wanted to read data with the SharePoint REST interface.

Create Operations (POST commands):

- You can create and update SharePoint entities by constructing RESTful HTTP requests to the appropriate endpoints.
- You would use a POST request.

Update Operations (PUT commands):

- When updating entities, you also pass a PUT or MERGE HTTP request method by adding one of those terms to the headers of your request.

Returning a JSON payload rather than an XML:

- By default, when working with SharePoint REST API, when retrieving information from a list by default the results are returned in an XML payload.
- If we prefer JSON, we can specify it in the request header, to get results in the JSON format, we can include an **Accept** header in the request. (HTTP request)



Purpose:

I was asked to look at where within our M365 instance we can find authorization tokens that allow us to connect to our SharePoint instance.

Microsoft Entra ID:

- Formerly known as Azure Active Directory, Microsoft Entra ID is a cloud-based identity and access management service that allows employees to access external resources, including Microsoft 365.
- It is Microsoft's enterprise cloud-based **identity and access management (IAM)** solution.
- It allows them to also access internal resources like apps on the corporate intranet. Microsoft Online business services such as Microsoft 365, or Microsoft Azure rely on Microsoft Entra ID for sign-in activities.

Authorization Tokens:

- Within Microsoft 365 we can navigate to SharePoint admin center. Go to "App Catalog" section. Click on "App permissions" under "Settings" we can generate a new Client ID and Client Secret which essentially can be considered Authorization Tokens.

Connect M365 to SharePoint using tokens:

- Using the Client ID and Secret we can use it to connect M365 to SharePoint using the authorization tokens.

[How to Get a Client ID and Client Secret in SharePoint Online | Process Street | Checklist, Workflow and SOP Software](#)



References:

[SharePoint .NET Server, CSOM, JSOM, and REST API index | Microsoft Learn](#)

- SharePoint .NET Server, CSOM, JSOM, and REST API index

[Get to know the SharePoint REST service | Microsoft Learn](#)

- Get to know the SharePoint REST service.

[Operations using SharePoint REST v2 \(Microsoft Graph\) endpoints | Microsoft Learn](#)

- SharePoint REST operations

[What is SharePoint Online? Features & Benefits | Master Data Skills + AI \(enterprisedna.co\)](#)

- Information on SharePoint Online or M365 version.

<https://blog.enterprisedna.co/sharepoint-rest-api-explained-with-examples/>

- SharePoint REST API: Explained With Examples

[Working with lists and list items with REST | Microsoft Learn](#)

- Working with lists and list items with REST

[Working with folders and files with REST | Microsoft Learn](#)

- Working with folders and files with REST

[NEUGC 2024 - Workshop Generating and Consuming JSON - Birgitta Hauser.pdf](#)

- Using JSON when working with SQL when interacting with REST endpoints.

[Implementing RESTful endpoints: a step-by-step guide \(lonti.com\)](#)

- Implementation of RESTful endpoints, and how to fully utilize them.

[The key ingredients of RESTful APIs: resources, representations, and statelessness \(lonti.com\)](#)

- Restful APIs what they are, what they do, and an overview.

[Complete basic operations using SharePoint REST endpoints | Microsoft Learn](#)

- SharePoint REST API documentation