
Table of Contents

Welcome	1
Using the FinSpace API	2
FinSpace API Operations by Topic	4
Data Loading Operations	4
Operations for loading data	4
API credentials Operations	4
Operations for accessing API credentials	4
API Reference Index	5
Actions	5
CreateChangeset	6
GetProgrammaticAccessCredentials	10
GetWorkingLocation	12
Data Types	14
ChangesetInfo	15
Credentials	18
ErrorInfo	19
Common Errors	20
Common Parameters	21
AWS glossary	24

Welcome

Amazon FinSpace is a data management and analytics service for the financial services industry (FSI). It reduces the time to find and prepare all types of financial data to be ready for analysis from months to minutes.

The Amazon FinSpace Data API Reference provides descriptions, syntax, and usage examples for data operations and data types for Amazon FinSpace. You can use the API operations to programmatically expand and manage actions that you can take inside your FinSpace environment.

You can also use one of the AWS SDKs to access an API operation that's tailored to the programming language or platform that you're using. For more information, see [AWS SDKs](#).

Using the Amazon FinSpace API

This section provides details on how you can use the FinSpace data APIs.

API credentials – You need to be a registered user in FinSpace environment to use the FinSpace data APIs. You use API credentials that are associated with your user profile in Amazon FinSpace. The credentials are only valid for 60 minutes. There are two ways to access the API credentials.

1. **Copy the API credentials from FinSpace web application** - You do not to be a registered Identity Access and Management (IAM) user. Use the following procedure to procure short term API credentials to use with FinSpace SDK.
 - a. From the FinSpace homepage, go the gear menu. **Choose** API Credentials
 - b. Copy the **Access Key ID, Secret Access Key, Session Token**
 - c. Use the credentials to use the FinSpace data APIs.

```
#!/usr/bin/env python
import boto3
session = boto3.session.Session()
finSpaceClient = session.client(
    region_name='us-east-1',
    service_name='finspace-data',
    aws_access_key_id='Specify Access Key ID',
    aws_secret_access_key='Specify Secret Access Key',
    aws_session_token='Specify Session Token'
)
```

2. **Access credentials programmatically using IAM access key id and secret access key** - Your Amazon Resource Name (ARN) must be registered with your user profile in FinSpace web application to use this method. Please contact your administrator to verify. You can find your FinSpace environment id from the sign-in URL that you use to login to your FinSpace web application. For example, if your FinSpace sign-in URL is <https://vs57phhvijir4kv5rf6ywt.us-east-1.amazonfinspace.com>, the environment id is vs57phhvijir4kv5rf6ywt.

```
#!/usr/bin/env python
import boto3
REGION = "us-east-1"
PROD_ENVIRONMENT_ID = "Specify FinSpace environment id"
AWS_ACCESS_KEY_ID = "Specify AWS_ACCESS_KEY_ID" # Access key id
of your IAM user
AWS_SECRET_ACCESS_KEY = "Specify AWS_SECRET_ACCESS_KEY" #
Secret access key for your IAM user
session = boto3.Session(AWS_ACCESS_KEY_ID,
AWS_SECRET_ACCESS_KEY, region_name=REGION)
client = session.client(
    region_name=REGION,
    service_name='finspace-data',
    aws_access_key_id=AWS_ACCESS_KEY_ID,
    aws_secret_access_key=AWS_SECRET_ACCESS_KEY
)
apiCredentials =
client.get_programmatic_access_credentials(environmentId=PROD_ENVIRONMENT_NAME)
finSpaceClient = session.client(
    service_name='finspace-data',
    aws_access_key_id=apiCredentials['credentials']
['AccessKeyId'],
```

```
['SecretAccessKey'],      aws_secret_access_key=apiCredentials['credentials']  
                           aws_session_token=apiCredentials['credentials']  
['SessionToken']
```

Operations by Topic

Use this section to locate FinSpace API operations by topic.

Topics

- [Operations for loading data](#) (p. 4)
- [Operations for accessing API credentials](#) (p. 4)

Operations for loading data

Operations for loading data

The API operations in this section control loading of data in FinSpace.

- [CreateChangeset](#) (p. 6)
- [GetWorkingLocation](#) (p. 12)

Operations for accessing API credentials

Operations for accessing API credentials

- [GetProgrammaticAccessCredentials](#) (p. 10)

API Reference Index

This section contains the API Reference documentation.

Topics

- [Actions](#) (p. 5)
- [Data Types](#) (p. 14)
- [Common Errors](#) (p. 20)
- [Common Parameters](#) (p. 21)

Actions

The following actions are supported:

- [CreateChangeset](#) (p. 6)
- [GetProgrammaticAccessCredentials](#) (p. 10)
- [GetWorkingLocation](#) (p. 12)

CreateChangeset

Creates a new changeset in a FinSpace dataset.

Request Syntax

```
POST /datasets/datasetId/changesets HTTP/1.1
Content-type: application/json
```

```
{
  "changeType": "string",
  "formatParams": {
    "string" : "string"
  },
  "formatType": "string",
  "sourceParams": {
    "string" : "string"
  },
  "sourceType": "string",
  "tags": {
    "string" : "string"
  }
}
```

URI Request Parameters

The request uses the following URI parameters.

datasetId (p. 6)

The unique identifier for the FinSpace dataset in which the changeset will be created.

Length Constraints: Minimum length of 1. Maximum length of 26.

Required: Yes

Request Body

The request accepts the following data in JSON format.

changeType (p. 6)

Option to indicate how a changeset will be applied to a dataset.

- REPLACE - Changeset will be considered as a replacement to all prior loaded changesets.
- APPEND - Changeset will be considered as an addition to the end of all prior loaded changesets.

Type: String

Valid Values: REPLACE | APPEND | MODIFY

Required: Yes

sourceParams (p. 6)

Source path from which the files to create the changeset will be sourced.

Type: String to string map

Required: Yes

sourceType (p. 6)

Type of the data source from which the files to create the changeset will be sourced.

- S3 - Amazon S3.

Type: String

Valid Values: S3

Required: Yes

formatParams (p. 6)

Options that define the structure of the source file(s).

Type: String to string map

Required: No

formatType (p. 6)

Format type of the input files being loaded into the changeset.

Type: String

Valid Values: CSV | JSON | PARQUET | XML

Required: No

tags (p. 6)

Metadata tags to apply to this changeset.

Type: String to string map

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "changeset": {
    "changesetArn": "string",
    "changesetLabels": {
      "string" : "string"
    },
    "changeType": "string",
    "createTimestamp": number,
    "datasetId": "string",
    "errorInfo": {
      "errorCategory": "string",
      "errorMessage": "string"
    },
    "formatParams": {
      "string" : "string"
    },
    "formatType": "string",
    "id": "string",
    "sourceParams": {
      "string" : "string"
    },
  },
}
```



```
    "sourceType": "string",  
    "status": "string",  
    "updatedByChangesetId": "string",  
    "updatesChangesetId": "string"  
  }  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

changeset (p. 7)

Returns the changeset details.

Type: [ChangesetInfo](#) (p. 15) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 20).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServerErrorException

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

ResourceNotFoundException

One or more resources can't be found.

HTTP Status Code: 404

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetProgrammaticAccessCredentials

Request programmatic credentials to use with Habanero SDK.

Request Syntax

```
GET /credentials/programmatic?
durationInMinutes=durationInMinutes&environmentId=environmentId HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

durationInMinutes (p. 10)

The time duration in which the credentials remain valid.

Valid Range: Minimum value of 60. Maximum value of 720.

environmentId (p. 10)

The habanero environment identifier.

Length Constraints: Minimum length of 1. Maximum length of 26.

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "credentials": {
    "accessKeyId": "string",
    "secretAccessKey": "string",
    "sessionToken": "string"
  },
  "durationInMinutes": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

credentials (p. 10)

Returns the programmatic credentials.

Type: [Credentials](#) (p. 18) object

durationInMinutes (p. 10)

Returns the duration in which the credentials will remain valid.

Type: Long

Valid Range: Minimum value of 60. Maximum value of 720.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 20\)](#).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServerErrorException

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 429

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetWorkingLocation

A temporary Amazon S3 location to copy your files from a source location to stage or use as a scratch space in Habanero notebook.

Request Syntax

```
POST /workingLocationV1 HTTP/1.1
Content-type: application/json

{
  "locationType": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

locationType (p. 12)

Specify the type of the working location.

- **SAGEMAKER** - Use the Amazon S3 location as a temporary location to store data content when working with FinSpace Notebooks that run on SageMaker studio.
- **INGESTION** - Use the Amazon S3 location as a staging location to copy your data content and then use the location with the changeset creation operation.

Type: String

Valid Values: **INGESTION** | **SAGEMAKER**

Required: No

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
  "s3Bucket": "string",
  "s3Path": "string",
  "s3Uri": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

s3Bucket (p. 12)

Returns the Amazon S3 bucket name for the working location.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `.*\S.*`

s3Path (p. 12)

Returns the Amazon S3 Path for the working location.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

s3Uri (p. 12)

Returns the Amazon S3 URI for the working location.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Pattern: `.*\S.*`

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 20\)](#).

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

InternalServerErrorException

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 429

ValidationException

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

Data Types

The following data types are supported:

- [ChangesetInfo](#) (p. 15)
- [Credentials](#) (p. 18)
- [ErrorInfo](#) (p. 19)

ChangesetInfo

A changeset is unit of data in a dataset.

Contents

Note

In the following list, the required parameters are described first.

changesetArn

The ARN identifier of the changeset.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

changesetLabels

Tags associated with the changeset.

Type: String to string map

Required: No

changeType

Change type indicates how a changeset is applied to a dataset.

- `REPLACE` - Changeset is considered as a replacement to all prior loaded changesets.
- `APPEND` - Changeset is considered as an addition to the end of all prior loaded changesets.
- `MODIFY` - Changeset is considered as a replacement to a specific prior ingested changeset.

Type: String

Valid Values: `REPLACE` | `APPEND` | `MODIFY`

Required: No

createTimestamp

The timestamp at which the changeset was created in FinSpace.

Type: Timestamp

Required: No

datasetId

The unique identifier for the FinSpace dataset in which the changeset is created.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 26.

Required: No

errorInfo

The structure with error messages.

Type: [ErrorInfo](#) (p. 19) object

Required: No

formatParams

Structure of the source file(s).

Type: String to string map

Required: No

formatType

Format type of the input files loaded into the changeset.

Type: String

Valid Values: CSV | JSON | PARQUET | XML

Required: No

id

Unique identifier for a changeset.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 26.

Required: No

sourceParams

Source path from which the files to create the changeset are sourced.

Type: String to string map

Required: No

sourceType

Type of the data source from which the files to create the changeset are sourced.

- S3 - Amazon S3.

Type: String

Valid Values: S3

Required: No

status

The status of changeset creation operation.

Type: String

Valid Values: PENDING | FAILED | SUCCESS | RUNNING | STOP_REQUESTED

Required: No

updatedByChangesetId

Unique identifier of the changeset that is updated a changeset.

Type: String

Required: No

updatesChangesetId

Unique identifier of the changeset that is updated.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Credentials

Set short term API credentials.

Contents

Note

In the following list, the required parameters are described first.

accessKeyId

The access key identifier.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: No

secretAccessKey

The access key.

Type: String

Length Constraints: Maximum length of 1000.

Required: No

sessionToken

The session token.

Type: String

Length Constraints: Maximum length of 1000.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ErrorInfo

Error message.

Contents

Note

In the following list, the required parameters are described first.

errorCategory

The category of the error.

- `VALIDATION` - The inputs to this request are invalid.
- `SERVICE_QUOTA_EXCEEDED` - Service quotas have been exceeded. Please contact AWS support to increase quotas.
- `ACCESS_DENIED` - Missing required permission to perform this request.
- `RESOURCE_NOT_FOUND` - One or more inputs to this request were not found.
- `THROTTLING` - The system temporarily lacks sufficient resources to process the request.
- `INTERNAL_SERVICE_EXCEPTION` - An internal service error has occurred.
- `CANCELLED` - A user recoverable error has occurred.

Type: String

Valid Values: `The_inputs_to_this_request_are_invalid` |
`Service_limits_have_been_exceeded` |
`Missing_required_permission_to_perform_this_request`
`| One_or_more_inputs_to_this_request_were_not_found` |
`The_system_temporarily_lacks_sufficient_resources_to_process_the_request`
`| An_internal_error_has_occurred` | `Cancelled` |
`A_user_recoverable_error_has_occurred`

Required: No

errorMessage

The text of the error message.

Type: String

Length Constraints: Maximum length of 1000.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

InvalidAction

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 400

InvalidClientTokenId

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

An invalid or out-of-range value was supplied for the input parameter.

HTTP Status Code: 400

InvalidQueryParameter

The AWS query string is malformed or does not adhere to AWS standards.

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

RequestExpired

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

ServiceUnavailable

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

Action

The action to be performed.

Type: string

Required: Yes

Version

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: `access_key/YYYYMMDD/region/service/aws4_request`.

For more information, see [Task 2: Create a String to Sign for Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Handling Dates in Signature Version 4](#) in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to [AWS Services That Work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from the AWS Security Token Service, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see [Task 1: Create a Canonical Request For Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

AWS glossary

For the latest AWS terminology, see the [AWS glossary](#) in the *AWS General Reference*.