



**SAP Fieldglass** 

API Reference | PUBLIC

SAP Fieldglass

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# **OData-Based Analytic API**

## **Technical Specifications Guide**

# Content

<b>1</b>	<b>Introduction.</b> . . . . .	<b>3</b>
<b>2</b>	<b>API Workflow.</b> . . . . .	<b>4</b>
<b>3</b>	<b>Configuring Authentication and Authorization.</b> . . . . .	<b>5</b>
3.1	OAuth2 Service Authentication. . . . .	5
3.2	Obtaining an Access Token from SAP Fieldglass Server. . . . .	6
3.3	Token Expiration. . . . .	8
<b>4</b>	<b>Get Providers.</b> . . . . .	<b>9</b>
<b>5</b>	<b>Get Metadata.</b> . . . . .	<b>11</b>
<b>6</b>	<b>Get Entities.</b> . . . . .	<b>14</b>
<b>7</b>	<b>Get Data.</b> . . . . .	<b>16</b>

# 1 Introduction

The SAP Fieldglass OData-Based Analytic API enables clients to retrieve report data from the SAP Fieldglass application.

You can retrieve a list of all available providers and entities for a provider, and then data about specific entities.

## Related Information

[API Workflow \[page 4\]](#)

[Configuring Authentication and Authorization \[page 5\]](#)

## 2 API Workflow

Provides an overview of the SAP Fieldglass API workflow using the OAuth 2.0 protocol.

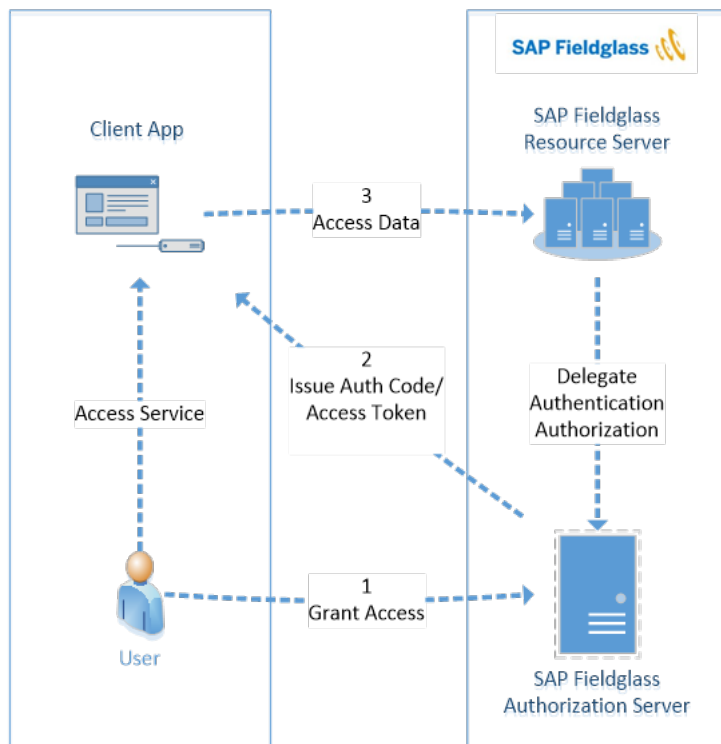
### Workflow

The SAP Fieldglass REST API resource allows clients to send and receive integrated data directly against the application. The API uses the OAuth 2.0 protocol for authentication and authorization. SAP Fieldglass supports common OAuth 2.0 scenarios such as those for Web server, installed, and client-side applications.

To begin, you must obtain OAuth 2.0 client credentials from your SAP Fieldglass representative. Next, your client application requests an access token from the SAP Fieldglass Authorization Server, extracts a token from the response, and then sends the token to the SAP Fieldglass REST API that you want to access.

All applications follow a basic pattern when accessing an SAP Fieldglass REST API using OAuth 2.0.

The following diagram illustrates the API authentication and authorization workflow.



# 3 Configuring Authentication and Authorization

The following steps summarize how to obtain OAuth 2.0 authorization and access token from SAP Fieldglass.

1. Obtain OAuth 2.0 client credentials from your SAP Fieldglass Representative.
2. Obtain an access token from the SAP Fieldglass Authorization Server.
3. Send the access token to an SAP Fieldglass REST API.
4. Refresh the access token, if necessary.

For details on how to perform each of these steps, see the following sections in this guide.

## 3.1 OAuth2 Service Authentication

There are three authentication options available for the OAuth2 service—client credentials, SAML authentication, and certificate-based authentication .

### Client Credentials Authentication

Client credentials authentication provides a relatively simple mechanism for authentication, using a client ID and client secret. The client ID is a valid SAP Fieldglass username and the client secret can be either that user's application password, or, to avoid issues with password rotation, a `<license key>`, as generated within the SAP Fieldglass system. Refer to the [SAP Fieldglass Configuration Manager](#) to create the license key.

The URL to use for client credentials requests is:

```
https://<SAP Fieldglass Environment URL>/api/oauth2/v2.0?grant_type=client_credentials&response_type=token
```

### SAML Authentication

A SAML assertion can be generated for a valid user and passed via a 'SAML Response' parameter (note that this authentication still uses the client credentials grant type as a framework). Refer to [Obtaining an Access Token from SAP Fieldglass Server \[page 6\]](#) for more information

The URL to use for SAML authentication request is:

```
https://<SAP Fieldglass environment URL>/api/oauth2/v2.0?grant_type=client_credentials&response_type=token
```

## Certificate Authentication

Certificate-based authentication provides a secure mechanism for authentication, eliminating the need for explicit credentials to be used (note that this authentication still uses the client credentials grant type as a framework). To leverage certificate authentication, do the following:

- Use a required X509 certificate issued by a trusted Certificate Authority (for example, DigiCert). Contact your SAP Fieldglass representative for more information.
- Use the correct URL.

### Note

The URL includes `auth` in the sub-domain.

- For a test environment, the URL is in the following format: `https://<env_code>-auth.fgvms.com/ws2/api/oauth2/v2.0?grant_type=client_credentials&response_type=token`. For example: `https://xuat-fgvms.com/api/oauth2/v2.0?grant_type=client_credentials&response_type=token`.

### Note

Not all test environments are configured. You may need to submit a request to have it configured.

- For U.S. production, the URL is: `https://auth.fieldglass.net/api/oauth2/v2.0?grant_type=client_credentials&response_type=token`.
- For EU production, the URL is: `https://sso.fieldglass.eu/api/oauth2/v2.0?grant_type=client_credentials&response_type=token`.

To set up the X509 certificate for use in OAuth2 authentication, complete the steps outlined in the section within the SAP Fieldglass application. This adds the public certificate to the application and links it to a user (ensure it's a valid, active user), thus not requiring the credentials to be supplied as part of the OAuth2 request itself.

## 3.2 Obtaining an Access Token from SAP Fieldglass Server

Describes how to obtain an access token from the SAP Fieldglass server.

Before your client application can access private data using an SAP Fieldglass REST API, it must request an access token from the SAP Fieldglass Authorization Server to grant access to the API. A single access token can grant varying degrees of access to multiple APIs.

After an application obtains an access token, it sends the token to an SAP Fieldglass REST API in an HTTP authorization header or as part of the request body.

The `x-ApplicationKey` header is optional for Connector, Identity (SCIM), and Reporting APIs. If you receive an error for not including an API Key, you can request one from Fieldglass administration.

### Obtain Token via Username/Password Credentials

To obtain the access token using username/password credentials, send a `x-www-form-urlencoded` HTTP GET request specific to the username/password credentials you received from SAP Fieldglass.

The following sample code illustrates how to obtain the access token with user/password credentials.

#### Sample Code

sample request for token with user/password credential

```
POST /api/oauth2/v2.0/token?grant_type=client_credentials&response_type=token
  Authorization: Basic {Base64Encoded(user:credential)}
  Content-Type: application/x-www-form-urlencoded
  X-ApplicationKey: {server provided key}
```

#### Sample Code

sample response

```
{"access_token" : "WDX1Kj3TTON3rpg9GHnZpbKmvj1=",
  "token_type" : "Bearer", "expires_in" : 7200}
```

### Obtain Token via SAML Authentication

The access token can also be retrieved using SAML authentication. The primary role of SAML in online security is that it enables you to access multiple Web applications using one set of login credentials.

The SAML assertion is POSTed to the OAuth token endpoint, which in turn processes the assertion and issues an `access_token` based upon prior approval of the application. The client doesn't need a `client_secret` to be passed to the token endpoint.

The following sample code illustrates how to use SAML to obtain the access token with SAML.

#### Sample Code

sample request for token with SAML

```
POST /api/oauth2/v2.0/token?
grant_type=client_credentials&response_type=token&SAMLResponse={Base64Encoded
  SAML Assertion}
  Authorization: Basic {Base64Encoded(user:credential)}
  Content-Type: application/x-www-form-urlencoded
  X-ApplicationKey: {server provided key}
```

#### Sample Code

sample response

```
{"access_token" : "WDX1Kj3TTON3rpg9GHnZpbKmvj1=",
  "token_type" : "Bearer", "expires_in" : 7200}
```

## 3.3 Token Expiration

Access tokens have limited lifetimes (*the current default is 7200 seconds = 120 minutes*).

If your application requires access to an SAP Fieldglass REST API beyond the lifetime of a single access token, it needs to obtain a new token as outlined in [Obtaining an Access Token from SAP Fieldglass Server \[page 6\]](#).

If you make an API call using an invalid token, you receive a "401 Unauthorized" response back from the server. A token could be invalid and in need of regeneration for the following reasons:

- The token has expired.
- The user has revoked the permission initially granted to your application.
- You've changed the member permissions (scope) that your application is requesting.
- If a subsequent OAuth 2 flow has generated a new access token, then the previous token is invalidated.

A predictable expiry time isn't the only contributing factor to token invalidation. Be sure that your applications are coded to properly handle an encounter with a 401 error, by redirecting the user back to the start of the authorization workflow.



# 4 Get Providers

Retrieves available providers.

## Request

The following request returns available providers. The ProviderID can be used in subsequent operations to retrieve specific metadata and/or data.

### Sample Code

```
GET /Providers
```

## Parameters

Name	Location	Type	Description
Authorization	Header	String	Only required for production access when using SAP Fieldglass.
X-ApplicationKey	Header	String	The company-specific key provided by SAP Fieldglass for API access.

## Responses

Response Code	Description
200	Gets all providers.

### Sample Code

```
[  
  {  
    "ProviderID": "report_Worker",  
    "NamespaceID":  
      "fieldglass.insite",  
    "Description": "description",  
    "DeltaMethod": "string",
```

Response Code	Description
	<pre data-bbox="820 283 1421 409"> "ServiceURL": "/api/data_hub/ report_Worker/" } ]</pre>
400	Bad Request. This response is returned if the specified URL is invalid, the request is not formatted correctly, or if the request is missing a required field.
401	Unauthorized. User/password or application key is not verified.
403	Forbidden. Token is not verified.
404	Not Found. Service being requested does not exist.
500	Internal Server Error. Server is not available.
	<p data-bbox="836 787 1055 819">↔ Sample Code</p> <pre data-bbox="852 850 1421 997"> { "TransactionID": "string", "ReturnCode": 0, "Message": "string" }</pre>
503	Internal Server Error. Server is not available.

# 5 Get Metadata

Returns metadata for a provider.

## Request

The following request returns metadata for the specified ProviderID.

### Sample Code

```
GET /{ProviderID}/$metadata
```

## Parameters

Name	Location	Type	Description
Authorization	Header	String	Only required for production access when using SAP Fieldglass.
X-ApplicationKey	Header	String	The company-specific key provided by SAP Fieldglass for API access.
ProviderID	Path	String	The ID for the entity (in this case, the report). This is returned when getting all providers. Required.

## Responses

Response Code	Description
200	Metadata information for the given entity.

### Sample Code

```
<?xml version="1.0" encoding="UTF-8" ?>  
<metaData>  
  <Schema>
```

**Response Code****Description**

```

<-Namespace>fieldglass.insite</-
Namespace>
  <-Alias>insite</-Alias>
  <EntityType>
    <-Name>string</-Name>
    <Key>
      <PropertyRef>
        <-Name>string</-
Name>
          </PropertyRef>
        </Key>
      <Property>
        <-
Name>business_unit</-Name>
        <-Type>Edm.String</-
Type>
        <-MaxLength>100</-
MaxLength>
        </Property>
      </EntityType>
    <EntityContainer>
      <-Name>dbContainer</-
Name>
        <EntitySet>
          <-
Name>job_postings</-Name>

<-EntityType>insite.job_posting</-
EntityType>
      <Annotation>
        <-
Term>Capabilities.Supported</-Term>
        <Record>

<PropertyValue>
          <-
Property>Supported</-Property>
          <Bool>false</Bool>
        </
PropertyValue>
        </Record>
      </Annotation>
    </EntitySet>
  </EntityContainer>
</Schema>
</metaData>

```

400	Bad Request. This response is returned if the specified URL is invalid, the request is not formatted correctly, or if the request is missing a required field.
401	Unauthorized. User/password or application key is not verified.
403	Forbidden. Token is not verified.
404	Not Found. Service being requested does not exist.
500	Internal Server Error. Server is not available.

**Response Code****Description**

## ↔ Sample Code

```
{  
  "TransactionID": "string",  
  "ReturnCode": 0,  
  "Message": "string"  
}
```

503

Internal Server Error. Server is not available.

# 6 Get Entities

Returns all available entities.

## Request

The following request returns all available entities. You can use the name returned in conjunction with the ProviderID to get data about a particular entity.

### Sample Code

```
GET /{ServiceURL}
```

## Parameters

Name	Location	Type	Description
Authorization	Header	String	Only required for production access when using SAP Fieldglass.
X-ApplicationKey	Header	String	The company-specific key provided by SAP Fieldglass for API access.
ServiceURL	Path	String	Service URL from provider. This is returned when getting all providers.

## Responses

Response Code	Description
200	Gets all entities..

### Sample Code

```
{  
  "value": [  
    {  
      }  
    ]  
}
```

Response Code	Description
400	<div data-bbox="818 283 1425 451" data-label="Code-Block"> <pre> " name": "workers", " url": "workers" } ] } </pre> </div> <p>Bad Request. This response is returned if the specified URL is invalid, the request is not formatted correctly, or if the request is missing a required field.</p>
401	<p>Unauthorized. User/password or application key is not verified.</p>
403	<p>Forbidden. Token is not verified.</p>
404	<p>Not Found. Service being requested does not exist.</p>
500	<p>Internal Server Error. Server is not available.</p> <div data-bbox="818 800 1425 1041" data-label="Code-Block"> <p>↔ Sample Code</p> <pre> { "TransactionID": "string", "ReturnCode": 0, "Message": "string" } </pre> </div>
503	<p>Internal Server Error. Server is not available.</p>

# 7 Get Data

Returns data for an entity.

## Request

The following request returns data for the specified ProviderID and entity.

### Sample Code

```
GET /Providers
```

## Parameters

Name	Location	Type	Description
Authorization	Header	String	Only required for production access when using SAP Fieldglass.
X-ApplicationKey	Header	String	The company-specific key provided by SAP Fieldglass for API access.
ProviderID	Path	String	The ID for the entity (in this case, the report). Required.
entityName	Path	String	The name of the entity (report). It can be obtained via the GET /{ServiceURL} operation. Required.
\$top	Query	Integer	Limits the number of items returned, up to but not exceeding the number specified. The default is 20.
\$skip	Query	Integer	Excludes the number of items specified from the collection.
\$filter	Query	String	Restricts the items returned by property values.



Name	Location	Type	Description
\$orderby	Query	Array [String]	The property or properties used to order the results. If there is more than one, separate using a comma. You can also specify asc for ascending and desc for descending order.
\$select	Query	Array [String]	Provide a comma-separated list of the properties to be returned.

## Responses

Response Code	Description
200	<p>Gets all providers.</p> <div style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 10px; margin-top: 10px;"> <p>↔ Sample Code</p> <pre>[   {     "ProviderID": "report_Worker",     "NamespaceID": "fieldglass.insite",     "Description": "description",     "DeltaMethod": "string",     "ServiceURL": "/api/data_hub/ report_Worker/"   } ]</pre> </div>
400	Bad Request. This response is returned if the specified URL is invalid, the request is not formatted correctly, or if the request is missing a required field.
401	Unauthorized. User/password or application key is not verified.
403	Forbidden. Token is not verified.
404	Not Found. Service being requested does not exist.
500	<p>Internal Server Error. Server is not available.</p> <div style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 10px; margin-top: 10px;"> <p>↔ Sample Code</p> <pre>{   "TransactionID": "string",   "ReturnCode": 0,   "Message": "string" }</pre> </div>

**Response Code****Description**

503



Internal Server Error. Server is not available.

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